TM 9-1430-655-20-7-5

TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE MANUAL: VOICE COMMUNICATIONS EQUIPMENT MAINTENANCE

GUIDED MISSILE
AIR DEFENSE SYSTEM
AN/TSQ-73

HEADQUARTERS, DEPARTMENT OF THE ARMY

6 APRIL 1985

Change)
No 1)

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 1 September 1989

ORGANIZATIONAL MAINTENANCE MANUAL: VOICE COMMUNICATIONS EQUIPMENT MAINTENANCE

GUIDED MISSILE AIR DEFENSE SYSTEM AN/TSQ-73

TM 9-1430-655-20-7-5, dated 6 April 1985, is changed as follows.

1 Remove old pages and Insert new pages as indicated below New or changed material is indicated by the applicable change number, I e , Change 1. at the bottom of the page adjacent to the foldout number.

Remove pages	*Insert pages*
FO-32	FO-32
FO-33 (Sheets 1 thru 17)	FO-33 (Sheets 1 thru 17)

2. File this change sheet in the front of the publication for reference purposes.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

WILLIAM J. MEEHAN II
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-32, Unit Maintenance Requirements for the AN-TSQ-73 Missile System.

WARNING

DANGEROUS VOLTAGE

is used in the operation of this equipment

DEATH ON CONTACT

may result if personnel fail to observe safety precautions

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technician is aided by operators, he must warn them about dangerous areas.

Whenever possible, the power supply to the equipment must be shut off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it.

Be careful not to contact high-voltage connections when installing or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through vital organs of the body.

WARNING

Do not be misled by the term "low voltage". Potentials as low as 50 volts may cause death under adverse conditions.

For Artificial Respiration refer to FM 21-11.

EXTREMELY DANGEROUS POTENTIALS

greater than 500 volts exist in the following units:
Display console high voltage power supply
Display console CRT

WARNING

For emergencies requiring immediate shutdown of system power, press SYSTEM POWER OFF switch located on power cabinet power transfer unit. Observe that SYSTEM POWER ON indicator light goes off.

LIST OF EFFECTIVE PAGES

Insert latest change pages, dispose of superseded pages in accordance with applicable regulations.

NOTE: The portion of text affected by the latest change is indicated by a vertical line in the outer margin of the page.

Dates of issue for original and change pages are:

Original .... 0 .... 6 April 1985

Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.
a	0	FO-10 (2 sheets)	0	FO-24 (3 sheets)	0
b Blank	0	FO-11 (3 sheets)	0	FO-25 (3 sheets)	0
A	0	FO-12 (3 sheets)	0	FO-26 (3 sheets)	0
B Blank	0	FO-13	0	FO-27 (3 sheets)	0
i-v	0	FO-14 (4 sheets)	0	FO-28 (4 sheets)	0
vi Blank	0	FO-15	0	FO-29	0
FO-1 (4 sheets)	0	FO-16 (2 sheets)	0	FO-30 (2 sheets)	0
FO-2 (4 sheets)	0	FO-17 (2 sheets)	0	FO-31	0
FO-3 (4 sheets)	0	FO-18	0	FO-32	0
FO-4 (2 sheets)	0	FO-19	0	FO-33 (17 sheets)	0
FO-5 (2 sheets)	0	FO-20 (4 sheets)	0	FO-34 (5 sheets)	0
FO-6	0	FO-21 (4 sheets)	0	FO-35	0
FO-7 (3 sheets)	0	FO-22	0	FO-36	0
PO-8	0	FO-23 (3 sheets)	0	FO-37 (6 sheets)	0
FO-9 (3 sheets)	0				

* Zero in this column indicates an original page

TECHNICAL MANUAL)
)
No. 9-1430-655-20-7-5)

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 6 April 1985

ORGANIZATIONAL MAINTENANCE MANUAL: VOICE COMMUNICATIONS EQUIPMENT MAINTENANCE GUIDED MISSILE AIR DEFENSE SYSTEM AN/TSQ-73

REPORTING OF ERRORS

You can help improve this publication. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, U.S. Army Missile Command, ATTN: AMSMI-SNPM, Redstone Arsenal, AL 35898-5238. A reply will be furnished to you.

TABLE OF CONTENTS

Chapter **Page**

LIST OF ILLUSTRATIONS iii
LIST OF TABLES v

6 VOICE COMMUNICATIONS EXPANDED TROUBLESHOOTING 6-1

Section I. INTRODUCTION 6-1

6-1. Scope........ 6-1
6-2. Expanded Troubleshooting Concept 6-1
6-3. Troubleshooting Aids........ 6-1
6-4. Physical Description. 6-1

Section II. OVERALL THEORY 6-8

6-5. Overall Functional Description 6-8
6-6. Logic Theory Presentation........ 6-13
6-7. Circuit Card and Key Signal Lookup Tables........ 6-13

Section III. VOICE COMMUNICATIONS CENTRAL 6-74

6-8. General 6-74
6-9. Net Communication........ 6-74
6-10. Intercom Communications........ 6-78
6-11. Local Comm Communication 6-78
6-12. Net A and B Communications 6-78
6-13. Multiplexing Techniques........ 6-78
6-14. Analog Card Descriptions........ 6-85
6-15. Operational Control Net Analog Functional Description. 6-88
6-16. Command Administration Net Analog Functional Description 6-95
6-17. Maintenance Test Net Analog Functional Description........ 6-95
6-18. Net A and Net B Analog Functional Description........ 6-95
6-19. Net Ring Detector Circuit Functional Description 6-96
6-20. Intercomm Interface Functional Description 6-96
6-21. Local Comm Interface Functional Description 6-96
6-22. Central-to-Station Functional Description 6-121
6-23. Ring Detector Storage Functional Description 6-121

TABLE OF CONTENTS - Continued

Chapter Page

6-24. Operator Audio Ring and Feedback Functional Description 6-121
6-25. Central Input Register Functional Description 6-121
6-26. Net Ring No. 1 and Net Ring No. 2 Functional Description 6-139
6-27. A and B Control Net Function Description 6-139
6-27.1 Net A and B Receive Functional Description 6-139
6-28. Net A and B Operator Storage Functional Description 6-139
6-29. Subnetter Control Functional Description 6-139
6-30. Intercomm Net and Ring Functional Description 6-139
6-31. Intercomm and Local Comm External Ring Functional Description 6-139
6-32. Local Comm Net Storage Functional Description 6-140
6-33. Intercomm and Local Comm Audio Receive Functional Description 6-140
6-34. 10-Station Net Storage Functional Description 6-140
6-35. Net Subscriber Storage Functional Description 6-140
6-36. Operational Control Net Subscriber Storage Functional Description 6-140
6-37. Command Administration Net Subscriber Storage Functional Description 6-140
6-38. Maintenance Test Net Subscriber Storage Functional Description 6-140
6-39. Timing Logic Functional Description 6-175
6-40. Central-to-Station Multiplex Timing Functional Description 6-175
6-41. Front Panel and Fault Isolation Functional Description 6-175

Section IV. VOICE COMMUNICATIONS STATION 6-203

6-42. General 6-203
6-43. Audio Circuits Functional Description 6-203
6-44. Front Panel Control Logic Functional Description 6-203
6-45. Multiplexer Control Functional Description 6-204

Section V. EXTERNAL SUBSCRIBER PATCH AND VCS-TO-VCC INTERFACE 6-219

6-46. VCS-to-VCC Interface 6-219
6-47. External Subscriber Patch Interface 6-219

Section VI. POWER DISTRIBUTION 6-220

6-48. Voice Communications Power Distribution 6-220

Section VII. CABLING AND FRONT PANEL SCHEMATIC DIAGRAMS 6-221

6-49. Cabling Diagram 6-221
6-50. Front Panel Schematics 6-221

Section VIII. GLOSSARY OF TERMS 6-222

6-51. General 6-222

LIST OF ILLUSTRATIONS

Figure	Title	Page
6-1.	Voice Communications Equipment, Major Units and Assemblies	6-3
6-2.	Voice Communications Overall Block Diagram	6-8
6-3.	Voice Corm Station Functional Block Diagram	6-9
6-4.	VCC Functional Block Diagram	6-11
6-5.	VCC System Interface	6-75
6-6.	Net Communication	6-77
6-7.	Intercom Communication	6-79
6-8.	Local Comm Communication	6-80
6-9.	Sampled Multiplexed Audio	6-80
6-10.	Time Division Multiplex Switch	6-81
6-11.	Six Channel TDM Transmit and Receive Switches	6-81
6-12.	Transmit Circuit Multiplexer	6-82
6-13.	Receive Circuit Demultiplexer	6-83
6-14.	VCC Time Division Multiplexing	6-84
6-15.	Audio Time Slots	6-84
6-16.	Net Ring Detector/Operator Card Block	6-85
6-17.	Time Division Switch Card Block	6-86
6-18.	Battery Subnetter Card Block (1/2)	6-87
6-19.	Four-Wire Interface Card (Channel 1)	6-88
6-20.	Two-Wire Line Interface Card Block	6-89
6-21.	Operational Control Net Analog Block Diagram	6-91
6-22.	Operational Control Net Audio Functional Diagram	6-93
6-23.	Command Administration Net Analog Block Diagram	6-97
6-24.	Command Administration Net Audio Functional Diagram	6-99
6-25.	Maintenance Test Net Analog Block Diagram	6-101
6-26.	Maintenance Test Net Audio Functional Diagram	6-103
6-27.	Net A and B Analog Block Diagram	6-105
6-28.	Special Net A Audio Functional Diagram	6-107
6-29.	Special Net B Audio Functional Diagram	6-109
6-30.	Net Ring Detector Circuits Block Diagram	6-111
6-31.	Intercomm Interface Block Diagram	6-113
6-32.	Intercomm Net Audio Functional Diagram	6-115
6-33.	Local Comm Interface Block Diagram	6-117
6-34.	Local Comm Audio Functional Diagram	6-119
6-35.	Central-to-Station Block Diagram	6-123
6-36.	Ring Detector Storage Block Diagram	6-125
6-37.	Operator Audio Ring and Feedback Block Diagram	6-127
6-38.	Central Input Register Block Diagram	6-129
6-39.	VCS Control Word Format	6-133
6-40.	VCS Control Data Input Timing	6-135
6-41.	Input Address Process Timing	6-137
6-42.	Net Ring No. 1 and Net Ring No. 2 Block Diagram	6-141
6-43.	A and B Control Net Block Diagram	6-143
6-44.	Net A and B Receive Block Diagram	6-145
6-45.	Net A and B Operator Storage Block Diagram	6-147
6-46.	Subnetter Control Block Diagram	6-149
6-47.	Intercomm Net and Ring Block Diagram	6-153
6-48.	Intercomm and Local Comm External Ring Block Diagram	6-155

LIST OF ILLUSTRATIONS - Continued

Figure Title Page

6-49. Local Comm Net Storage Block Diagram 6-157
6-50. Local Comm Net Storage Timing Diagram 6-159
6-51. Intercomm and Local Comm Audio Receive Block Diagram 6-161
6-52. 10-Station Net Storage Block Diagram 6-163
6-53. Net Subscriber Storage Block Diagram........ 6-165
6-54. Operational Control Net Subscriber Storage Block Diagram 6-169
6-55. Command Administration Net Subscriber Storage Block Diagram 6-171
6-56. Maintenance Test Net Subscriber Storage Block Diagram 6-173
6-57. Timing Logic Block Diagram........ 6-177
6-58. 1600 Hz Generation Timing Diagram 6-181
6-59. Audio Time Slot Generation Timing Diagram 6-183
6-60. Transmit Sync Timing Generation Timing Diagram. 6-185
6-61. Operator Time Control Generation Timing Diagram 6-187
6-62. Local Comm Sync Generation Timing Diagram........ 6-189
6-63. Central-to-Station Multiplex Timing Block Diagram........ 6-191
6-64. VCS Frame Generation Timing Diagram 6-193
6-65. VCS Time Slot Generation Timing Diagram 6-195
6-66. VCS Select Timing Diagram........ 6-197
6-67. Front Panel and Fault Isolation Block Diagram 6-199
6-68. VCS Block Diagram........ 6-205
6-69. VCS Audio Circuits Block Diagram 6-207
6-70. Front Panel Control Logic Block Diagram 6-209
6-71. Switch Encoder Timing Diagram 6-213
6-72. Multiplexer Control1Kck Diagram 6-215
6-73. Multiplexer Control Timing Diagram 6-217
FO-1. Operational Control Net Analog Logic Diagram ....
FO-2. Command Administration Net Analog, Logic Diagram ....
FO-3. Maintenance Test Net Analog, Logic Diagram ....
FO-4. Net A and B Analog, Logic Diagram ....
FO-5. Net Ring Detector Circuits, Logic Diagram........
FO-6. Intercomm Interface, Logic Diagram........
FO-7. Local Comm Interface, Logic Diagram........
FO-8. Central-to-Station, Logic Diagram........
FO-9. Ring Detector Storage, Logic Diagram ....
FO-10. Operator Audio Ring and Feedback, Logic Diagram ....
FO-11. Central Input Register, Logic Diagram ....
FO-12. Net Ring No. 1 and No. 2, Logic Diagram........
FO-13. A and B Control Net, Logic Diagram........
FO-14. Net A and B Receive, Logic Diagram ....
FO-15. Net A and B Operator Storage, Logic Diagram ....
FO-16. Subnetter Control, Logic Diagram........
FO-17. Intercomm Net and Ring, Logic Diagram ....
FO-18. Intercomm and Local Comm External Ring, Logic Diagram........
FO-19. Logic Comm Net Storage, Logic Diagram........
FO-20. Intercomm and Local Comm Audio Receive, Logic Diagram ....
FO-21. 10-Station Net Storage, Logic Diagram ....
FO-22. Net Subscriber Storage Control Circuits, Logic Diagram........

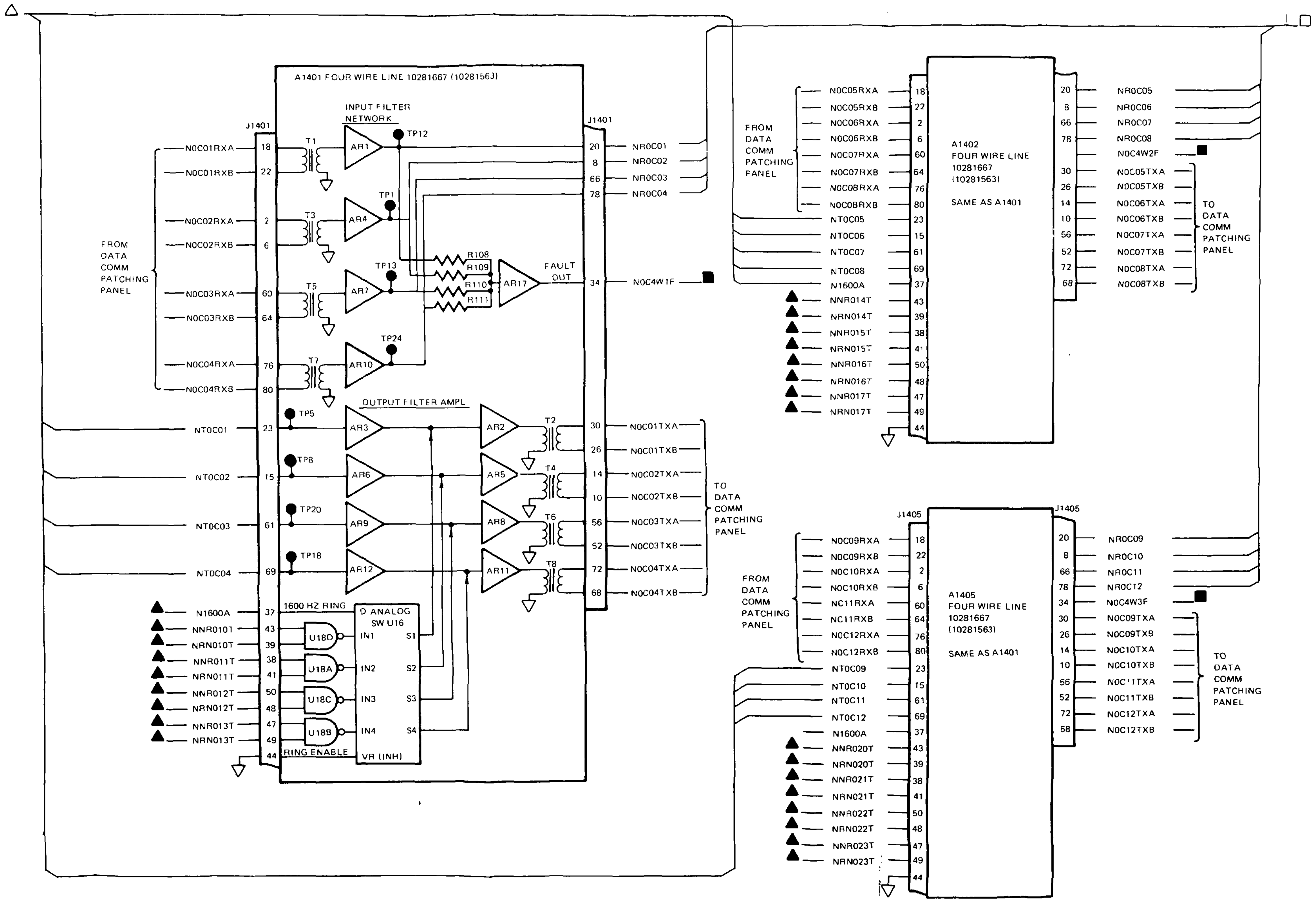
LIST OF ILLUSTRATIONS - Continued

FO-23. Operational Control Net Subscriber Storage, Logic Diagram ....
FO-24. Command Administration Net Subscriber Storage, Logic Diagram ....
FO-25. Maintenance Test Net Subscriber Storage, Logic Diagram ....
FO-26. Voice Comm Central Timing, Logic Diagram ....
FO-27. Central-to-Station Multiplex Timing, Logic Diagram ....
FO-28. VCC Front Panel and Fault Isolation, Logic Diagram ....
FO-29. VCS Audio Circuits, Logic Diagram ....
FO-30. VCS Front Panel Control, Logic Diagram ....
FO-31. VCS Multiplexer Control, Logic Diagram ....
FO-32. VCS-to-VCC Interface Diagram ....
FO-33. External Subscriber Patch Interface Diagram ....
FO-34. Voice Communications Power Distribution Diagram ....
FO-35. VCS Cabling Diagram ....
FO-36. VCC Front Panel Schematic Diagram ....
FO-37. VCS Front Panel, Schematic Diagram..

LIST OF TABLES

Table	Title	Page
6-1.	AN/TSQ-73 Major Equipment Cross-Reference	6-5
6-2.	VCC Card Location Index	6-14
6-3.	VCS Card Location Index	6-22
6-4.	Voice Communications Central Key Signal Lookup	6-23

INPUTS	F/O-SH	OUTPUTS	F/O-SH
NNR010T	6-12-2	NOC4W1F	6-28-4
NNR011T	6-12-2	NOC4W2F	6-28-4
NNR012T	6-12-2	NOC4W3F	6-28-4
NNR013T	6-12-2		
NNR014T	6-12-2		
NNR015T	6-12-2		
NNR016T	6-12-2		
NNR017T	6-12-2		
NNR020T	6-12-2		
NNR021T	6-12-2		
NNR022T	6-12-2		
NNR023T	6-12-2		
NRN010T	6-12-3		
NRN011T	6-12-3		
NRN012T	6-12-3		
NRN013T	6-12-3		
NRN014T	6-12-3		
NRN015T	6-12-3		
NRN016T	6-12-3		
NRN017T	6-12-3		
NRN020T	6-12-3		
NRN021T	6-12-3		
NRN022T	6-12-3		
NRN023T	6-12-3		
N1600A	6-28-2		


A1401 FOUR WIRE LINE 10281667 (10281563)
J1401
INPUT FILTER NETWORK
NOC01RXA
NOC01RXB
NOC02RXA
NOC02RXB
NOC03RXA
NOC03RXB
NOC04RXA
NOC04RXB
FROM DATA COMM PATCHING PANEL
T1
T3
T5
T7
AR1
AR4
AR7
AR10
AR17
TP12
TP1
TP13
TP24
R108
R109
R110
R111
FAULT OUT
NR0C01
NR0C02
NR0C03
NR0C04
NOC4W1F
OUTPUT FILTER AMPL
NT0C01
NT0C02
NT0C03
NT0C04
TP5
TP8
TP20
TP18
AR3
AR6
AR9
AR12
AR2
AR5
AR8
AR11
T2
T4
T6
T8
NOC01TXA
NOC01TXB
NOC02TXA
NOC02TXB
NOC03TXA
NOC03TXB
NOC04TXA
NOC04TXB
TO DATA COMM PATCHING PANEL
N1600A
NNR010T
NRN010T
NNR011T
NRN011T
NNR012T
NRN012T
NNR013T
NRN013T
1600 HZ RING
U18D
U18A
U18C
U18B
RING ENABLE
D ANALOG SW U16
IN1
IN2
IN3
IN4
S1
S2
S3
S4
VR (INH)
A1402 FOUR WIRE LINE 10281667 (10281563) SAME AS A1401
NOC05RXA
NOC05RXB
NOC06RXA
NOC06RXB
NOC07RXA
NOC07RXB
NOC08RXA
NOC08RXB
NT0C05
NT0C06
NT0C07
NT0C08
N1600A
NNR014T
NRN014T
NNR015T
NRN015T
NNR016T
NRN016T
NNR017T
NRN017T
NR0C05
NR0C06
NR0C07
NR0C08
NOC4W2F
NOC05TXA
NOC05TXB
NOC06TXA
NOC06TXB
NOC07TXA
NOC07TXB
NOC08TXA
NOC08TXB
J1405
A1405 FOUR WIRE LINE 10281667 (10281563) SAME AS A1401
NOC09RXA
NOC09RXB
NOC10RXA
NOC10RXB
NC11RXA
NC11RXB
NOC12RXA
NOC12RXB
NT0C09
NT0C10
NT0C11
NT0C12
N1600A
NNR020T
NRN020T
NNR021T
NRN021T
NNR022T
NRN022T
NNR023T
NRN023T
NR0C09
NR0C10
NR0C11
NR0C12
NOC4W3F
NOC09TXA
NOC09TXB
NOC10TXA
NOC10TXB
NOC11TXA
NOC11TXB
NOC12TXA
NOC12TXB

NOTES: UNLESS OTHERWISE SPECIFIED

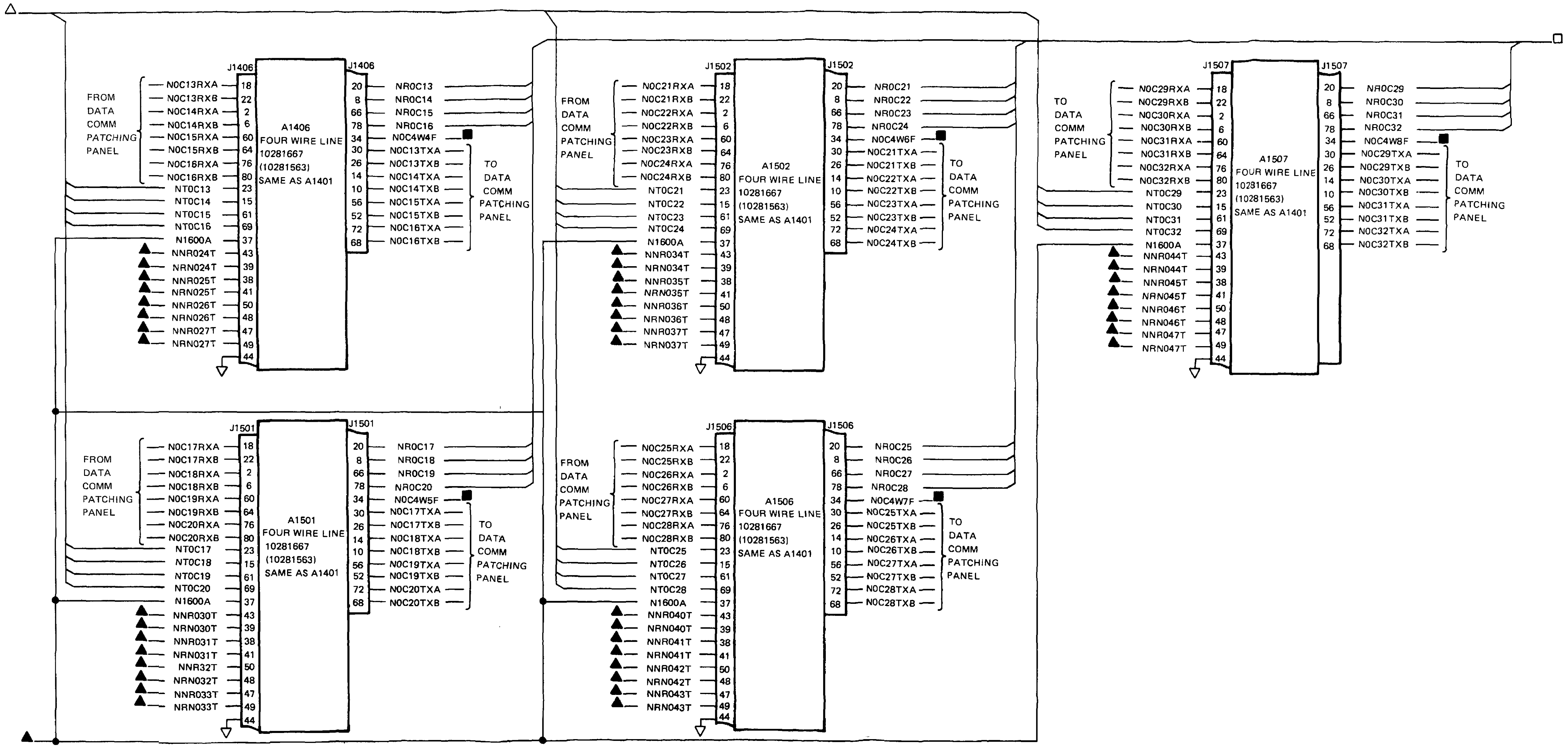
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲	INPUT FROM ANOTHER FIGURE
△	INPUT FROM SAME FIGURE
■	OUTPUT TO ANOTHER FIGURE
◪	OUTPUT TO BOTH SAME AND ANOTHER FIGURE
□	OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

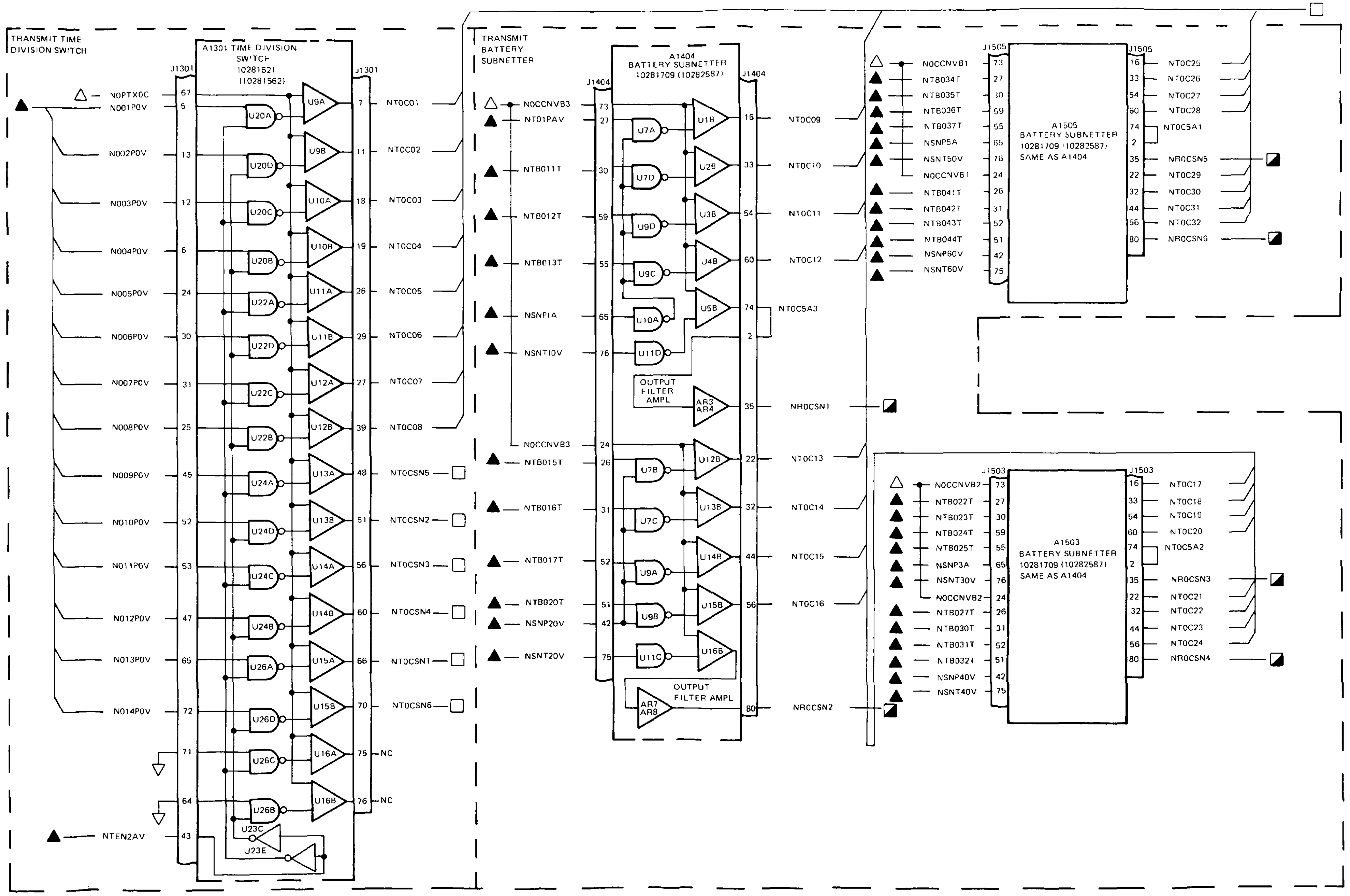
FO-1. Operational Control Net Analog, Logic Diagram (Sheet 1 of 4)

INPUTS	F/O-SH	INPUTS	F/O-SH
NNR024T	6-12-2	NRN030T	6-12-3
NNR025T	6-12-2	NRN031T	6-12-3
NNR026T	6-12-2	NRN032T	6-12-3
NNR027T	6-12-2	NRN033T	6-12-3
NNR030T	6-12-2	NRN034T	6-12-3
NNR031T	6-12-2	NRN035T	6-12-3
NNR032T	6-12-2	NRN036T	6-12-3
NNR033T	6-12-2	NRN037T	6-12-3
NNR034T	6-12-2	NRN040T	6-12-3
NNR035T	6-12-2	NRN041T	6-12-3
NNR036T	6-12-2	NRN042T	6-12-3
NNR037T	6-12-2	NRN043T	6-12-3
NNR040T	6-12-2	NRN044T	6-12-3
NNR041T	6-12-2	NRN045T	6-12-3
NNR042T	6-12-2	NRN046T	6-12-3
NNR043T	6-12-2	NRN047T	6-12-3
NNR044T	6-12-2	N1600A	6-28-2
NNR045T	6-12-2		
NNR046T	6-12-2	OUTPUTS	F/O-SH
NNR047T	6-12-2	NOC4W4F	6-28-4
NRN024T	6-12-3	NOC4W5F	6-28-4
NRN025T	6-12-3	NOC4W6F	6-28-4
NRN026T	6-12-3	NOC4W7F	6-28-4
NRN027T	6-12-3	NOC4W8F	6-28-4


J1406
FROM DATA COMM PATCHING PANEL
NOC13RXA 18
NOC13RXB 22
NOC14RXA 2
NOC14RXB 6
NOC15RXA 60
NOC15RXB 64
NOC16RXA 76
NOC16RXB 80
NTOC13 23
NTOC14 15
NTOC15 61
NTOC16 69
N1600A 37
NNR024T 43
NRN024T 39
NNR025T 38
NRN025T 41
NNR026T 50
NRN026T 48
NNR027T 47
NRN027T 49
44
A1406
FOUR WIRE LINE
10281667
(10281563)
SAME AS A1401
J1406
20 NROC13
8 NROC14
66 NROC15
78 NROC16
34 NOC4W4F
30 NOC13TXA
26 NOC13TXB
14 NOC14TXA
10 NOC14TXB
56 NOC15TXA
52 NOC15TXB
72 NOC16TXA
68 NOC16TXB
TO DATA COMM PATCHING PANEL
J1502
FROM DATA COMM PATCHING PANEL
NOC21RXA 18
NOC21RXB 22
NOC22RXA 2
NOC22RXB 6
NOC23RXA 60
NOC23RXB 64
NOC24RXA 76
NOC24RXB 80
NTOC21 23
NTOC22 15
NTOC23 61
NTOC24 69
N1600A 37
NNR034T 43
NRN034T 39
NNR035T 38
NRN035T 41
NNR036T 50
NRN036T 48
NNR037T 47
NRN037T 49
44
A1502
FOUR WIRE LINE
10281667
(10281563)
SAME AS A1401
J1502
20 NROC21
8 NROC22
66 NROC23
78 NROC24
34 NOC4W6F
30 NOC21TXA
26 NOC21TXB
14 NOC22TXA
10 NOC22TXB
56 NOC23TXA
52 NOC23TXB
72 NOC24TXA
68 NOC24TXB
TO DATA COMM PATCHING PANEL
J1507
TO DATA COMM PATCHING PANEL
NOC29RXA 18
NOC29RXB 22
NOC30RXA 2
NOC30RXB 6
NOC31RXA 60
NOC31RXB 64
NOC32RXA 76
NOC32RXB 80
NTOC29 23
NTOC30 15
NTOC31 61
NTOC32 69
N1600A 37
NNR044T 43
NRN044T 39
NNR045T 38
NRN045T 41
NNR046T 50
NRN046T 48
NNR047T 47
NRN047T 49
44
A1507
FOUR WIRE LINE
10281667
(10281563)
SAME AS A1401
J1507
20 NROC29
8 NROC30
66 NROC31
78 NROC32
34 NOC4W8F
30 NOC29TXA
26 NOC29TXB
14 NOC30TXA
10 NOC30TXB
56 NOC31TXA
52 NOC31TXB
72 NOC32TXA
68 NOC32TXB
TO DATA COMM PATCHING PANEL
J1501
FROM DATA COMM PATCHING PANEL
NOC17RXA 18
NOC17RXB 22
NOC18RXA 2
NOC18RXB 6
NOC19RXA 60
NOC19RXB 64
NOC20RXA 76
NOC20RXB 80
NTOC17 23
NTOC18 15
NTOC19 61
NTOC20 69
N1600A 37
NNR030T 43
NRN030T 39
NNR031T 38
NRN031T 41
NNR32T 50
NRN032T 48
NNR033T 47
NRN033T 49
44
A1501
FOUR WIRE LINE
10281667
(10281563)
SAME AS A1401
J1501
20 NROC17
8 NROC18
66 NROC19
78 NROC20
34 NOC4W5F
30 NOC17TXA
26 NOC17TXB
14 NOC18TXA
10 NOC18TXB
56 NOC19TXA
52 NOC19TXB
72 NOC20TXA
68 NOC20TXB
TO DATA COMM PATCHING PANEL
J1506
FROM DATA COMM PATCHING PANEL
NOC25RXA 18
NOC25RXB 22
NOC26RXA 2
NOC26RXB 6
NOC27RXA 60
NOC27RXB 64
NOC28RXA 76
NOC28RXB 80
NTOC25 23
NTOC26 15
NTOC27 61
NTOC28 69
N1600A 37
NNR040T 43
NRN040T 39
NNR041T 38
NRN041T 41
NNR042T 50
NRN042T 48
NNR043T 47
NRN043T 49
44
A1506
FOUR WIRE LINE
10281667
(10281563)
SAME AS A1401
J1506
20 NROC25
8 NROC26
66 NROC27
78 NROC28
34 NOC4W7F
30 NOC25TXA
26 NOC25TXB
14 NOC26TXA
10 NOC26TXB
56 NOC27TXA
52 NOC27TXB
72 NOC28TXA
68 NOC28TXB
TO DATA COMM PATCHING PANEL

FO-1. Operational Control Net Analog, Logic Diagram (Sheet 2 of 4)

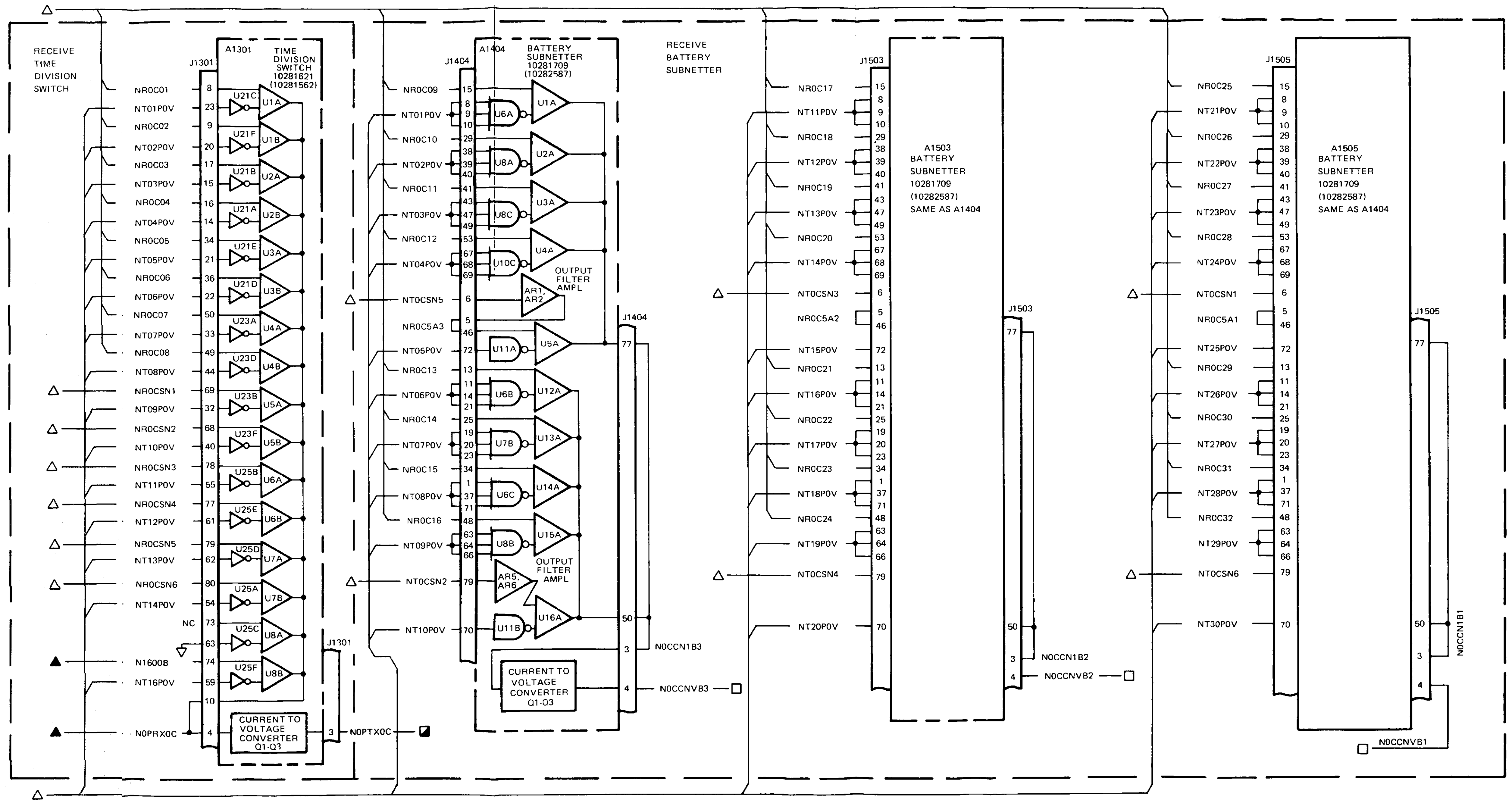
INPUTS	F/O - SH	INPUTS	F/O - SH	OUTPUTS	F/O - SH
NSNP1A	6-16-2	NTB027T	6-26-2	NROCSN1	6-28-4
NSNP3A	6-16-2	NTB030T	6-26-2	NROCSN2	6-28-4
NSNP5A	6-16-2	NTB031T	6-26-2	NROCSN3	6-28-4
NSNP20V	6-16-2	NTB032T	6-26-2	NROCSN4	6-28-4
NSNP40V	6-16-2	NTB034T	6-26-2	NROCSN5	6-28-4
NSNP60V	6-16-2	NTB035T	6-26-2	NROCSN6	6-28-4
NSNT10V	6-16-1	NTB036T	6-26-2		
NSNT20V	6-16-1	NTB037T	6-26-2		
NSNT30V	6-16-1	NTB041T	6-26-2		
NSNT40V	6-16-1	NTB042T	6-26-2		
NSNT50V	6-16-1	NTB043T	6-26-2		
NSNT60V	6-16-1	NTB044T	6-26-2		
NTEN2AV	6-26-1	NT01PAV	6-26-2		
NTB011T	6-26-2	N001POV	6-23-2		
NTB012T	6-26-2	N002POV	6-23-2		
NTB013T	6-26-2	N003POV	6-23-2		
NTB015T	6-26-2	N004POV	6-23-2		
NTB016T	6-26-2	N005POV	6-23-2		
NTB017T	6-26-2	N006POV	6-23-2		
NTB020T	6-26-2	N007POV	6-23-2		
NTB022T	6-26-2	N008POV	6-23-2		
NTB023T	6-26-2	N009POV	6-23-2		
NTB024T	6-26-2	N010POV	6-23-2		
NTB025T	6-26-2	N011POV	6-23-2		
		N012POV	6-23-2		
		N013POV	6-23-2		
		N014POV	6-23-2		



TRANSMIT TIME DIVISION SWITCH
A1301 TIME DIVISION SWITCH 10281621 (10281562)
J1301
N0PTX0C
N001POV
N002POV
N003POV
N004POV
N005POV
N006POV
N007POV
N008POV
N009POV
N010POV
N011POV
N012POV
N013POV
N014POV
NTEN2AV
NTOC01
NTOC02
NTOC03
NTOC04
NTOC05
NTOC06
NTOC07
NTOC08
NTOCSN5
NTOCSN2
NTOCSN3
NTOCSN4
NTOCSN1
NTOCSN6
NC
NC
TRANSMIT BATTERY SUBNETTER
A1404 BATTERY SUBNETTER 10281709 (10282587)
J1404
N0CCNVB3
NT01PAV
NTB011T
NTB012T
NTB013T
NSNP1A
NSNT10V
NTB015T
NTB016T
NTB017T
NTB020T
NSNP20V
NSNT20V
OUTPUT FILTER AMPL
AR3 AR4
AR7 AR8
NTOC09
NTOC10
NTOC11
NTOC12
NTOC5A3
NROCSN1
NTOC13
NTOC14
NTOC15
NTOC16
NROCSN2
A1505 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1404
J1505
N0CCNVB1
NTB034T
NTB035T
NTB036T
NTB037T
NSNP5A
NSNT50V
NTB041T
NTB042T
NTB043T
NTB044T
NSNP60V
NSNT60V
NTOC25
NTOC26
NTOC27
NTOC28
NTOC5A1
NROCSN5
NTOC29
NTOC30
NTOC31
NTOC32
NROCSN6
A1503 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1404
J1503
N0CCNVB2
NTB022T
NTB023T
NTB024T
NTB025T
NSNP3A
NSNT30V
NTB027T
NTB030T
NTB031T
NTB032T
NSNP40V
NSNT40V
NTOC17
NTOC18
NTOC19
NTOC20
NTOC5A2
NROCSN3
NTOC21
NTOC22
NTOC23
NTOC24
NROCSN4

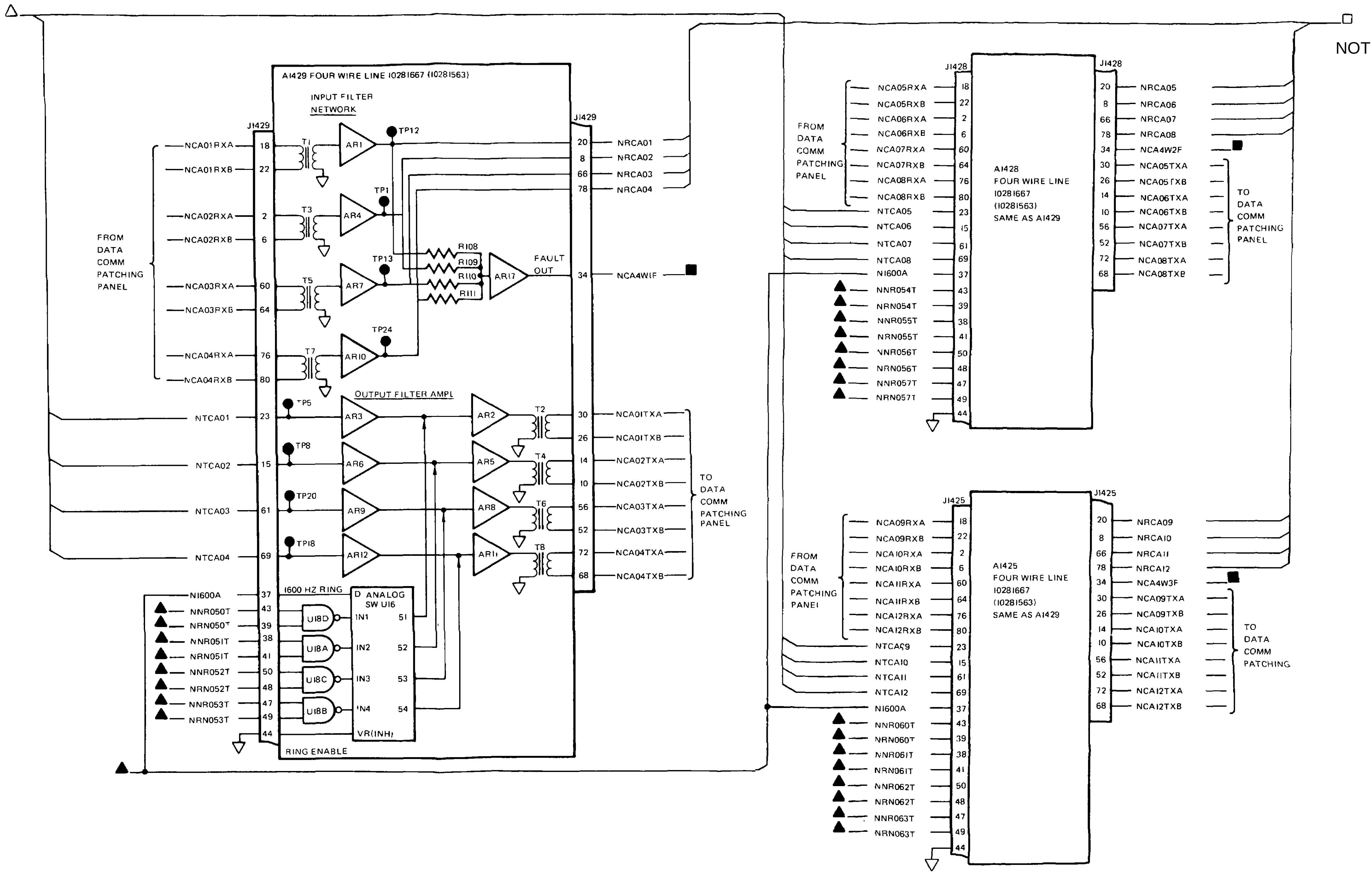
FO-1. Operational Control Net Analog, Logic Diagram (Sheet 3 of 4)

INPUTS	F/O-SH	INPUTS	F/O-SH
NT01 POV	6-26-2	NT26POV	6-26-2
NT02POV	6-26-2	NT27POV	6-26-2
NT03POV	6-26-2	NT28POV	6-26-2
NT04POV	6-26-2	NT29POV	6-26-2
NT05POV	6-26-2	NT30POV	6-26-2
NT06POV	6-26-2	NOPRXOC	6-5-0
NT07POV	6-26-2	N1600B	6-28-2
NT08POV	6-26-2		
NT09POV	6-26-2	OUTPUTS	F/O-SH
NT10POV	6-26-2	NOPTXOC	6-5-0
NT11POV	6-26 -2		
NT12POV	6-26-2		
NT13POV	6-26-2		
NT14POV	6-26-2		
NT15POV	6-26-2		
NT16POV	6-26-2		
NT17POV	6-26-2		
NT18POV	6-26-2		
NT19POV	6-26-2		
NT20POV	6-26-2		
NT21POV	6-26-2		
NT22POV	6-26-2		
NT23POV	6-26-2		
NT24POV	6-26-2		
NT25POV	6-26-2		


RECEIVE TIME DIVISION SWITCH
J1301
A1301
TIME DIVISION SWITCH 10281621 (10281562)
CURRENT TO VOLTAGE CONVERTER Q1-Q3
NOPRXOC
NOPTXOC
N1600B
J1404
A1404
BATTERY SUBNETTER 10281709 (10282587)
RECEIVE BATTERY SUBNETTER
OUTPUT FILTER AMPL
CURRENT TO VOLTAGE CONVERTER Q1-Q3
NOCCN1B3
NOCCNVB3
J1503
A1503 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1404
NOCCN1B2
NOCCNVB2
J1505
A1505 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1404
NOCCN1B1
NOCCNVB1

FO-1. Operational Control Net Analog, Logic Diagram (Sheet 4 of 4)

INPUTS	F/O-SH	INPUTS	F/O-SH	OUTPUTS	F/O-SH
NNR050T	6-12-2	NTCA01	6-4-1	NCA4W1F	6-28-4
NNR051T	6-12-2	NTCA02	6-4-1	NCA4W2F	6-28-4
NNR052T	6-12-2	NTCA03	6-4-1	NCA4W3F	6-28-4
NNR053T	6-12-2	NTCA04	6-4-1	NRCA01	6-4-2
NNR054T	6-12-2	NTCA05	6-4-1	NRCA02	6-4-2
NNR055T	6-12-2	NTCA06	6-4-1	NRCA03	6-4-2
NNR056T	6-12-2	NTCA07	6-4-1	NRCA04	6-4-2
NNR057T	6-12-2	NTCA08	6-4-1	NRCA05	6-4-2
NNR060T	6-12-2	NTCA09	6-4-1	NRCA06	6-4-2
NNR061T	6-12-2	NTCA10	6-4-1	NRCA07	6-4-2
NNR062T	6-12-2	NTCA11	6-4-1	NRCA08	6-4-2
NNR063T	6-12-2	NTCA12	6-4-1	NRCA09	6-4-2
NRN050T	6-12-3	N1600A	6-28-2	NRCA10	6-4-2
NRN051T	6-12-3			NRCA11	6-4-2
NRN052T	6-12-3			NRCA12	6-4-2
NRN053T	6-12-3				
NRN054T	6-12-3				
NRN055T	6-12-3				
NRN056T	6-12-3				
NRN057T	6-12-3				
NRN060T	6-12-3				
NRN061T	6-12-3				
NRN062T	6-12-3				
NRN063T	6-12-3				


A1429 FOUR WIRE LINE 10281667 (10281563)
INPUT FILTER NETWORK
J1429
FROM DATA COMM PATCHING PANEL
NCA01RXA
NCA01RXB
NCA02RXA
NCA02RXB
NCA03RXA
NCA03RXB
NCA04RXA
NCA04RXB
T1
T3
T5
T7
AR1
AR4
AR7
AR10
TP12
TP1
TP13
TP24
R108
R109
R110
R111
AR17
FAULT OUT
NRCA01
NRCA02
NRCA03
NRCA04
NCA4W1F
OUTPUT FILTER AMPL
TP5
TP8
TP20
TP18
NTCA01
NTCA02
NTCA03
NTCA04
AR3
AR6
AR9
AR12
AR2
AR5
AR8
AR11
T2
T4
T6
T8
NCA01TXA
NCA01TXB
NCA02TXA
NCA02TXB
NCA03TXA
NCA03TXB
NCA04TXA
NCA04TXB
TO DATA COMM PATCHING PANEL
N1600A
NNR050T
NRN050T
NNR051T
NRN051T
NNR052T
NRN052T
NNR053T
NRN053T
1600 HZ RING
U18D
U18A
U18C
U18B
D ANALOG SW U16
IN1
IN2
IN3
IN4
VR(INH)
RING ENABLE
J1428
A1428 FOUR WIRE LINE 10281667 (10281563) SAME AS A1429
NCA05RXA
NCA05RXB
NCA06RXA
NCA06RXB
NCA07RXA
NCA07RXB
NCA08RXA
NCA08RXB
NTCA05
NTCA06
NTCA07
NTCA08
N1600A
NNR054T
NRN054T
NNR055T
NRN055T
NNR056T
NRN056T
NNR057T
NRN057T
NRCA05
NRCA06
NRCA07
NRCA08
NCA4W2F
NCA05TXA
NCA05TXB
NCA06TXA
NCA06TXB
NCA07TXA
NCA07TXB
NCA08TXA
NCA08TXB
J1425
A1425 FOUR WIRE LINE 10281667 (10281563) SAME AS A1429
NCA09RXA
NCA09RXB
NCA10RXA
NCA10RXB
NCA11RXA
NCA11RXB
NCA12RXA
NCA12RXB
NTCA09
NTCA10
NTCA11
NTCA12
N1600A
NNR060T
NRN060T
NNR061T
NRN061T
NNR062T
NRN062T
NNR063T
NRN063T
NRCA09
NRCA10
NRCA11
NRCA12
NCA4W3F
NCA09TXA
NCA09TXB
NCA10TXA
NCA10TXB
NCA11TXA
NCA11TXB
NCA12TXA
NCA12TXB

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲ INPUT FROM ANOTHER FIGURE

△ INPUT FROM SAME FIGURE

■ OUTPUT TO ANOTHER FIGURE

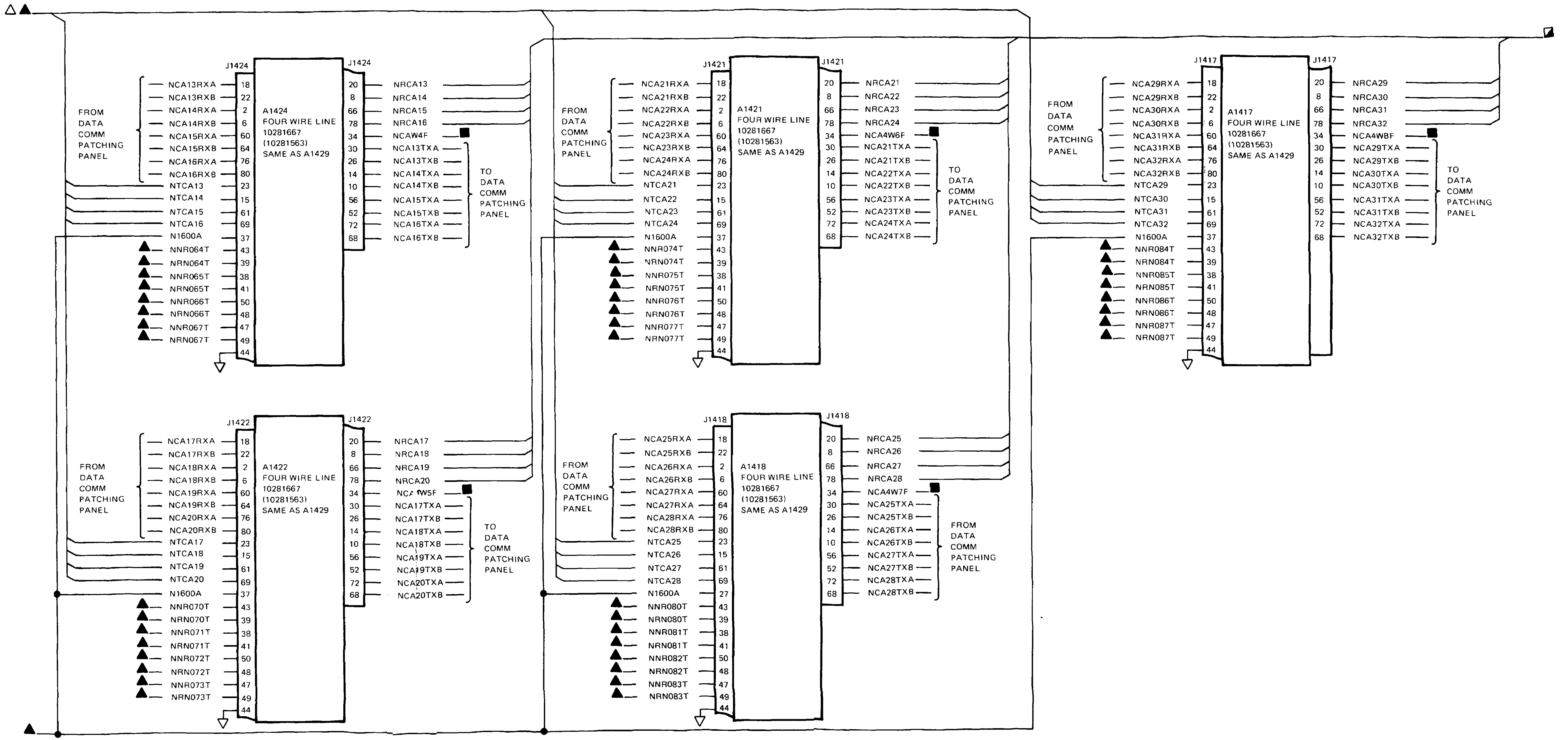
◩ OUTPUT TO BOTH SAME AND ANOTHER FIGURE

☐ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

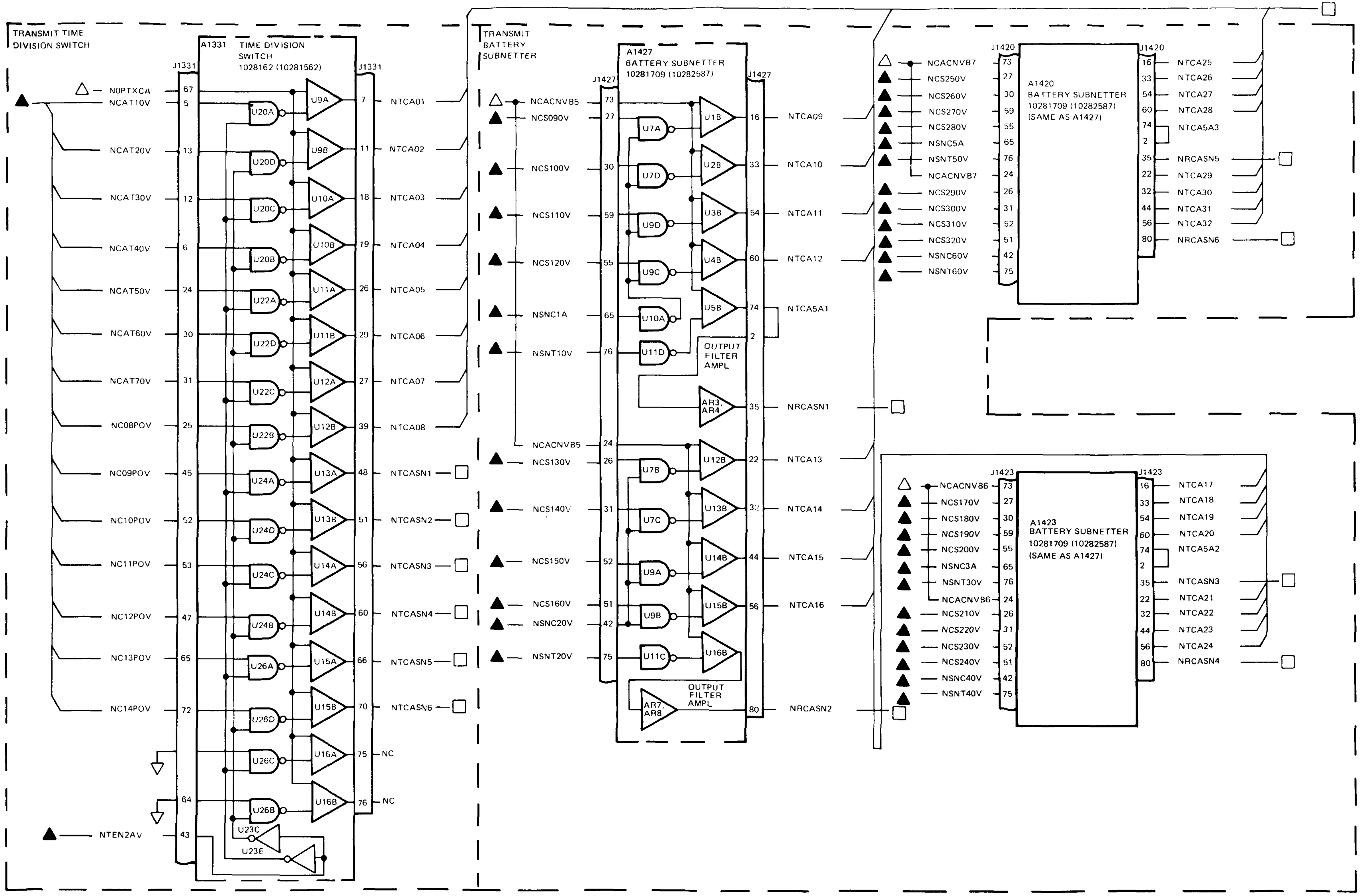
FO-2. Command Administration Net Analog, Logic Diagram (Sheet 1 of 4).

INPUTS	F/O-SH	INPUTS	F/O-SH	OUTPUTS	F/O-SH
NTCA13	6-4-1	NNR070T	6-12-2	NRCA14	6-4-2
NTCA14	6-4-1	NNR071T	6-12-2	NRCA15	6-4-2
NTCA15	6-4-1	NNR072T	6-12-2	NRCA16	6-4-2
NTCA16	6-4-1	NNR073T	6-12-2	NRCA17	6-4-2
NTCA17	6-4-1	NNR074T	6-12-2	NRCA18	6-4-2
NTCA18	6-4-1	NNR075T	6-12-2	NRCA19	6-4-2
NTCA19	6-4-1	NNR076T	6-12-2	NRCA20	6-4-2
NTCA20	6-4-1	NNR077T	6-12-2	NRCA21	6-4-2
NTCA21	6-4-1	NNR080T	6-12-2	NRCA22	6-4-2
NTCA22	6-4-1	NNR081T	6-12-2	NRCA23	6-4-2
NTCA23	6-4-1	NNR082T	6-12-2	NRCA24	6-4-2
NTCA24	6-4-1	NNR083T	6-12-2	NRCA25	6-4-2
NTCA25	6-4-1	NNR084T	6-12-2	NRCA26	6-4-2
NTCA26	6-4-1	NNR085T	6-12-2	NRCA27	6-4-2
NTCA27	6-4-1	NNR086T	6-12-2	NRCA28	6-4-2
NTCA28	6-4-1	NNR087T	6-12-2	NRCA29	6-4-2
NTCA29	6-4-1			NRCA30	6-4-2
NTCA30	6-4-1	OUTPUTS	F/O-SH	NRCA31	6-4-2
NTCA31	6-4-1	NCA4W4F	6-28-4	NRCA32	6-4-2
NTCA32	6-4-1	NCA4W5F	6-28-4		
NNR064T	6-12-2	NCA4W6F	6-28-4		
NNR065T	6-12-2	NCA4W7F	6-28-4		
NNR066T	6-12-2	NCA4W8F	6-28-4		
NNR067T	6-12-2	NRCA13	6-4-2		


J1424
J1424
FROM DATA COMM PATCHING PANEL
NCA13RXA 18
NCA13RXB 22
NCA14RXA 2
NCA14RXB 6
NCA15RXA 60
NCA15RXB 64
NCA16RXA 76
NCA16RXB 80
NTCA13 23
NTCA14 15
NTCA15 61
NTCA16 69
N1600A 37
NNR064T 43
NRN064T 39
NNR065T 38
NRN065T 41
NNR066T 50
NRN066T 48
NNR067T 47
NRN067T 49
44
A1424 FOUR WIRE LINE 10281667 (10281563) SAME AS A1429
20 NRCA13
8 NRCA14
66 NRCA15
78 NRCA16
34 NCAW4F
30 NCA13TXA
26 NCA13TXB
14 NCA14TXA
10 NCA14TXB
56 NCA15TXA
52 NCA15TXB
72 NCA16TXA
68 NCA16TXB
TO DATA COMM PATCHING PANEL
J1422
J1422
FROM DATA COMM PATCHING PANEL
NCA17RXA 18
NCA17RXB 22
NCA18RXA 2
NCA18RXB 6
NCA19RXA 60
NCA19RXB 64
NCA20RXA 76
NCA20RXB 80
NTCA17 23
NTCA18 15
NTCA19 61
NTCA20 69
N1600A 37
NNR070T 43
NRN070T 39
NNR071T 38
NRN071T 41
NNR072T 50
NRN072T 48
NNR073T 47
NRN073T 49
44
A1422 FOUR WIRE LINE 10281667 (10281563) SAME AS A1429
20 NRCA17
8 NRCA18
66 NRCA19
78 NRCA20
34 NCA4W5F
30 NCA17TXA
26 NCA17TXB
14 NCA18TXA
10 NCA18TXB
56 NCA19TXA
52 NCA19TXB
72 NCA20TXA
68 NCA20TXB
TO DATA COMM PATCHING PANEL
J1421
J1421
FROM DATA COMM PATCHING PANEL
NCA21RXA 18
NCA21RXB 22
NCA22RXA 2
NCA22RXB 6
NCA23RXA 60
NCA23RXB 64
NCA24RXA 76
NCA24RXB 80
NTCA21 23
NTCA22 15
NTCA23 61
NTCA24 69
N1600A 37
NNR074T 43
NRN074T 39
NNR075T 38
NRN075T 41
NNR076T 50
NRN076T 48
NNR077T 47
NRN077T 49
44
A1421 FOUR WIRE LINE 10281667 (10281563) SAME AS A1429
20 NRCA21
8 NRCA22
66 NRCA23
78 NRCA24
34 NCA4W6F
30 NCA21TXA
26 NCA21TXB
14 NCA22TXA
10 NCA22TXB
56 NCA23TXA
52 NCA23TXB
72 NCA24TXA
68 NCA24TXB
TO DATA COMM PATCHING PANEL
J1418
J1418
FROM DATA COMM PATCHING PANEL
NCA25RXA 18
NCA25RXB 22
NCA26RXA 2
NCA26RXB 6
NCA27RXA 60
NCA27RXA 64
NCA28RXA 76
NCA28RXB 80
NTCA25 23
NTCA26 15
NTCA27 61
NTCA28 69
N1600A 27
NNR080T 43
NRN080T 39
NNR081T 38
NRN081T 41
NNR082T 50
NRN082T 48
NNR083T 47
NRN083T 49
44
A1418 FOUR WIRE LINE 10281667 (10281563) SAME AS A1429
20 NRCA25
8 NRCA26
66 NRCA27
78 NRCA28
34 NCA4W7F
30 NCA25TXA
26 NCA25TXB
14 NCA26TXA
10 NCA26TXB
56 NCA27TXA
52 NCA27TXB
72 NCA28TXA
68 NCA28TXB
FROM DATA COMM PATCHING PANEL
J1417
J1417
FROM DATA COMM PATCHING PANEL
NCA29RXA 18
NCA29RXB 22
NCA30RXA 2
NCA30RXB 6
NCA31RXA 60
NCA31RXB 64
NCA32RXA 76
NCA32RXB 80
NTCA29 23
NTCA30 15
NTCA31 61
NTCA32 69
N1600A 37
NNR084T 43
NRN084T 39
NNR085T 38
NRN085T 41
NNR086T 50
NRN086T 48
NNR087T 47
NRN087T 49
44
A1417 FOUR WIRE LINE 10281667 (10281563) SAME AS A1429
20 NRCA29
8 NRCA30
66 NRCA31
78 NRCA32
34 NCA4WBF
30 NCA29TXA
26 NCA29TXB
14 NCA30TXA
10 NCA30TXB
56 NCA31TXA
52 NCA31TXB
72 NCA32TXA
68 NCA32TXB
TO DATA COMM PATCHING PANEL

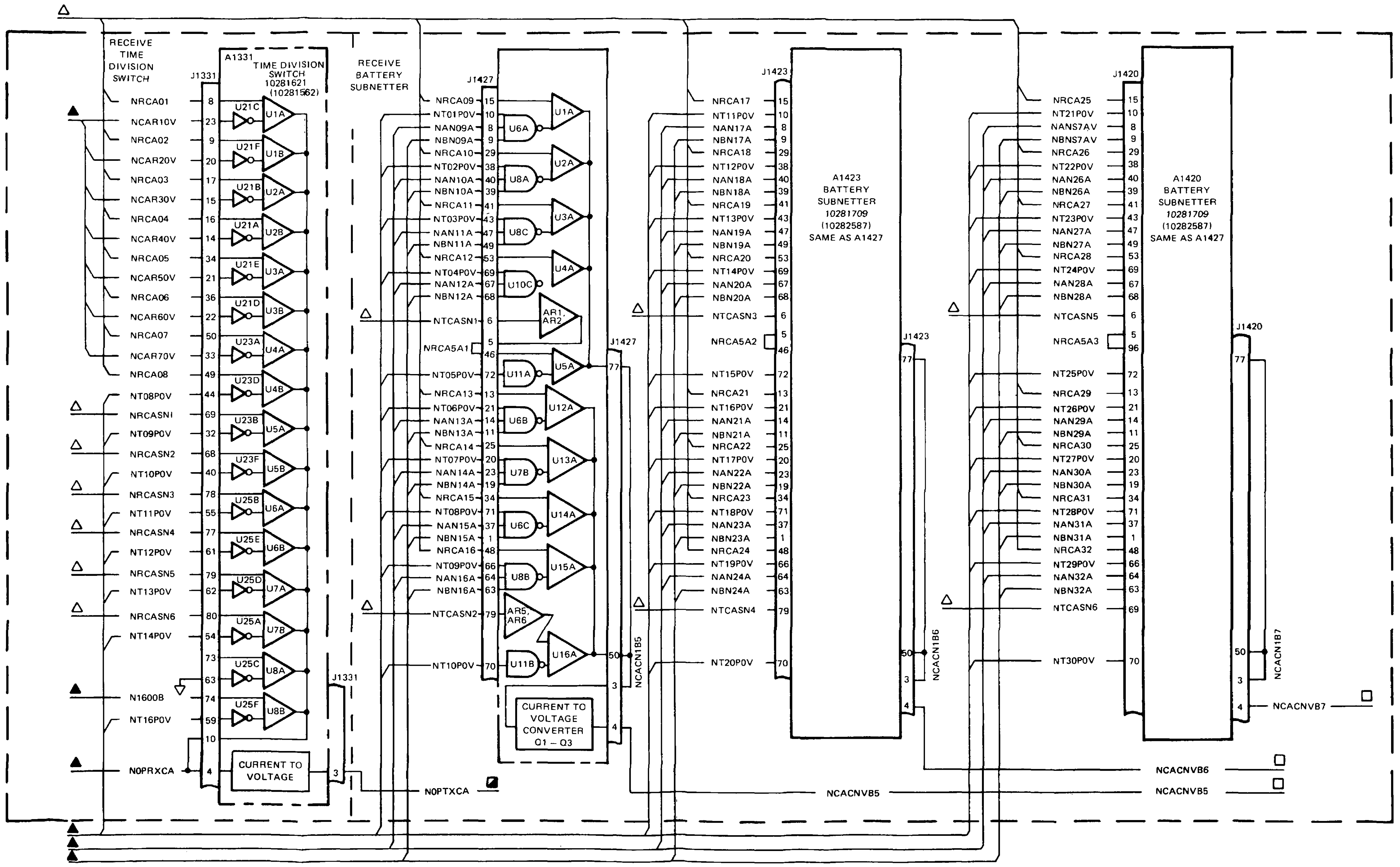
FO-2. Command Administration Net Analog, Logic Diagram (Sheet 2 of 4).

INPUTS	F/O-SH	INPUTS	F/O-SH	OUTPUTS	F/O-SH
NCAT10V	6-14-4	NCS260V	6-16-1	NRCASN1	6-28-4
NCAT20V	6-14-4	NCS270V	6-16-1	NRCASN2	6-28-4
NCAT30V	6-14-4	NCS280V	6-16-1	NRCASN3	6-28-4
NCAT40V	6-14-4	NCS290V	6-16-1	NRCASN4	6-28-4
NCAT50V	6-14-4	NCS300V	6-16-1	NRCASN5	6-28-4
NCAT60V	6-14-4	NCS310V	6-16-1	NRCASN6	6-28-4
NCAT70V	6-14-4	NCS320V	6-16-1		
NCS090V	6-16-1	NC08POV	6-24-2		
NCS100V	6-16-1	NC09POV	6-24-2		
NCS110V	6-16-1	NC10POV	6-24-2		
NCS120V	6-16-1	NC11POV	6-24-2		
NCS130V	6-16-1	NC12POV	6-24-2		
NCS140V	6-16-1	NC13POV	6-24-2		
NCS150V	6-16-1	NC14POV	6-24-2		
NCS160V	6-16-1	NSNC1A	6-16-2		
NCS170V	6-16-1	NSNC3A	6-16-2		
NCS180V	6-16-1	NSNC5A	6-16-2		
NCS190V	6-16-1	NSNC20V	6-16-2		
NSC200V	6-16-1	NSNC40V	6-16-2		
NCS210V	6-16-1	NSNC6OV	6-16-2		
NCS220V	6-16-1	NSNT10V	6-16-1		
NCS230V	6-16-1	NSNT20V	6-16-1		
NCS240V	6-16-1	NSNT30V	6-16-1		
NCS250V	6-16-1	NSNT40V	6-16-1		
NSNT50V	6-16-1				
NSNT60V	6-16-1				
NTEN2AV	6-26-1				


TRANSMIT TIME DIVISION SWITCH
A1331 TIME DIVISION SWITCH 1028162 (10281562)
J1331
NOPTXCA
NCAT10V
NTEN2AV
TRANSMIT BATTERY SUBNETTER
A1427 BATTERY SUBNETTER 10281709 (10282587)
J1427
OUTPUT FILTER AMPL
NRCASN1
NRCASN2
A1420 BATTERY SUBNETTER 10281709 (10282587) (SAME AS A1427)
J1420
A1423 BATTERY SUBNETTER 10281709 (10282587) (SAME AS A1427)
J1423

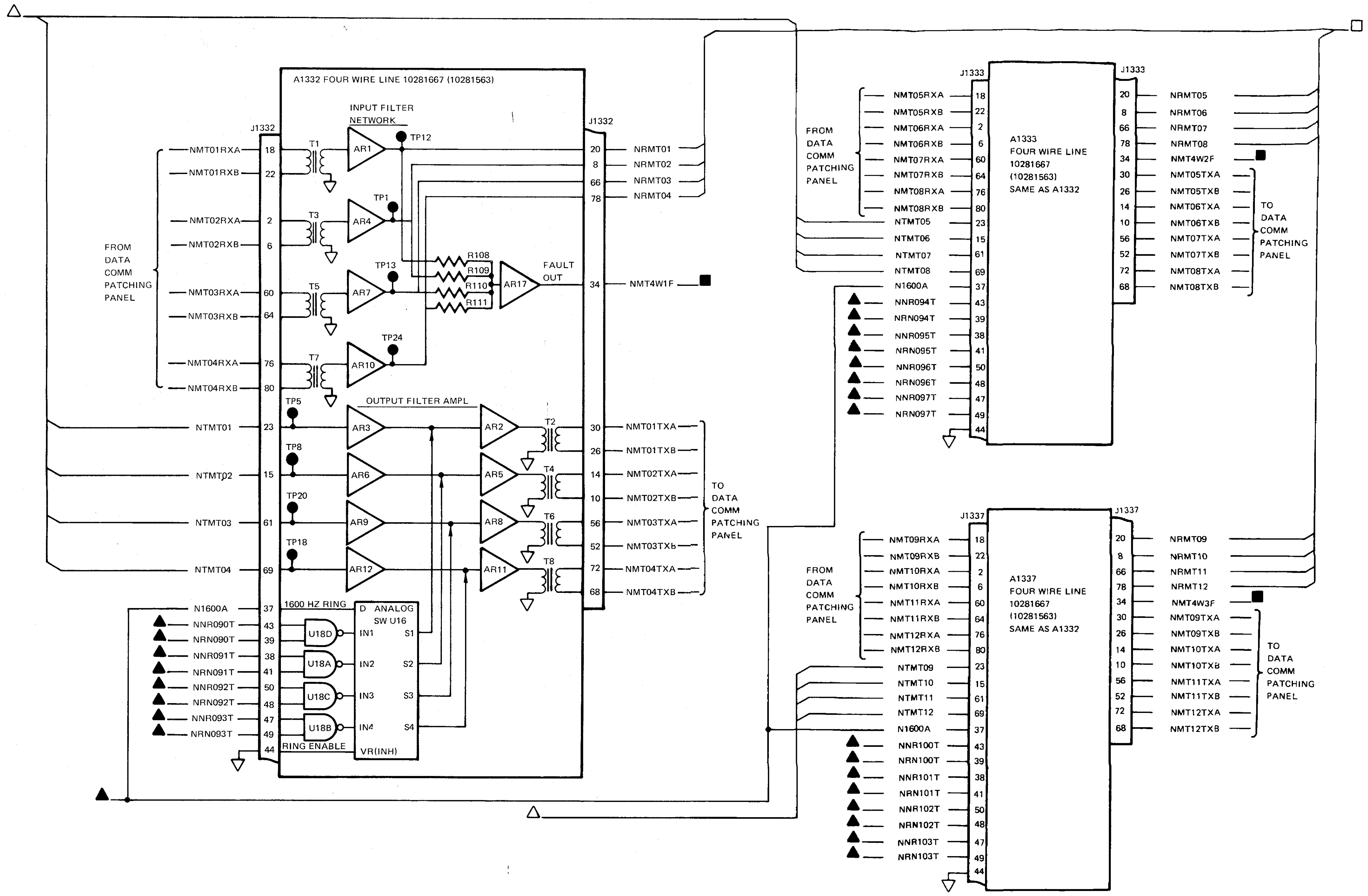
FO-2. Command Administration Net Analog, Logic Diagram (Sheet 3 of 4).

INPUTS	F/O-SH	INPUTS	F/O-SH	INPUTS	F/O-SH	INPUTS	F/O-SH	INPUTS	F/O-SH
NANS7AV	6-14-2	NBN09A	6-14-3	NCAR10V	6-14-4	NT18POV	6-26-2	NT27POV	6-26-2
NANO9A	6-14-2	NBN10A	6-14-3	NCAR20V	6-14-4	NT19POV	6-26-2	NT28POV	6-26-2
NAN10A	6-14-2	NBN11A	6-14-3	NCAR30V	6-14-4	NT20POV	6-26-2	NT29POV	6-26-2
NAN11A	6-14-2	NBN12A	6-14-3	NCAR40V	6-14-4	NT21POV	6-26-2	NT30POV	6-26-2
NAN12A	6-14-2	NBN13A	6-14-3	NCAR50V	6-14-4	NT22POV	6-26-2	NOPRXCA	6-26-2
NAN13A	6-14-2	NBN14A	6-14-3	NCAR60V	6-14-4	NT23POV	6-26-2	N1600B	6-28-2
NAN14A	6-14-2	NBN15A	6-14-3	NCAR70V	6-14-4	NT24POV	6-26-2		
NAN15A	6-14-2	NBN16A	6-14-3	NT01POV	6-26-2	NT25POV	6-26-2	OUTPUTS	F/O-SH
NAN16A	6-14-2	NBN17A	6-14-3	NT02POV	6-26-2	NT26POV	6-26-2	NOPTXCA	6-5-0
NAN17A	6-14-2	NBN18A	6-14-3	NT03POV	6-26-2				
NAN18A	6-14-2	NBN19A	6-14-3	NT04POV	6-26-2				
NAN19A	6-14-2	NBN20A	6-14-3	NT05POV	6-26-2				
NAN20A	6-14-2	NBN21A	6-14-3	NT06POV	6-26-2				
NAN21A	6-14-2	NBN22A	6-14-3	NT07POV	6-26-2				
NAN22A	6-14-2	NBN23A	6-14-3	NT08POV	6-26-2				
NAN23A	6-14-2	NBN24A	6-14-3	NT09POV	6-26-2				
NAN24A	6-14-2	NBN26A	6-14-3	NT10POV	6-26-2				
NAN26A	6-14-2	NBN27A	6-14-3	NT11POV	6-26-2				
NAN27A	6-14-2	NBN28A	6-14-3	NT12POV	6-26-2				
NAN28A	6-14-2	NBN29A	6-14-3	NT13POV	6-26-2				
NAN29A	6-14-2	NBN30A	6-14-3	NT14POV	6-26-2				
NAN30A	6-14-2	NBN31A	6-14-3	NT15POV	6-26-2				
NAN31A	6-14-2	NBN32A	6-14-3	NT16POV	6-26-2				
NAN32A	6-14-2	NBNS7AV	6-14-3	NT17POV	6-26-2				


RECEIVE TIME DIVISION SWITCH
A1331 TIME DIVISION SWITCH 10281621 (10281562)
J1331
CURRENT TO VOLTAGE
NOPRXCA
N1600B
RECEIVE BATTERY SUBNETTER
J1427
CURRENT TO VOLTAGE CONVERTER Q1 – Q3
NOPTXCA
NCACN1B5
A1423 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1427
J1423
NCACN1B6
NCACNVB5
A1420 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1427
J1420
NCACN1B7
NCACNVB6
NCACNVB7

FO-2. Command Administration Net Analog, Logic Diagram (Sheet 4 of 4).

INPUTS	F/O-SH	INPUTS	F/O-SH
NNRO9OT	6-12-2	NRN1O0T	6-12-3
NNRO91T	6-12-2	N1600A	6-28-2
NNR092T	6-12-2	OUTPUTS	F/O-SH
NNR093T	6-12-2	NMT4W1F	6-28-4
NNR094T	6-12-2	NMT4W2F	6-28-4
NNRO95T	6-12-2	NMT4W3F	6-28-4
NNRO96T	6-12-2		
NNRO97T	6-12-2		
NNR100T	6-12-2		
NNR1O1T	6-12-2		
NNR102T	6-12-2		
NNR103T	6-12-2		
NRN09OT	6-12-3		
NRN091T	6-12-3		
NRN092T	6-12-3		
NRN093T	6-12-3		
NRN094T	6-12-3		
NRN095T	6-12-3		
NRN096T	6-12-3		
NRN097T	6-12-3		
NRN100T	6-12-3		
NRN101T	6-12-3		
NRN102T	6-12-3		


A1332 FOUR WIRE LINE 10281667 (10281563)
J1332
INPUT FILTER NETWORK
FROM DATA COMM PATCHING PANEL
NMT01RXA
NMT01RXB
NMT02RXA
NMT02RXB
NMT03RXA
NMT03RXB
NMT04RXA
NMT04RXB
T1
T3
T5
T7
AR1
AR4
AR7
AR10
TP12
TP1
TP13
TP24
R108
R109
R110
R111
AR17
FAULT OUT
NRMT01
NRMT02
NRMT03
NRMT04
NMT4W1F
OUTPUT FILTER AMPL
TP5
TP8
TP20
TP18
NTMT01
NTMT02
NTMT03
NTMT04
AR3
AR6
AR9
AR12
AR2
AR5
AR8
AR11
T2
T4
T6
T8
NMT01TXA
NMT01TXB
NMT02TXA
NMT02TXB
NMT03TXA
NMT03TXB
NMT04TXA
NMT04TXB
TO DATA COMM PATCHING PANEL
N1600A
1600 HZ RING
NNR090T
NRN090T
NNR091T
NRN091T
NNR092T
NRN092T
NNR093T
NRN093T
U18D
U18A
U18C
U18B
RING ENABLE
D ANALOG SW U16
IN1
IN2
IN3
IN4
S1
S2
S3
S4
VR(INH)
J1333
A1333 FOUR WIRE LINE 10281667 (10281563) SAME AS A1332
NMT05RXA
NMT05RXB
NMT06RXA
NMT06RXB
NMT07RXA
NMT07RXB
NMT08RXA
NMT08RXB
NTMT05
NTMT06
NTMT07
NTMT08
NNR094T
NRN094T
NNR095T
NRN095T
NNR096T
NRN096T
NNR097T
NRN097T
NRMT05
NRMT06
NRMT07
NRMT08
NMT4W2F
NMT05TXA
NMT05TXB
NMT06TXA
NMT06TXB
NMT07TXA
NMT07TXB
NMT08TXA
NMT08TXB
J1337
A1337 FOUR WIRE LINE 10281667 (10281563) SAME AS A1332
NMT09RXA
NMT09RXB
NMT10RXA
NMT10RXB
NMT11RXA
NMT11RXB
NMT12RXA
NMT12RXB
NTMT09
NTMT10
NTMT11
NTMT12
NNR100T
NRN100T
NNR101T
NRN101T
NNR102T
NRN102T
NNR103T
NRN103T
NRMT09
NRMT10
NRMT11
NRMT12
NMT4W3F
NMT09TXA
NMT09TXB
NMT10TXA
NMT10TXB
NMT11TXA
NMT11TXB
NMT12TXA
NMT12TXB

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

   ▲ INPUT FROM ANOTHER FIGURE

   △ INPUT FROM SAME FIGURE

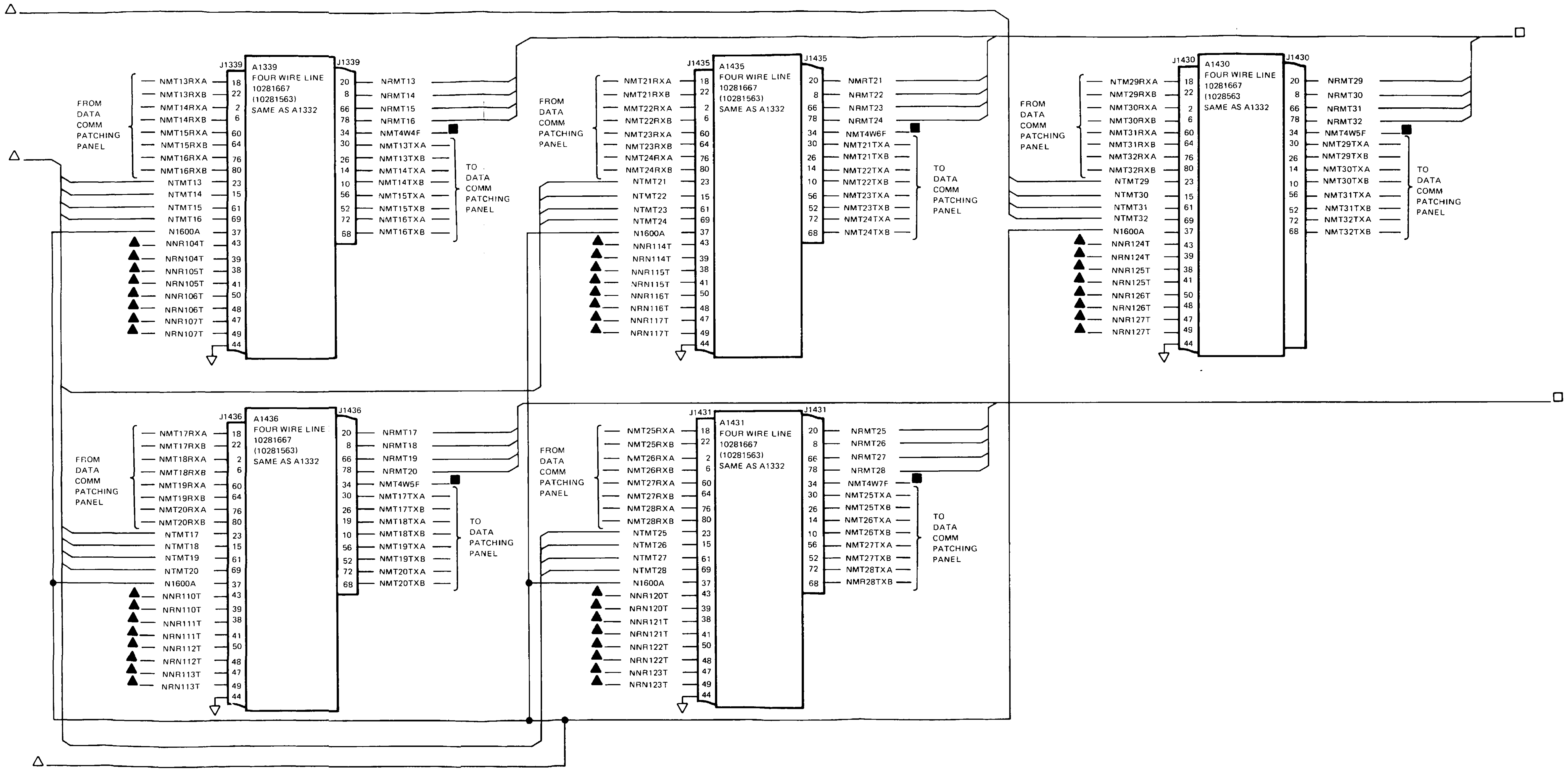
   ■ OUTPUT TO ANOTHER FIGURE

   ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE

   □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

FO-3. Maintenance Test Net Analog, Logic Diagram (Sheet 1 of 4).

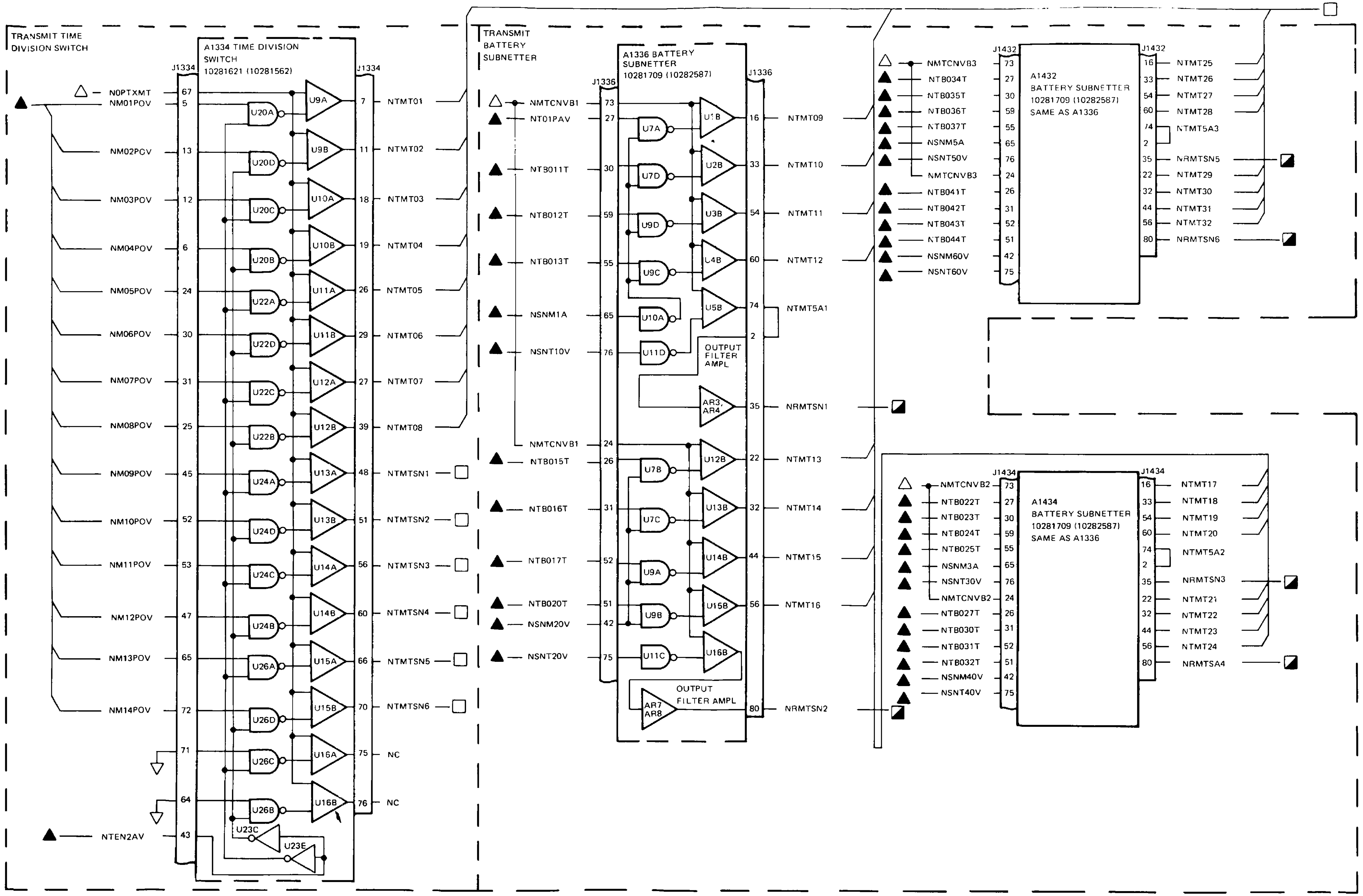
INPUTS	F/O-SH	INPUTS	F/O-SH
NNR104T	6-12-2	NRN110T	6-12-3
NNR105T	6-12-2	NRN111T	6-12-3
NNR106T	6-12-2	NRN112T	6-12-3
NNR107T	6-12-2	NRN113T	6-12-3
NNR110T	6-12-2	NRN114T	6-12-3
NNR111T	6-12-3	NRN115T	612-3
NNR112T	612-2	NRN116T	6-12-3
NNR113T	6-12-2	NRN117T	6-12-3
NNR114T	6-12-2	NRN120T	6-12-3
NNR115T	6-12-2	NRN121T	6-12-3
NNR116T	6-12-2	NRN122T	6-12-3
NNR117T	6-12-2	NRN123T	6-12-3
NNR120T	6-12-2	NRN124T	6-12-3
NNR121T	6-12-2	NRN125T	6-12-3
NNR122T	6-12-2	NRN126T	6-12-3
NNR123T	6-12-2	NRN127T	6-123
NNR124T	6-12-2	N1600A	6-28-2
NNR125T	6-12-2	OUTPUTS	F/O-SH
		NNR126T	6-12-2
NNR127T	6-12-2	NMT4W4F	6-28-4
NRN104T	6-12-3	NMT4W5F	6-284
NRN105T	6-12-3	NMT4W6F	6 284
NRN106T	6-12-3	NMT4W7F	6-284
NRN107T	6-12-3	NMT4W8F	6-284



J1339
A1339
FOUR WIRE LINE
10281667
(10281563)
SAME AS A1332
FROM DATA COMM PATCHING PANEL
NMT13RXA
NMT13RXB
NMT14RXA
NMT14RXB
NMT15RXA
NMT15RXB
NMT16RXA
NMT16RXB
NTMT13
NTMT14
NTMT15
NTMT16
N1600A
NNR104T
NRN104T
NNR105T
NRN105T
NNR106T
NRN106T
NRR107T
NRN107T
NRMT13
NRMT14
NRMT15
NRMT16
NMT4W4F
NMT13TXA
NMT13TXB
NMT14TXA
NMT14TXB
NMT15TXA
NMT15TXB
NMT16TXA
NMT16TXB
TO DATA COMM PATCHING PANEL
J1435
A1435
FOUR WIRE LINE
10281667
(10281563)
SAME AS A1332
FROM DATA COMM PATCHING PANEL
NMT21RXA
NMT21RXB
NMT22RXA
NMT22RXB
NMT23RXA
NMT23RXB
NMT24RXA
NMT24RXB
NTMT21
NTMT22
NTMT23
NTMT24
N1600A
NRR114T
NRN114T
NNR115T
NRN115T
NNR116T
NRN116T
NRR117T
NRN117T
NMRT21
NRMT22
NRMT23
NRMT24
NMT4W6F
NMT21TXA
NMT21TXB
NMT22TXA
NMT22TXB
NMT23TXA
NMT23TXB
NMT24TXA
NMT24TXB
TO DATA COMM PATCHING PANEL
J1430
A1430
FOUR WIRE LINE
10281667
(1028563
SAME AS A1332
FROM DATA COMM PATCHING PANEL
NTM29RXA
NMT29RXB
NMT30RXA
NMT30RXB
NMT31RXA
NMT31RXB
NMT32RXA
NMT32RXB
NTMT29
NTMT30
NTMT31
NTMT32
N1600A
NNR124T
NRN124T
NNR125T
NRN125T
NNR126T
NRN126T
NNR127T
NRN127T
NRMT29
NRMT30
NRMT31
NRMT32
NMT4W5F
NMT29TXA
NMT29TXB
NMT30TXA
NMT30TXB
NMT31TXA
NMT31TXB
NMT32TXA
NMT32TXB
TO DATA COMM PATCHING PANEL
J1436
A1436
FOUR WIRE LINE
10281667
(10281563)
SAME AS A1332
FROM DATA COMM PATCHING PANEL
NMT17RXA
NMT17RXB
NMT18RXA
NMT18RXB
NMT19RXA
NMT19RXB
NMT20RXA
NMT20RXB
NTMT17
NTMT18
NTMT19
NTMT20
N1600A
NNR110T
NRN110T
NNR111T
NRN111T
NNR112T
NRN112T
NNR113T
NRN113T
NRMT17
NRMT18
NRMT19
NRMT20
NMT4W5F
NMT17TXA
NMT17TXB
NMT18TXA
NMT18TXB
NMT19TXA
NMT19TXB
NMT20TXA
NMT20TXB
TO DATA PATCHING PANEL
J1431
A1431
FOUR WIRE LINE
10281667
(10281563)
SAME AS A1332
FROM DATA COMM PATCHING PANEL
NMT25RXA
NMT25RXB
NMT26RXA
NMT26RXB
NMT27RXA
NMT27RXB
NMT28RXA
NMT28RXB
NTMT25
NTMT26
NTMT27
NTMT28
N1600A
NNR120T
NRN120T
NNR121T
NRN121T
NNR122T
NRN122T
NNR123T
NRN123T
NRMT25
NRMT26
NRMT27
NRMT28
NMT4W7F
NMT25TXA
NMT25TXB
NMT26TXA
NMT26TXB
NMT27TXA
NMT27TXB
NMT28TXA
NMR28TXB
TO DATA COMM PATCHING PANEL

FO-3. Maintenance Test Net Analog, Logic Diagram (Sheet 2 of 4)

INPUTS	F/O-SH	INPUTS	F/O-SH	INPUTS	F/O-SH
NMO1 POV	6-25-2	NSNT50V	6-16-1	NTB044T	6-26-2
NM02POV	6-25-2	NSNT60V	6-16-1	NTEN2AV	6-26-1
NMO3POV	6-25-2	NTBO11T	6-26-2	NTO1 PAV	6-26-2
NM04POV	6-25-2	NTB012T	6-26-2	OUTPUTS	F/O-SH
NM05POV	6-25-2	NTBO13T	6-26-2	NRMTSN1	6-28-4
NM06POV	6-25-2	NTB015T	6-26-2	NRMTSN2	6-284
NM07POV	6-25-2	NTBO16T	6-26-2	NRMTSN3	6-284
NM08POV	6-25-2	NTB017T	6-26-2	NRMTSN3	6-284
NMO9POV	6-25-2	NTB020T	6-26-2	NRMTSN4	6-284
NM1OPOV	6-25-2	NTB022T	6-26-2	NRMTSN5	6-284
NM11POV	6-25-2	NTB023T	6-26-2	NRMTSN6	6-28-4
NM12POV	6-25-2	NTB024T	6-26-2		
NM13POV	6-25-2	NTBO25T	6-26-2		
NM14POV	6-25-2	NTB027T	6-26-2		
NSNM1 A	6-16-2	NTB030T	6-26-2		
NSNM3A	6-16-2	NTB031T	6-26-2		
NSNM5A	6-16-2	NTB032T	6-26-2		
NSNM20V	6-16-2	NTB034T	6-26-2		
NSNM40V	6-16-2	NTBO35T	6-26-2		
NSNM60V	6-16-2	NTB036T	6-26-2		
NSNT10V	6-16-1	NTB037T	6-26-2		
NSNT20V	6-16-1	NTB041T	6-26-2		
NSNT30V	6-16-1	NTBO42T	6-26-2		
NSNT40V	6-16-1	NTB043T	6-26-2		

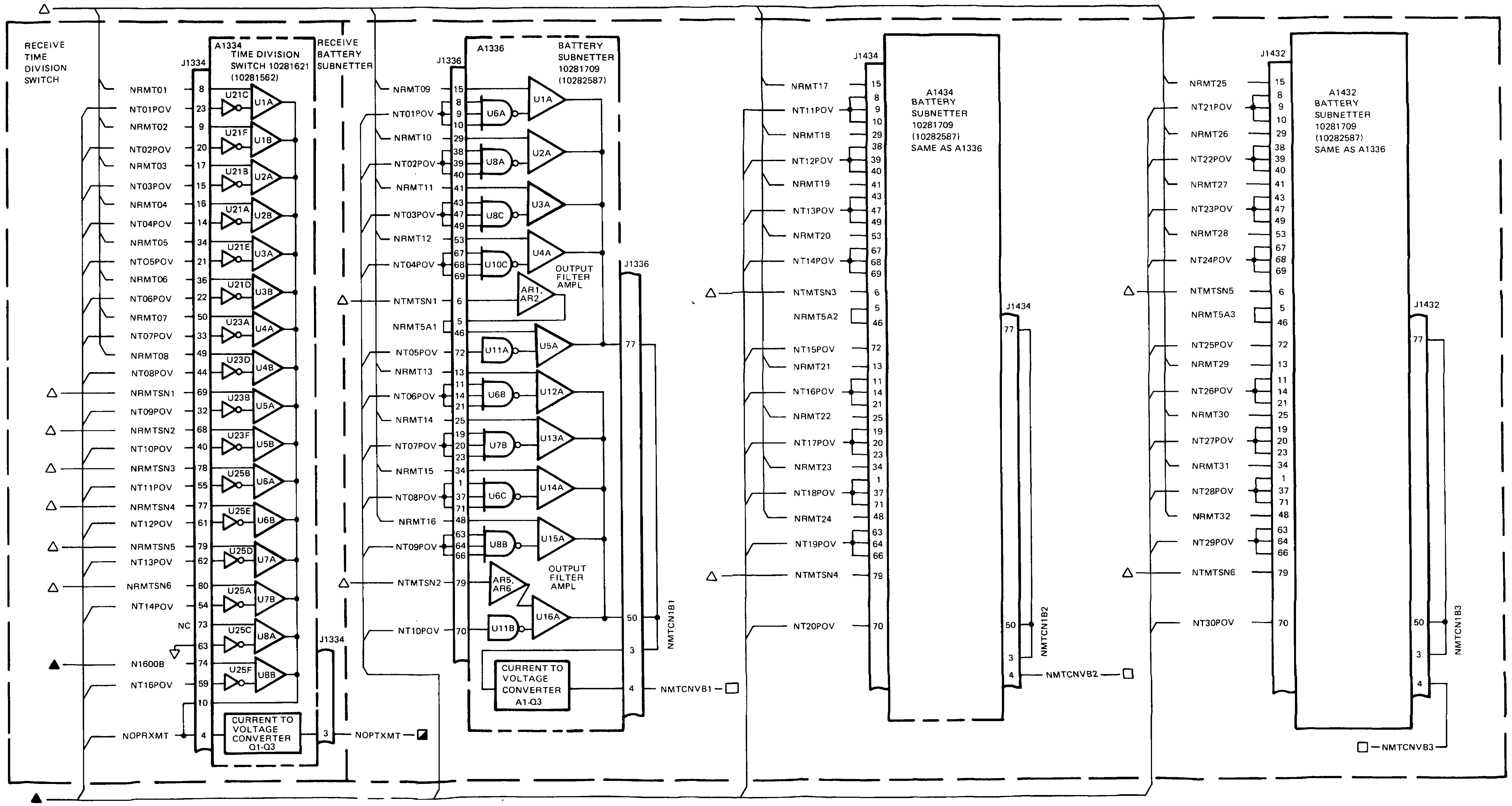

TRANSMIT TIME DIVISION SWITCH
A1334 TIME DIVISION SWITCH 10281621 (10281562)
J1334
NOPTXMT
NM01POV
NM02POV
NM03POV
NM04POV
NM05POV
NM06POV
NM07POV
NM08POV
NM09POV
NM10POV
NM11POV
NM12POV
NM13POV
NM14POV
NTEN2AV
NTMT01
NTMT02
NTMT03
NTMT04
NTMT05
NTMT06
NTMT07
NTMT08
NTMTSN1
NTMTSN2
NTMTSN3
NTMTSN4
NTMTSN5
NTMTSN6
NC
TRANSMIT BATTERY SUBNETTER
A1336 BATTERY SUBNETTER 10281709 (10282587)
J1336
NMTCNVB1
NT01PAV
NTB011T
NTB012T
NTB013T
NSNM1A
NSNT10V
NTB015T
NTB016T
NTB017T
NTB020T
NSNM20V
NSNT20V
OUTPUT FILTER AMPL
NTMT09
NTMT10
NTMT11
NTMT12
NTMT5A1
NRMTSN1
NTMT13
NTMT14
NTMT15
NTMT16
NRMTSN2
A1432 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1336
J1432
NMTCNVB3
NTB034T
NTB035T
NTB036T
NTB037T
NSNM5A
NSNT50V
NTB041T
NTB042T
NTB043T
NTB044T
NSNM60V
NSNT60V
NTMT25
NTMT26
NTMT27
NTMT28
NTMT5A3
NRMTSN5
NTMT29
NTMT30
NTMT31
NTMT32
NRMTSN6
A1434 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1336
J1434
NMTCNVB2
NTB022T
NTB023T
NTB024T
NTB025T
NSNM3A
NSNT30V
NTB027T
NTB030T
NTB031T
NTB032T
NSNM40V
NSNT40V
NTMT17
NTMT18
NTMT19
NTMT20
NTMT5A2
NRMTSN3
NTMT21
NTMT22
NTMT23
NTMT24
NRMTSA4

FO-3. Maintenance Test Net Analog, Logic Diagram (Sheet 3 of 4)

INPUTS	F/O-SH
NT01POV	6-26-2
NT02POV	6-26-2
NT03POV	6-26-2
NT04POV	6-26-2
NT05POV	6-26-2
NT06POV	6-26-2
NT07POV	6-26-2
NT08POV	6-26-2
NT09POV	6-26-2
NT10OPOV	6-26-2
NT11POV	6-26-2
NT12POV	6-26-2
NT13POV	6-26-2
NT14POV	6-26-2
NT15POV	6-26-2
NT16POV	6-26-2
NT17POV	6-26-2
NT18POV	6-26-2
NT19POV	6-26-2
NT20POV	6-26-2
NT21POV	6-26-2
NT22POV	6-26-2
NT23POV	6-26-2
NT24POV	6-26-2

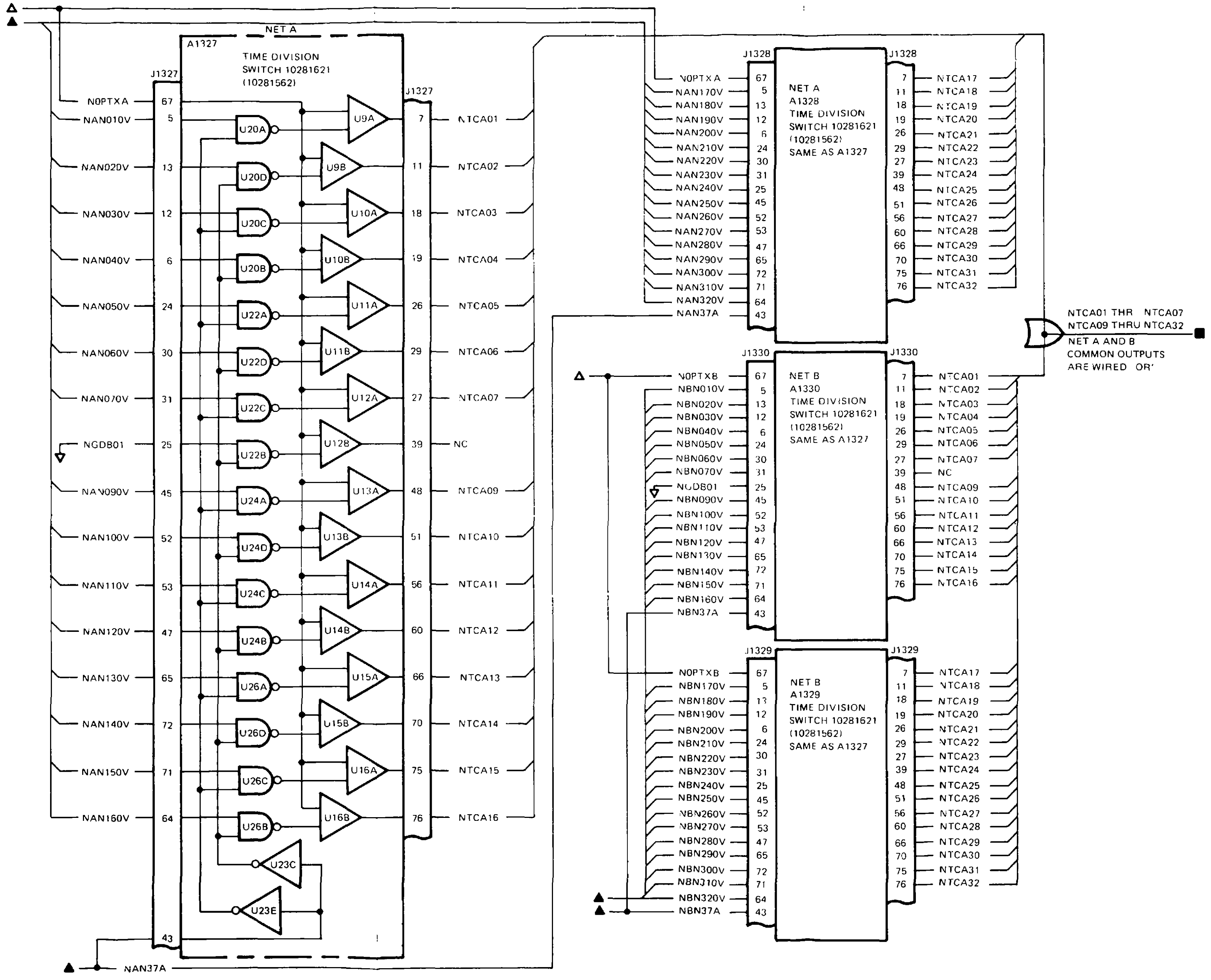
INPUTS	F/OSH
NT25POV	6-26-2
NT26POV	6-26-2
NT27POV	6-26-2
NT28POV	6-26-2
NT29POV	6-26-2
NT30POV	6-26-2
NOPRXMT	6-5-0
N1600B	6-28-2

OUTPUTS	F/O-SH
NOPTXMT	6-5-0


RECEIVE TIME DIVISION SWITCH
A1334 TIME DIVISION SWITCH 10281621 (10281562)
J1334
RECEIVE BATTERY SUBNETTER
A1336
BATTERY SUBNETTER 10281709 (10282587)
J1336
OUTPUT FILTER AMPL
AR1, AR2
AR5, AR6
CURRENT TO VOLTAGE CONVERTER Q1-Q3
CURRENT TO VOLTAGE CONVERTER A1-Q3
NOPRXMT
NOPTXMT
N1600B
NC
NMTCN1B1
NMTCNVB1
J1434
A1434 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1336
NMTCN1B2
NMTCNVB2
J1432
A1432 BATTERY SUBNETTER 10281709 (10282587) SAME AS A1336
NMTCN1B3
NMTCNVB3
NRMT01
NT01POV
NRMT02
NT02POV
NRMT03
NT03POV
NRMT04
NT04POV
NRMT05
NT05POV
NRMT06
NT06POV
NRMT07
NT07POV
NRMT08
NT08POV
NRMTSN1
NT09POV
NRMTSN2
NT10POV
NRMTSN3
NT11POV
NRMTSN4
NT12POV
NRMTSN5
NT13POV
NRMTSN6
NT14POV
NT16POV
NRMT09
NRMT10
NRMT11
NRMT12
NTMTSN1
NRMT5A1
NRMT13
NRMT14
NRMT15
NRMT16
NTMTSN2
NRMT17
NRMT18
NRMT19
NRMT20
NTMTSN3
NRMT5A2
NT15POV
NRMT21
NRMT22
NT17POV
NRMT23
NT18POV
NRMT24
NT19POV
NTMTSN4
NT20POV
NRMT25
NT21POV
NRMT26
NT22POV
NRMT27
NT23POV
NRMT28
NT24POV
NTMTSN5
NRMT5A3
NT25POV
NRMT29
NT26POV
NRMT30
NT27POV
NRMT31
NT28POV
NRMT32
NT29POV
NTMTSN6
NT30POV

FO-3 Maintenance Test Net Analog, Logic Diagram (Sheet 4 of 4)

INPUTS	/O-SH	INPUTS	F/O-SH	INPUTS	F/O-SH	OUTPUTS	F/O-SH
NANO10V	▲ -14-2	NAN260V	6-14-2	NBN180V	6-14-3	NTCA07	6-2-1
NAN020V	△ -14-2	NAN270V	6-14-2	NBN190V	6-14-3	NTCA09	6-2-1
NAN030V	■ -14-2	NAN280V	6-14-2	NBN200V	6-14-3	NTCA10	6-2-1
NAN040V	◪ -14-2	NAN290V	6-14-2	NBN210V	6-14-3	NTCA11	6-2-1
NAN050V	□ -14-2	NAN300V	6-14-2	NBN220V	6-14-3	NTCA12	6-2-1
NAN060V	6-14-2	NAN310V	6-14-2	NBN230V	6-143	NTCA13	6-2-1
NAN070V	6-14-2	NAN320V	6-14-2	NBN240V	6-14-3	NTCA14	6-2-2
NAN09OV	6-14-2	NAN37A	6-14-1	NBN250V	6-14-3	NTCA15	6-2-2
NAN100V	6-14-2	NBNO10V	6-14-3	NBN260V	6-14-3	NTCA16	6-2-2
NAN110V	6-14-2	NBN020V	6-14-3	NBN270V	6-14-3	NTCA17	6-2-2
NAN120V	6-14-2	NBNO30V	6-143	NBN280V	6-14-3	NTCA18	6-2-2
NAN130V	6-14-2	NBNO40V	6-14-3	NBN290V	6-14-3	NTCA19	6-2-2
NAN140V	6-14-2	NBNO50V	6-14-3	NBN300V	6-14-3	NTCA20	6-2-2
NAN150V	6-14-2	NBN060V	6-14-3	NBN310V	6-14-3	NTCA21	6-2-2
NAN160V	6-14-2	NBNO70V	6-14-3	NBN320V	6-14-3	NTCA22	6-2-2
NAN170V	6-14-2	NBNO9OV	6-14-3	NBN37A	6-14-1	NTCA23	6-2-2
NAN180V	6-14-2	NBN100V	6-14-3			NTCA24	6-2-2
NAN190V	6-14-2	NBN110V	6-14-3	OUTPUTS	F/O-SH	NTCA25	6-2-2
NAN200V	6-14-2	NBN120V	6-14-3	NTCA01	6-2-1	NTCA26	6-2-2
NAN210V	6-14-2	NBN130V	6-14-3	NTCA02	6-2-1	NTCA27	6-2-2
NAN220V	6-14-2	N8N140V	6-14-3	NTCAO3	6-2-1	NTCA28	6-2-2
NAN230V	6-14-2	NBN150V	6-14-3	NTCA04	6-2-1	NTCA29	6-2-2
NAN240V	6-14-2	NBN160V	6-14-3	NTCA05	6-2-1	NTCA30	6-2-2
NAN250V	6-14-2	NBN170V	6-14-3	NTCAO6	6-2-1	NTCA31	6-2-2
						NTCA32	6-2-2


NET A
A1327
TIME DIVISION
SWITCH 10281621
(10281562)
J1327
N0PTXA
NAN010V
NAN020V
NAN030V
NAN040V
NAN050V
NAN060V
NAN070V
NGDB01
NAN090V
NAN100V
NAN110V
NAN120V
NAN130V
NAN140V
NAN150V
NAN160V
NAN37A
U20A
U20D
U20C
U20B
U22A
U22D
U22C
U22B
U24A
U24D
U24C
U24B
U26A
U26D
U26C
U26B
U23C
U23E
U9A
U9B
U10A
U10B
U11A
U11B
U12A
U12B
U13A
U13B
U14A
U14B
U15A
U15B
U16A
U16B
NTCA01
NTCA02
NTCA03
NTCA04
NTCA05
NTCA06
NTCA07
NC
NTCA09
NTCA10
NTCA11
NTCA12
NTCA13
NTCA14
NTCA15
NTCA16
J1328
NET A
A1328
TIME DIVISION
SWITCH 10281621
(10281562)
SAME AS A1327
NAN170V
NAN180V
NAN190V
NAN200V
NAN210V
NAN220V
NAN230V
NAN240V
NAN250V
NAN260V
NAN270V
NAN280V
NAN290V
NAN300V
NAN310V
NAN320V
NTCA17
NTCA18
NTCA19
NTCA20
NTCA21
NTCA22
NTCA23
NTCA24
NTCA25
NTCA26
NTCA27
NTCA28
NTCA29
NTCA30
NTCA31
NTCA32
NTCA01 THR NTCA07
NTCA09 THRU NTCA32
NET A AND B
COMMON OUTPUTS
ARE WIRED OR'
J1330
NET B
A1330
TIME DIVISION
SWITCH 10281621
(10281562)
SAME AS A1327
N0PTXB
NBN010V
NBN020V
NBN030V
NBN040V
NBN050V
NBN060V
NBN070V
NGDB01
NBN090V
NBN100V
NBN110V
NBN120V
NBN130V
NBN140V
NBN150V
NBN160V
NBN37A
J1329
NET B
A1329
TIME DIVISION
SWITCH 10281621
(10281562)
SAME AS A1327
NBN170V
NBN180V
NBN190V
NBN200V
NBN210V
NBN220V
NBN230V
NBN240V
NBN250V
NBN260V
NBN270V
NBN280V
NBN290V
NBN300V
NBN310V
NBN320V

FO-4. Net A and B, Analog, Logic Diagram (Sheet 1 of 2)

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲ INPUT FROM ANOTHER FIGURE

△ INPUT FROM SAME FIGURE

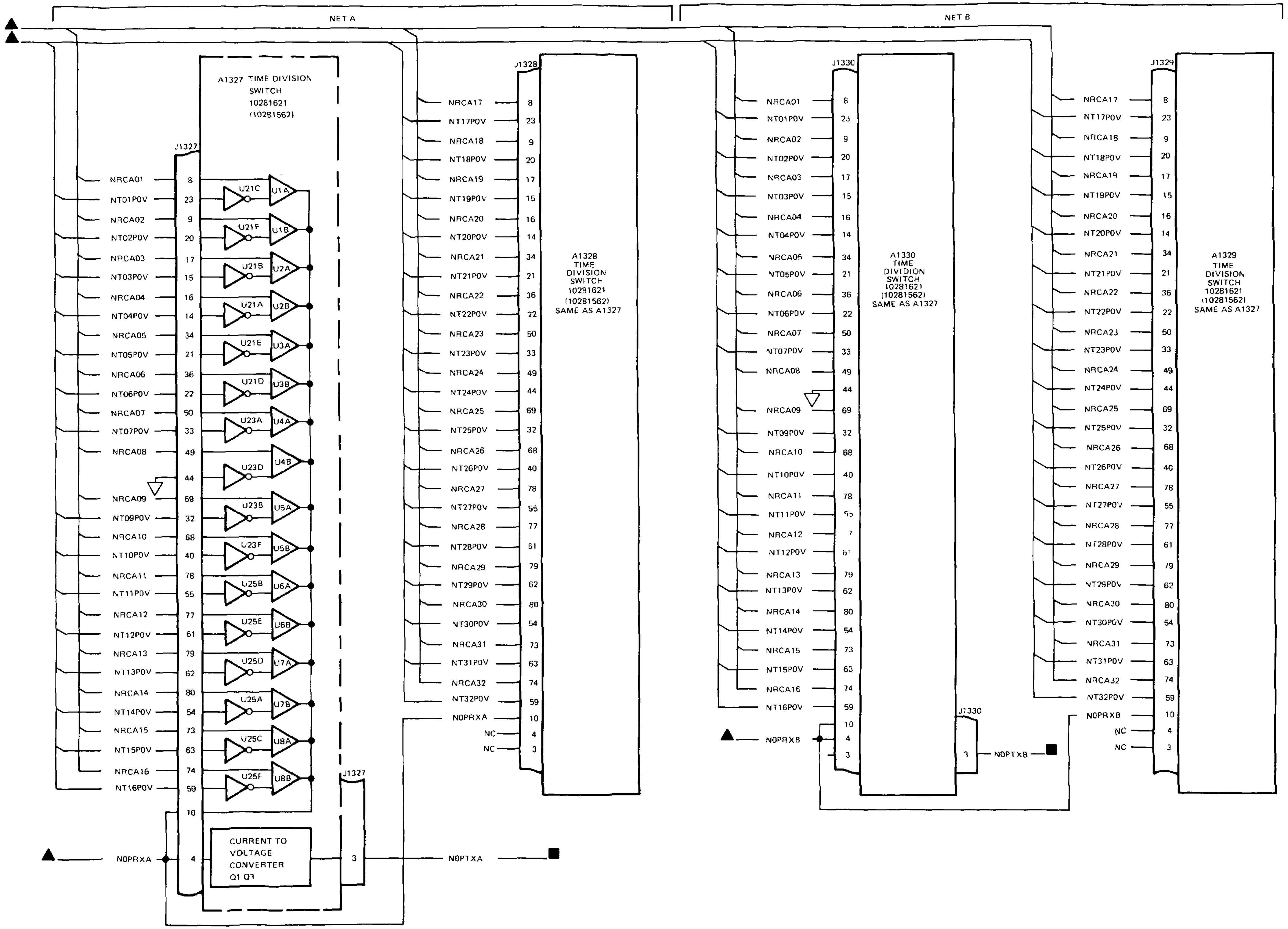
■ OUTPUT TO ANOTHER FIGURE

◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE

□ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

INPUTS	F/O - SH
NLC160	6-19-0
NMSTRD4	6-27-2


NET A
NET B
A1327 TIME DIVISION SWITCH 10281621 (10281562)
J1327
NRCA01
NT01POV
NRCA02
NT02POV
NRCA03
NT03POV
NRCA04
NT04POV
NRCA05
NT05POV
NRCA06
NT06POV
NRCA07
NT07POV
NRCA08
NRCA09
NT09POV
NRCA10
NT10POV
NRCA11
NT11POV
NRCA12
NT12POV
NRCA13
NT13POV
NRCA14
NT14POV
NRCA15
NT15POV
NRCA16
NT16POV
NOPRXA
NOPTXA
U21C
U1A
U21F
U1B
U21B
U2A
U21A
U2B
U21E
U3A
U21D
U3B
U23A
U4A
U23D
U4B
U23B
U5A
U23F
U5B
U25B
U6A
U25E
U6B
U25D
U7A
U25A
U7B
U25C
U8A
U25F
U8B
CURRENT TO VOLTAGE CONVERTER Q1 Q7
J1328
A1328 TIME DIVISION SWITCH 10291621 (10281562) SAME AS A1327
NRCA17
NT17POV
NRCA18
NT18POV
NRCA19
NT19POV
NRCA20
NT20POV
NRCA21
NT21POV
NRCA22
NT22POV
NRCA23
NT23POV
NRCA24
NT24POV
NRCA25
NT25POV
NRCA26
NT26POV
NRCA27
NT27POV
NRCA28
NT28POV
NRCA29
NT29POV
NRCA30
NT30POV
NRCA31
NT31POV
NRCA32
NT32POV
NOPRXA
NC
NC
J1330
A1330 TIME DIVIDION SWITCH 10281621 (10281562) SAME AS A1327
NOPRXB
NOPTXB
J1329
A1329 TIME DIVISION SWITCH 10281621 (10281562) SAME AS A1327
NOPRXB
NC
NC
8
23
9
20
17
15
16
14
34
21
36
22
50
33
49
44
69
32
68
40
78
55
77
61
79
62
80
54
73
63
74
59
10
4
3

FO-4. Net A and B Analog, Logic Diagram (Sheet 2 of 2)

INPUTS	F/O-SH
NABC11U	6-15-0
NABC12U	6-15-0
NABC13U	6-15-0
NABC14U	6 15-0
NABC21U	6-15-0
NABC22U	6-15-0
NABC23U	6-15-0
NABC24U	6.150
NABC31U	6-15-0
NABC32U	6-15-0
NABC33U	6 15-0
NABC34U	6-150
NABC41U	6 15 0
NABC42U	6-15-0
NABC43U	6-15 0
NABC44U	6.15 0
NABC51U	6-15-0
NABC52U	6-15-0
NABC53U	6-150
NABC54U	6-15 0
NAN080V	6-14 2
NBN08OV	6-14-3
NC01CO	6-21-3
NC02CO	6-21-3
NC03CO	6-21-3

INPUTS	F/O-SH
NC04CO	6-21-3
NC05CO	6-21-3
NC06CO	6-21-3
NC07CO	6-21-3
NC08CO	6-21-3
NC09CO	6-21-3
NC10CO	6-21-3
NC17POV	6-24-2
NC18POV	6-24-2
NC19PO	6-24-2
NC20POV	6-24-2
NC21POV	6-24-2
NC22POV	6-24-2
NC23POV	6 24-2
NC24POV	6-24-2
NC25POV	6-24-2
NC26POV	6-24-2
NMO1CO	6-21-4
NM02CO	6-21-4
NM03CO	6-21-4
NM04CO	6-21-4
NMOSCO	6-21-4
NM06CO	6-21-4
NM07CO	6-21-4

INPUTS	F/O-SH
NM08CO	6-21-4
NM09CO	6-21-4
NM10CO	6-214
NM17POV	6-25-2
NM18POV	6-25-2
NM19POV	6-25-2
NM20POV	6-25-2
NM21POV	6-25-2
NM22POV	6-25-2
NM23POV	6-25-2
NM24POV	6-25-2
NM25POV	6-25-2
NM26POV	6-25-2
NRS01R	6-10-2
NRSO2R	6-10-2
NRS03R	6 10-2
NRS04R	6-10-2
NRSO5R	6-10-2
NRS06R	6-10-2
NRS07R	6-10-2
NRS08R	6-10-2
NRS09R	6-10-2
NRS10R	6-10-2
NTEOPOH	6-26-1

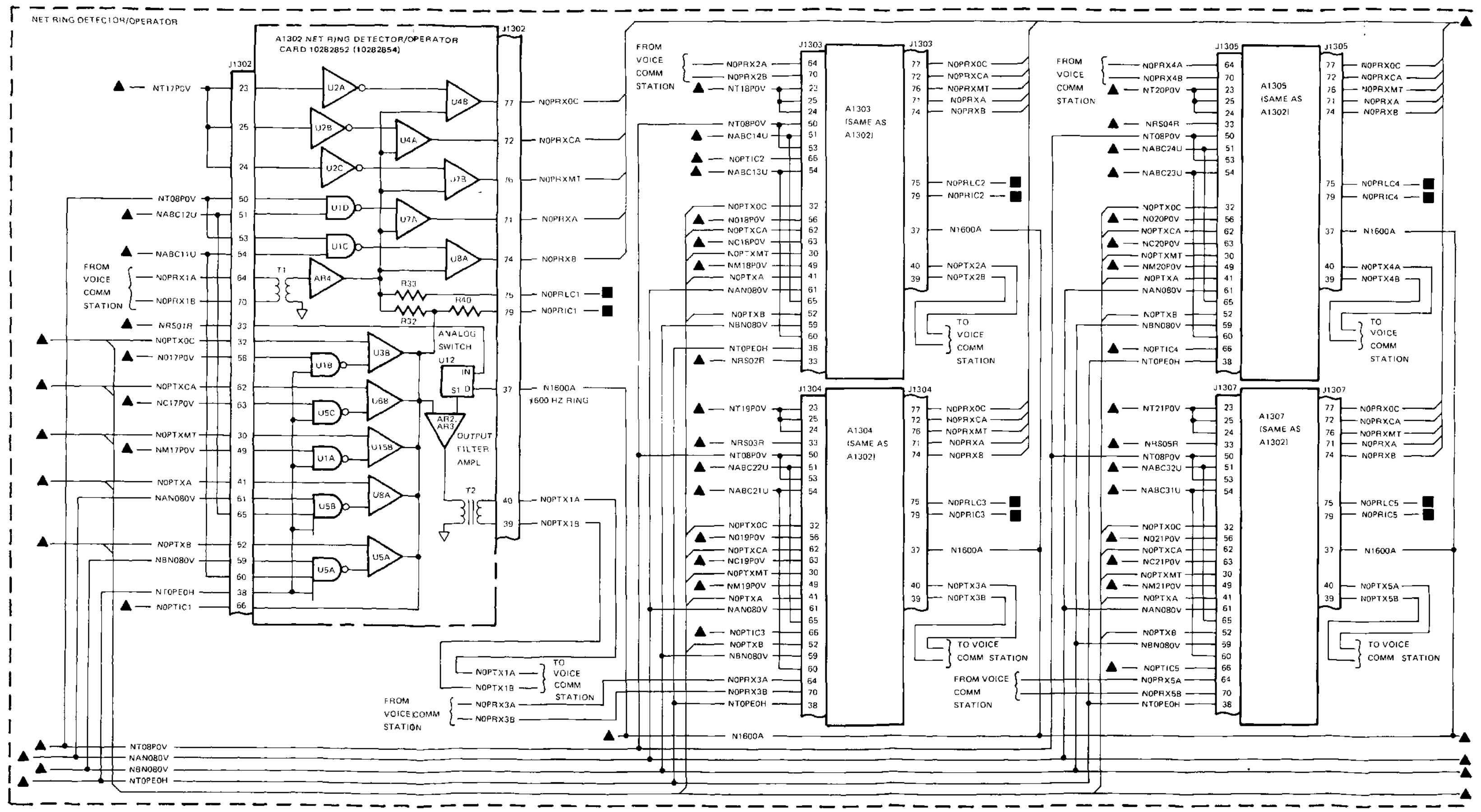
INPUTS	F/O-SH
NTOPEOH	6-26-1
NT08POV	6-26-2
NT17POV	6-26-2
NT18POV	6-26-2
NT19POV	6-26-2
NT20POV	6-26-2
NT21POV	6-26-2
NT22POV	6-26-2
NT23POV	6-26-2
NT24POV	6-26-2
NT25POV	6-26-2
NT26POV	6-16-2
NTBOPOV	6-26-2
NOPTICO	6-7-2
NOPTIC1	6-7-2
NOPTIC2	6-7-2
NOPTIC3	6-7-2
NOPTIC4	6-7-2
NOPTIC5	6-7-2
NOPTIC6	6-7-2
NOPTIC7	6-7-2
NOPTIC8	6-7-2
NOPTIC9	6-7-2
NOPTXA	6-4-2

INPUTS	F/O SH
NOPTXB	6-4-2
NOPTXCA	6 2 4
NOPTXMT	6-3 4
NOPTXOC	6-1 4
N001CO	6 21-3
N002C0	6-21 3
N003CO	6 21 3
N004CO	6 21 3
NO005CO	6 21 3
NO006CO	6 21 3
N007CO	6-21 3
N008C0	6 21 3
N009C0	6-21 3
NO10CO	6-21-3
N017POV	6-23 3
NOt8POV	6-23 3
NO19POV	6-23-3
N020POV	6-23-3
N021POV	6-23-3
N022POV	6-23-3
N023POV	6-23-3
N024POV	6-23-3
N025POV	6-23-3
N026POV	6-23-3
N1600A	6 28-2

OUTPUTS	F/O-SH
NRD01A	6-9-1
NRD02A	6-9-1
NRD03A	6-9-1
NRD04A	6-9-1
NRD21A	6-9-1
NRD22A	6-9-1
NRD23A	6-9-1
NRD24A	6-9-1
NRD41A	6-9-1
NRD42A	6-9 1
NRD43A	6-9-1
NRD44A	6-9 1
NRD05A1	6-9 1
NRD06A1	6-9-1
NRD07A1	6-9-1
NRDO8A1	6-9-1
NRD09A1	6-9-1
NRD 1OA1	6-9-1
NRD25A1	6-9-1
NRD26A1	6-9-1
NRD27A1	6-9-1
NRD28A1	6-9-1
NRD29A1	6-9-1

OUTPUTS	F/O-SH
NRD30A1	6-9-1
NRD45A1	6-9-1
NRD46A1	6-9 1
NRD47A1	6 9-1
NRD48A1	6-9-1
NRD49A1	6-9-1
NRD50A1	6-9-1
NOPRICI	6-7-2
NOPRIC2	6-7-2
NOPRIC3	6-7-2
NOPRIC4	6-7-2
NOPRIC5	6-7-2
NOPRIC6	6-7-2
NOPRIC7	6-7-2
NOPRIC8	6-7-2
NOPRIC9	6-7-2
NOPRIC10	6-7-2
NOPR LC 1	6-7-2
NOPRLC2	6-7-2
NOPRLC3	6-7-2
NOPRLC4	6-7-2
NOPRLC5	6-7-2

OUTPUTS	F/O SH
NOPRLC6	6-7-2
NOPRLC7	6-7-2
NOPRLC8	6 7-2
NOPRLC9	6-7-2
NOPRLC10	6-7-2
NOPRXA	6-4-2
NOPRXB	6-4-2
NOPRXCA	6-2-4
NOPRXMT	6-3-4
NOPRXOC	6-1-4
N1600A	6-28-2



FO-5. Net Ring Detector Circuits, Logic Diagram (Sheet 1 of 2)

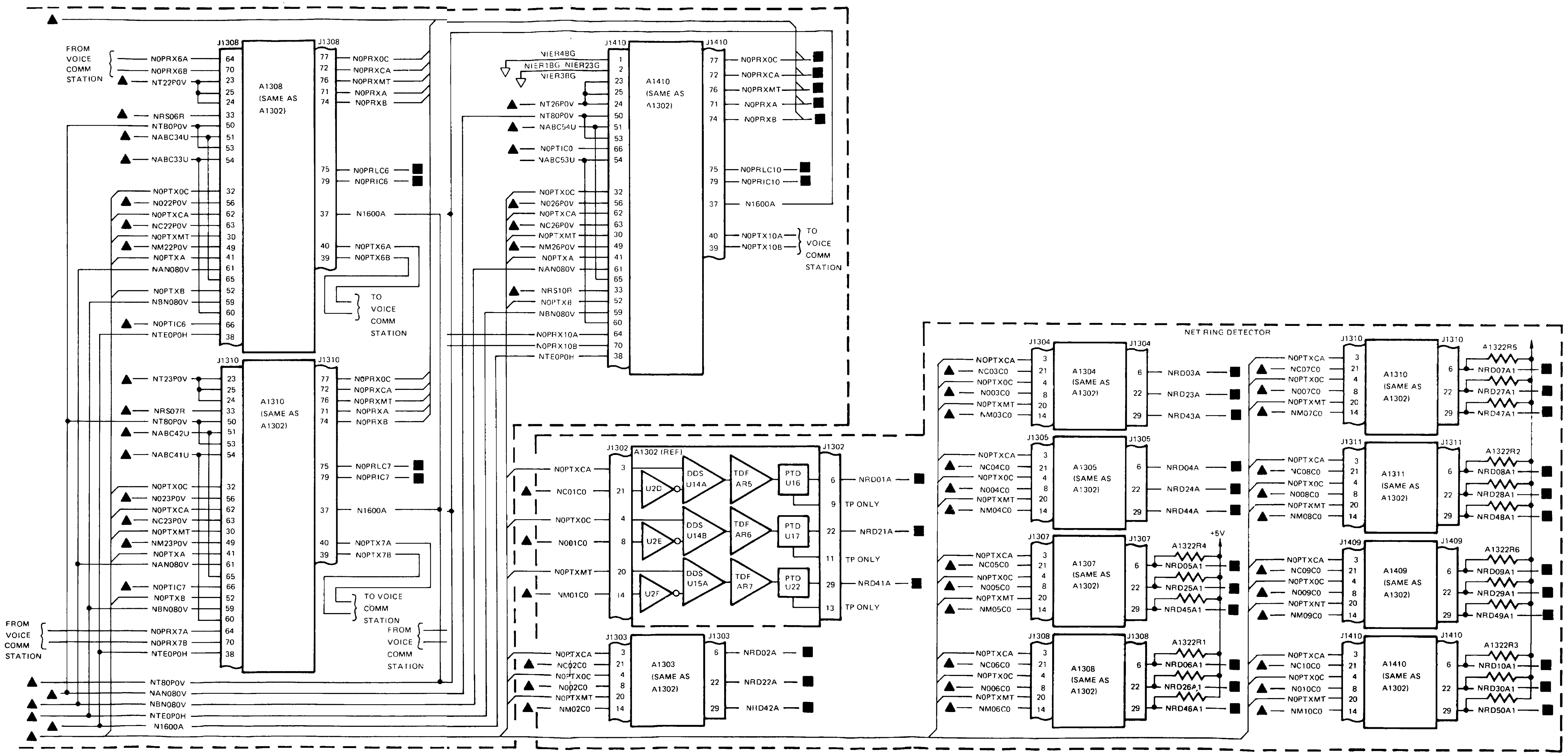
NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲ INPUT FROM ANOTHER FIGURE
△
■ INPUT FROM SAME FIGURE
◪ OUTPUT TO ANOTHER FIGURE
☐ OUTPUT TO BOTH SAME AND ANOTHER FIGURE

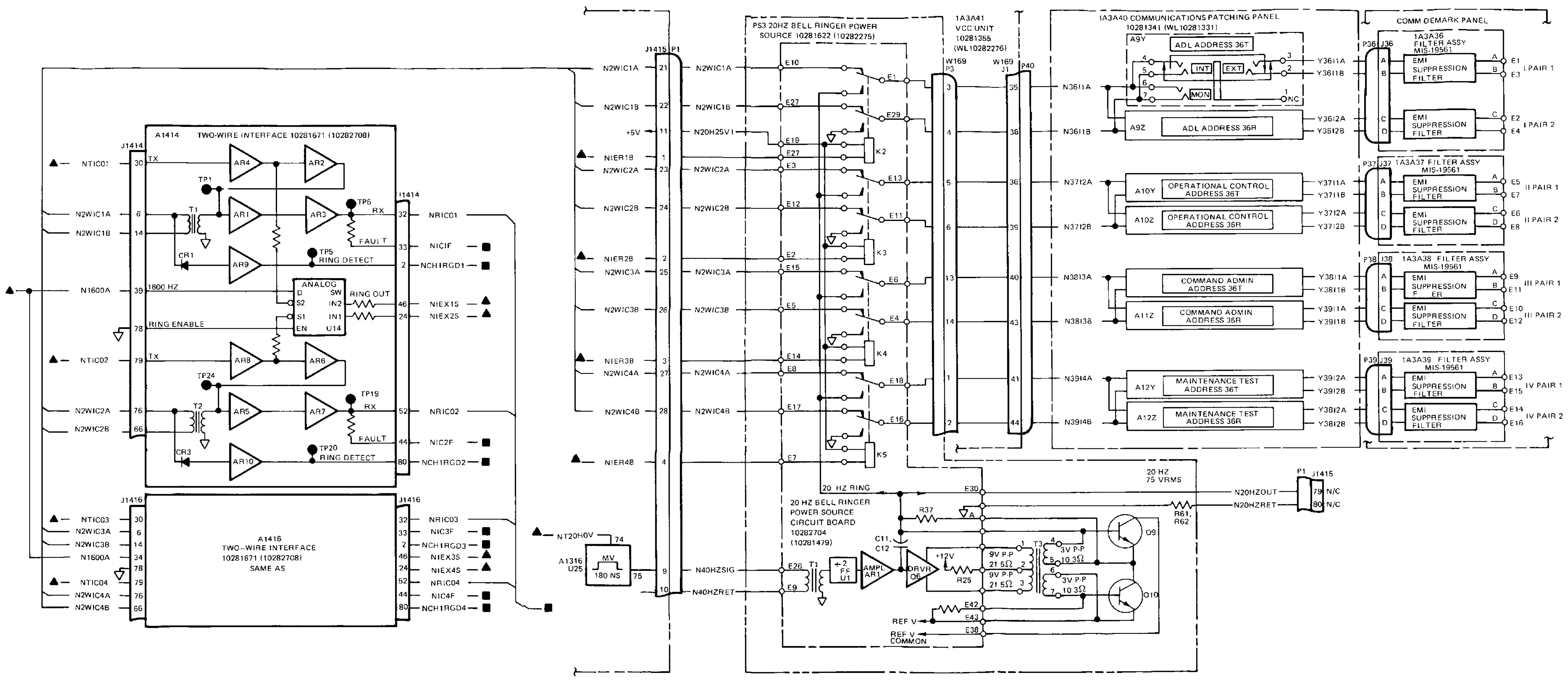
OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.


J1308
A1308 (SAME AS A1302)
J1310
A1310 (SAME AS A1302)
J1410
A1410 (SAME AS A1302)
FROM VOICE COMM STATION
TO VOICE COMM STATION
NIER4BG
NIER1BG
NIER23G
NIER3BG
N0PRX6A
N0PRX6B
NT22P0V
NRS06R
NT80P0V
NABC34U
NABC33U
N0PTX0C
N0PTXCA
N0PTXMT
N0PTXA
N0PTXB
NAN080V
NBN080V
NTE0P0H
N1600A
N0PRX0C
N0PRXCA
N0PRXMT
N0PRXA
N0PRXB
N0PRLC6
N0PRIC6
N0PTX6A
N0PTX6B
NT23P0V
NRS07R
NABC42U
NABC41U
N0PRLC7
N0PRIC7
N0PTX7A
N0PTX7B
N0PRX7A
N0PRX7B
NT26P0V
NABC54U
NABC53U
N0PTIC0
NRS10R
N0PRX10A
N0PRX10B
N0PRLC10
N0PRIC10
N0PTX10A
N0PTX10B
NET RING DETECTOR
J1302
A1302 (REF)
U2D
U2E
U2F
DDS U14A
DDS U14B
DDS U15A
TDF AR5
TDF AR6
TDF AR7
PTD U16
PTD U17
PTD U22
NC01C0
N001C0
NM01C0
NRD01A
NRD21A
NRD41A
TP ONLY
J1303
A1303 (SAME AS A1302)
NRD02A
NRD22A
NRD42A
J1304
A1304 (SAME AS A1302)
NRD03A
NRD23A
NRD43A
J1305
A1305 (SAME AS A1302)
NRD04A
NRD24A
NRD44A
J1307
A1307 (SAME AS A1302)
A1322R4
+5V
NRD05A1
NRD25A1
NRD45A1
J1308
A1308 (SAME AS A1302)
A1322R1
NRD06A1
NRD26A1
NRD46A1
J1310
A1310 (SAME AS A1302)
A1322R5
NRD07A1
NRD27A1
NRD47A1
J1311
A1311 (SAME AS A1302)
A1322R2
NRD08A1
NRD28A1
NRD48A1
J1409
A1409 (SAME AS A1302)
A1322R6
NRD09A1
NRD29A1
NRD49A1
J1410
A1410 (SAME AS A1302)
A1322R3
NRD10A1
NRD30A1
NRD50A1

FO-5. Net Ring Detector Circuits, Logic Diagram (sheet 2 of 2)

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NTIC01	6-7-2	NCH1RGD1	6-17-1
NTIC02	6-7-2	NCH1RGD2	6-17-1
NTIC03	6-7-2	NCH1RGD3	6-17-1
NTIC04	6-7-2	NCH1RGD4	6-17-1
NT20HOV	6-18-0	NIC1F	6-28-4
N1ERIB	6-18-0	NIC2F	6-28-4
N1ER2B	6-18-0	NIC3F	6-28-4
N1ER3B	6-18-0	NIC4F	6-28-4
N1ER4B	6-18-0	NRIC01	6-7-2
N1EX1S	6-18-0	NRIC02	6-7-2
N1EX2S	6-18-0	NRIC03	6-7-2
N1EX3S	6-18-0	NRIC04	6-7-2
N1EX4S	6-18-0		
N1600A	6-28-2		


A1414 TWO-WIRE INTERFACE 10281671 (10282708)
J1414
NTIC01
N2WIC1A
N2WIC1B
N1600A
NTIC02
N2WIC2A
N2WIC2B
TX
TP1
T1
CR1
AR4
AR2
AR1
AR3
AR9
TP6
RX
FAULT
TP5
RING DETECT
1600 HZ
ANALOG
D
SW
S2
IN2
S1
IN1
EN
U14
RING OUT
RING ENABLE
AR8
AR6
TP24
T2
CR3
AR5
AR7
AR10
TP19
TP20
NRIC01
NICIF
NCH1RGD1
NIEX1S
NIEX2S
NRIC02
NIC2F
NCH1RGD2
J1416
A1416
TWO–WIRE INTERFACE
10281671 (10282708)
SAME AS
NTIC03
N2WIC3A
N2WIC3B
NTIC04
N2WIC4A
N2WIC4B
NRIC03
NIC3F
NCH1RGD3
NIEX3S
NIEX4S
NRIC04
NIC4F
NCH1RGD4
NT20H0V
A1316
U25
MV
180 NS
J1415
P1
+5V
N20H25V1
NIER1B
N2WIC2A
N2WIC2B
NIER2B
N2WIC3A
N2WIC3B
NIER3B
N2WIC4A
N2WIC4B
NIER4B
N40HZSIG
N40HZRET
PS3 20HZ BELL RINGER POWER
SOURCE 10281622 (10282275)
K2
K3
K4
K5
20 HZ RING
20 HZ BELL RINGER
POWER SOURCE
CIRCUIT BOARD
10282704
(10281479)
R37
C11,
C12
÷2
FF
U1
AMPL
AR1
DRVR
Q6
+12V
R25
9V P-P
21 5Ω
T3
3V P-P
10 3Ω
Q9
Q10
REF V
REF V
COMMON
E30
E42
E43
E38
20 HZ
75 VRMS
N20HZOUT
N20HZRET
R61,
R62
N/C
1A3A41
VCC UNIT
10281355
(WL10282276)
W169
P3
J1
P40
N36I1A
N36I1B
N37I2A
N37I2B
N38I3A
N38I3B
N39I4A
N39I4B
1A3A40 COMMUNICATIONS PATCHING PANEL
10281341 (WL10281331)
A9Y
ADL ADDRESS 36T
INT
EXT
MON
NC
A9Z
ADL ADDRESS 36R
A10Y
OPERATIONAL CONTROL
ADDRESS 36T
A10Z
OPERATIONAL CONTROL
ADDRESS 36R
COMMAND ADMIN
ADDRESS 36T
A11Z
COMMAND ADMIN
ADDRESS 36R
A12Y
MAINTENANCE TEST
ADDRESS 36T
A12Z
MAINTENANCE TEST
ADDRESS 36R
Y36I1A
Y36I1B
Y36I2A
Y36I2B
Y37I1A
Y37I1B
Y37I2A
Y37I2B
Y38I1A
Y38I1B
Y39I1A
Y39I1B
Y39I2A
Y39I2B
Y38I2A
Y38I2B
COMM DEMARK PANEL
P36
J36
1A3A36
FILTER ASSY
MIS-19561
EMI
SUPPRESSION
FILTER
I PAIR 1
I PAIR 2
P37
J37
1A3A37 FILTER ASSY
MIS-19561
II PAIR 1
II PAIR 2
P38
J38
1A3A38 FILTER ASSY
MIS-19561
III PAIR 1
III PAIR 2
P39
J39
1A3A39 FILTER ASSY
MIS-19561
IV PAIR 1
IV PAIR 2

FO-6. Intercomm Interface, Logic Diagram

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

   INPUT FROM ANOTHER FIGURE

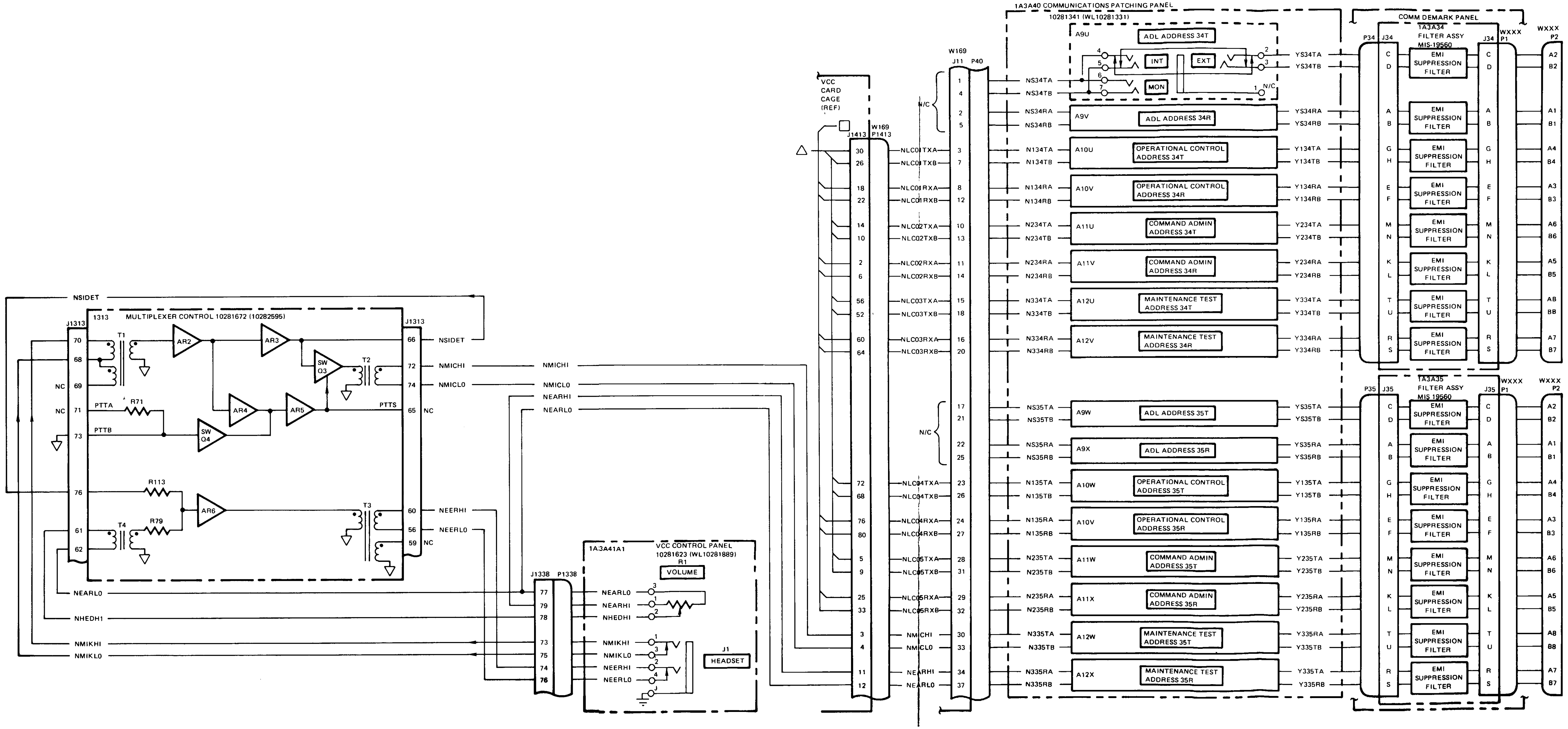
   ▲ INPUT FROM SAME FIGURE

   △ OUTPUT TO ANOTHER FIGURE

   ■ OUTPUT TO BOTH SAME AND ANOTHER FIGURE

   ◪

   ┌ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. ☐ INDICATES EQUIPMENT MARKINGS.


1A3A40 COMMUNICATIONS PATCHING PANEL
10281341 (WL10281331)
COMM DEMARK PANEL
1A3A34 FILTER ASSY MIS-19560
1A3A35 FILTER ASSY MIS-19560
EMI SUPPRESSION FILTER
VCC CARD CAGE (REF)
W169 J11 P40
W169 J1413 P1413
J1313
1313 MULTIPLEXER CONTROL 10281672 (10282595)
NSIDET
NMICHI
NMICLO
NEARHI
NEARLO
NEERHI
NEERLO
NHEDHI
NMIKHI
NMIKLO
PTTA
PTTB
PTTS
NC
AR2
AR3
AR4
AR5
AR6
SW Q3
SW Q4
T1
T2
T3
T4
R71
R79
R113
1A3A41A1
VCC CONTROL PANEL 10281623 (WL10281689)
R1 VOLUME
J1 HEADSET
J1338 P1338
A9U ADL ADDRESS 34T
INT
EXT
MON
N/C
A9V ADL ADDRESS 34R
A10U OPERATIONAL CONTROL ADDRESS 34T
A10V OPERATIONAL CONTROL ADDRESS 34R
A11U COMMAND ADMIN ADDRESS 34T
A11V COMMAND ADMIN ADDRESS 34R
A12U MAINTENANCE TEST ADDRESS 34T
A12V MAINTENANCE TEST ADDRESS 34R
A9W ADL ADDRESS 35T
A9X ADL ADDRESS 35R
A10W OPERATIONAL CONTROL ADDRESS 35T
A10V OPERATIONAL CONTROL ADDRESS 35R
A11W COMMAND ADMIN ADDRESS 35T
A11X COMMAND ADMIN ADDRESS 35R
A12W MAINTENANCE TEST ADDRESS 35T
A12X MAINTENANCE TEST ADDRESS 35R
NLC01TXA
NLC01TXB
NLC01RXA
NLC01RXB
NLC02TXA
NLC02TXB
NLC02RXA
NLC02RXB
NLC03TXA
NLC03TXB
NLC03RXA
NLC03RXB
NLC04TXA
NLC04TXB
NLC04RXA
NLC04RXB
NLC05TXA
NLC05TXB
NLC05RXA
NLC05RXB
NS34TA
NS34TB
NS34RA
NS34RB
N134TA
N134TB
N134RA
N134RB
N234TA
N234TB
N234RA
N234RB
N334TA
N334TB
N334RA
N334RB
NS35TA
NS35TB
NS35RA
NS35RB
N135TA
N135TB
N135RA
N135RB
N235TA
N235TB
N235RA
N235RB
N335TA
N335TB
N335RA
N335RB
YS34TA
YS34TB
YS34RA
YS34RB
Y134TA
Y134TB
Y134RA
Y134RB
Y234TA
Y234TB
Y234RA
Y234RB
Y334TA
Y334TB
Y334RA
Y334RB
YS35TA
YS35TB
YS35RA
YS35RB
Y135TA
Y135TB
Y135RA
Y135RB
Y235TA
Y235TB
Y235RA
Y235RB
Y335TA
Y335TB
Y335RA
Y335RB
P34 J34
J34 P1
P35 J35
J35 P1
WXXX P2

FO-7. Local Comm Interface, Logic Diagram (Sheet 1 of 3)

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.

2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.

3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

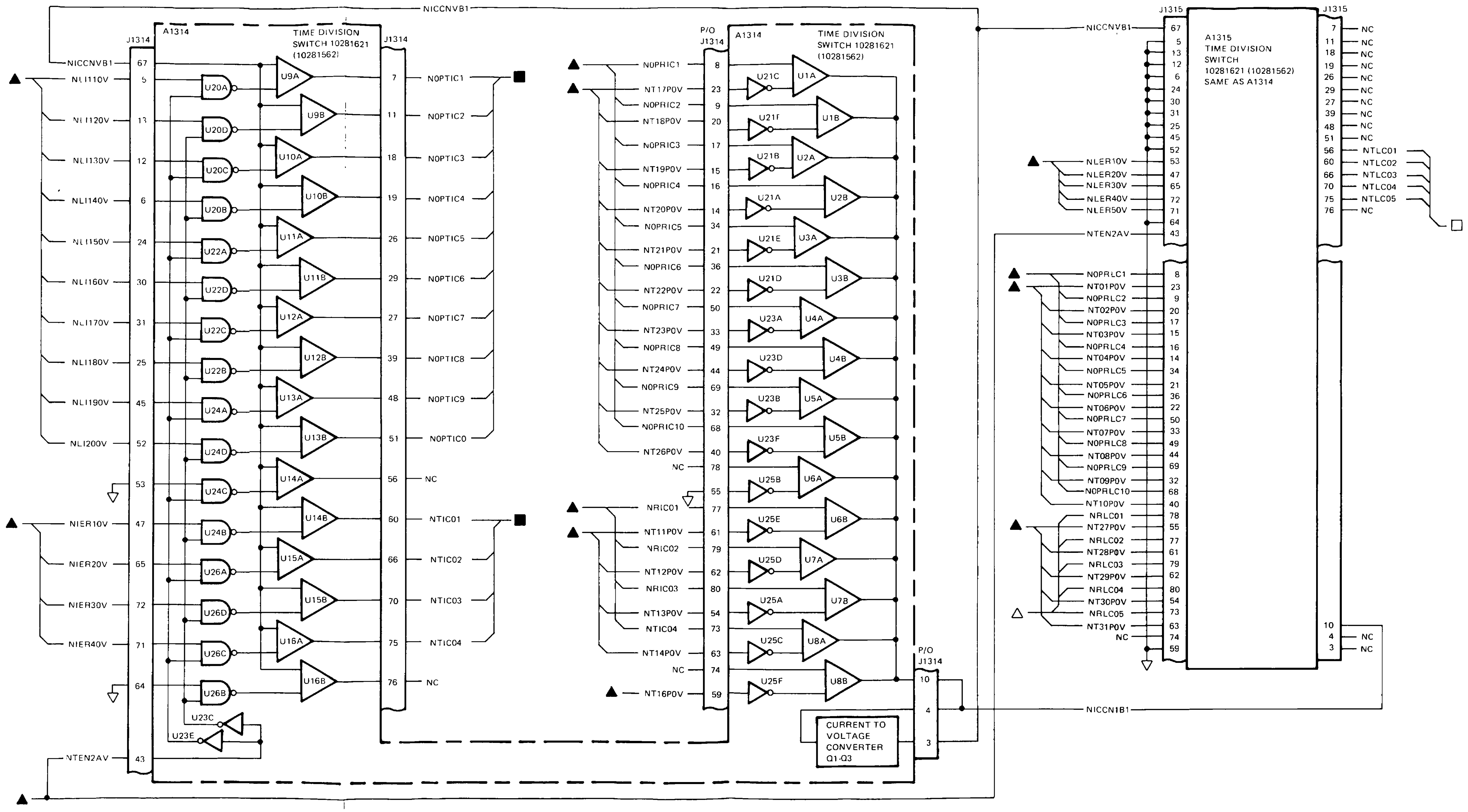
   ▲ INPUT FROM ANOTHER FIGURE
   △ INPUT FROM SAME FIGURE
   ■ OUTPUT TO ANOTHER FIGURE
   ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   □ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.

5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.

6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

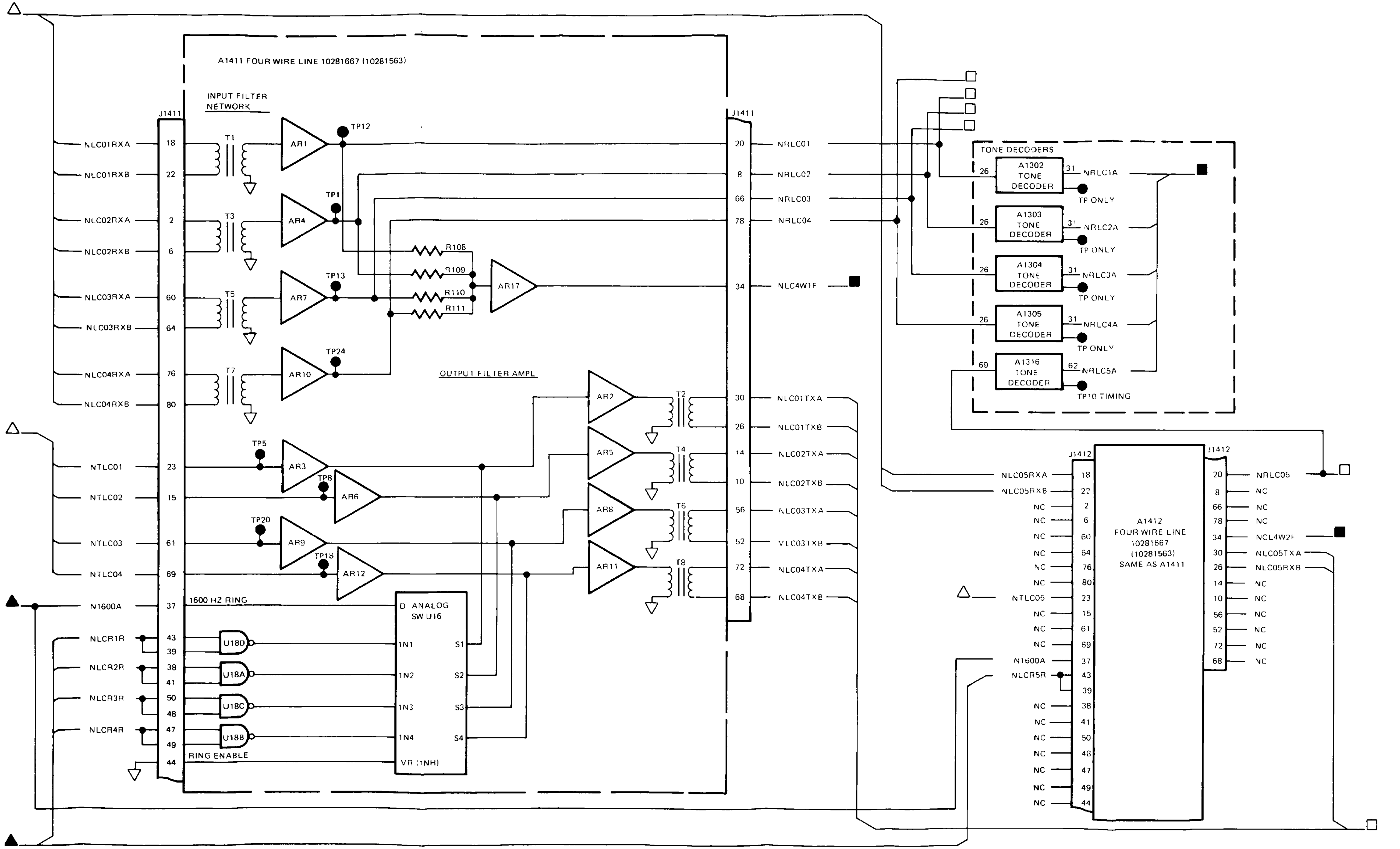
INPUTS	F/O-SH	INPUTS	F/O-SH	INPUTS	F/O-SH	OUTPUTS	F/O-SH
N1ER1OV	6-204	NT02POV	6-26-2	NT28POV	6-26-2	NTIC01	6-6-0
N1ER20V	6-204	NT03POV	6-26-2	NT29POV	6-26-2	NTIC02	6-6-0
N1ER30V	6-20.4	NT04POV	6-26-2	NT30POV	6-26-2	NTIC03	6-640
N1ER40V	6-204	NT05POV	6-26-2	NT31POV	6-26-2	NTIC04	6-6-0
NLERIOV	6-20-4	NT06POV	6-26-2	NOPRIC1	6-5-0	NOPTICO	6-5-0
NLER20V	6-204	NT07POV	6-26-2	NOPRIC2	6-5-0	NOPTICI	6-5-0
NLER30V	6-204	NT08POV	6-26-2	NOPRIC3	6-5-0	NOPTIC2	6-5-0
NLER40V	6-204	NT09POV	6-26-2	NOPRIC4	6-5-0	NOPTIC3	6-5-0
NLER50V	6-204	NT1OPOV	6-26-2	NOPRIC5	6-5-0	NOPTIC4	6-5-0
NRICO1	66-0	NT11POV	6-26-2	NOPRIC6	6-5-0	NOPTIC5	6-5-0
NRIC02	66 -0	NT12POV	6-26-2	NOPRIC7	6-5-0	NOPTIC6	6-5-0
NRIC03	66-0	NT13POV	6-26-2	NOPRIC8	6-5-0	NOPTIC7	6-5-0
NRIC04	6-6-0	NT14POV	6-26-2	NOPRIC9	6-5-0	NOPTIC8	6-5-0
NTEN2AV	6-26-1	NT16POV	6-26-2	NOPRIC10	6-5-0	NOPTIC9	6-5-0
NLI1 10V	6-20-3	NT17POV	6-26-2	NOPRLC1	6-5-0		
NLI120V	6-20-3	NT18POV	6-26-2	NOPRLC2	6-5-0		
NLI130V	6-20-3	NT19POV	6-26-2	NOPRLC3	6-5-0		
NLI140V	6-20-3	NT20POV	6-26-2	NOPRLC4	6-5-0		
NLI150V	6-20-3	NT21POV	6-26-2	NOPRLC5	6-5-0		
NLI160V	6-20-3	NT22POV	6-26-2	NOPRLC6	6-5-0		
BLI170V	6-20-3	NT23POV	6 -26-2	NOPRLC7	6-5-0		
NLI1180V	6-20-3	NT24POV	6-26-2	NOPR LC8	6-5-0		
NLI190V	6-20-3	NT25POV	6-26-2	NOPRLC9	6-5-0		
NLI200V	6-20-3	NT26POV	6-26-2	NOPRLC10	6-5-0		
NT01P0V	6-26-2	NT27POV	6-26-2				



NICCNVB1
A1314
TIME DIVISION SWITCH 10281621 (10281562)
J1314
P/O J1314
NLI110V
NLI120V
NLI130V
NLI140V
NLI150V
NLI160V
NLI170V
NLI180V
NLI190V
NLI200V
NIER10V
NIER20V
NIER30V
NIER40V
NTEN2AV
NOPTIC1
NOPTIC2
NOPTIC3
NOPTIC4
NOPTIC5
NOPTIC6
NOPTIC7
NOPTIC8
NOPTIC9
NOPTIC0
NTIC01
NTIC02
NTIC03
NTIC04
NC
U20A
U9A
U9B
U10A
U10B
U11A
U11B
U12A
U12B
U13A
U13B
U14A
U14B
U15A
U15B
U16A
U16B
U23C
U23E
NOPRIC1
NT17POV
NOPRIC2
NT18POV
NOPRIC3
NT19POV
NOPRIC4
NT20POV
NOPRIC5
NT21POV
NOPRIC6
NT22POV
NOPRIC7
NT23POV
NOPRIC8
NT24POV
NOPRIC9
NT25POV
NOPRIC10
NT26POV
NRIC01
NT11POV
NRIC02
NT12POV
NRIC03
NT13POV
NTIC04
NT14POV
NT16POV
U1A
U1B
U2A
U2B
U3A
U3B
U4A
U4B
U5A
U5B
U6A
U6B
U7A
U7B
U8A
U8B
CURRENT TO VOLTAGE CONVERTER Q1-Q3
A1315
TIME DIVISION SWITCH 10281621 (10281562) SAME AS A1314
J1315
NLER10V
NLER20V
NLER30V
NLER40V
NLER50V
NTEN2AV
NOPRLC1
NT01POV
NOPRLC2
NT02POV
NOPRLC3
NT03POV
NOPRLC4
NT04POV
NOPRLC5
NT05POV
NOPRLC6
NT06POV
NOPRLC7
NT07POV
NOPRLC8
NT08POV
NOPRLC9
NT09POV
NOPRLC10
NT10POV
NRLC01
NT27POV
NRLC02
NT28POV
NRLC03
NT29POV
NRLC04
NT30POV
NRLC05
NT31POV
NTLC01
NTLC02
NTLC03
NTLC04
NTLC05
NICCNIB1

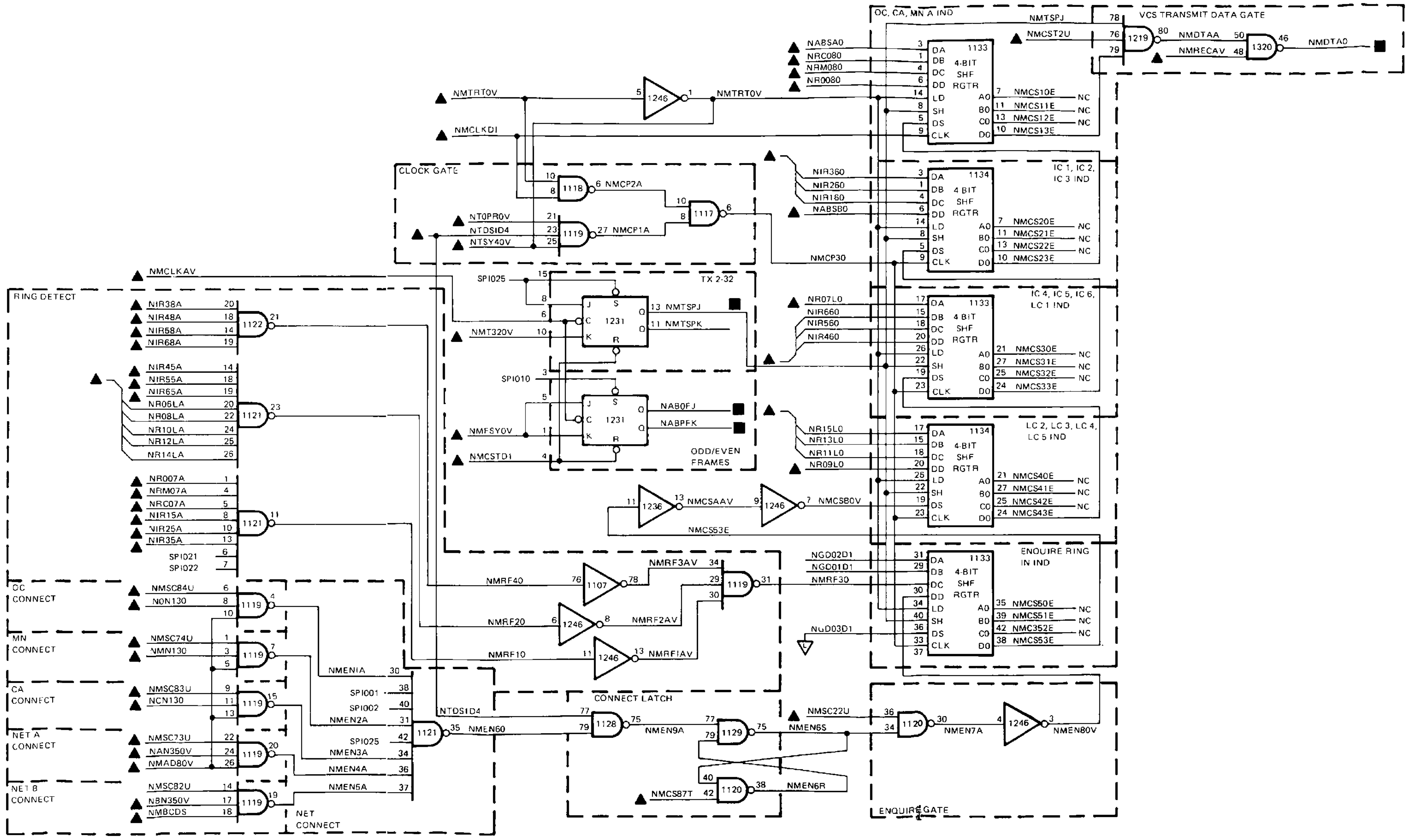
FO-7. Local Comm Interface, Logic Diagram (Sheet 2 of 3)

INPUTS	F/O-SH	OUTPUTS	F/O-SH
NLCR1R	6-18-0	NLC4W1F	6-28-4
NLCR2R	6-18-0	NLC4W2F	6-28-4
NLCR3R	6-18-0	NRLC1A	6-9-3
NLCR4R	6-18-0	NRLC2A	6-9-3
NLCR5R	6-18-0	NRLC3A	6-9-3
N1600A	6-28-2	NRLC4A	6-9-3
		NRLC5A	6-9-3


A1411 FOUR WIRE LINE 10281667 (10281563)
INPUT FILTER NETWORK
J1411
NLC01RXA
NLC01RXB
NLC02RXA
NLC02RXB
NLC03RXA
NLC03RXB
NLC04RXA
NLC04RXB
NTLC01
NTLC02
NTLC03
NTLC04
N1600A
NLCR1R
NLCR2R
NLCR3R
NLCR4R
T1
T3
T5
T7
AR1
AR4
AR7
AR10
AR17
TP12
TP1
TP13
TP24
R108
R109
R110
R111
OUTPUT FILTER AMPL
AR2
AR5
AR8
AR11
T2
T4
T6
T8
TP5
TP8
TP20
TP18
AR3
AR6
AR9
AR12
1600 HZ RING
D ANALOG SW U16
U18D
U18A
U18C
U18B
1N1
1N2
1N3
1N4
S1
S2
S3
S4
VR (1NH)
RING ENABLE
NRLC01
NRLC02
NRLC03
NRLC04
NLC4W1F
NLC01TXA
NLC01TXB
NLC02TXA
NLC02TXB
NLC03TXA
NLC03TXB
NLC04TXA
NLC04TXB
TONE DECODERS
A1302 TONE DECODER
A1303 TONE DECODER
A1304 TONE DECODER
A1305 TONE DECODER
A1316 TONE DECODER
NRLC1A
NRLC2A
NRLC3A
NRLC4A
NRLC5A
TP ONLY
TP10 TIMING
J1412
A1412 FOUR WIRE LINE 10281667 (10281563) SAME AS A1411
NLC05RXA
NLC05RXB
NTLC05
N1600A
NLCR5R
NC
NRLC05
NCL4W2F
NLC05TXA
NLC05RXB

FO-7. Local Comm Interface, Logic Diagram (Sheet 3 of 3)

INPUTS	F/O - SH	INPUTS	F/O - SH	OUTPUTS	F/O - SH
NABSAO	6-13-0	NMFSYOV	6-27-2	NABOFJ	6-13-0
NABSBO	6-13-0	NMN130	6-21-4	NABOFK	6-13-0
NAN350V	6-14-1	NMRECAV	6-27-1	NMDTAO	6-27-3
NBN350V	6-14-1	NMSC22U	6-11-2	NMTSPJ	6-9-2
NCN130	6-21-3	NMSC73U	6-11-3		
NIR15A	6-17-2	NMSC74U	6-11-3		
NIR25A	6 17-2	NMSC82U	6-11-3		
NIR35A	6-17-2	NMSC83U	6-11-3		
NIR38A	6-17-1	NMSC84U	6-11-3		
NIR45A	6-17-2	NMT1TAV	6-27-1		
NIR48A	6 17-1	NMT320V	6-27-1		
NIR55A	6-17-2	NRC07A	6-9-2		
NIR58A	6-17-1	NRC080	6-9.2		
NIR65A	6-17-2	NRM07A	6-9-2		
NIR68A	6-17-1	NRM080	6-9-2		
NIR160	6-17-2	NRO07A	6-9-2		
NIR260	6-17-2	NR0080	6-9-2		
NIR360	6-17-2	NRO6LA	6-9-3		
NIR460	6-17-2				
NIR560	6-17-2	NR08LA	6-9.3		
NIR660	6-17-2	NR10OLA	6-9-3		
NMAD80V	6-11-2	NR12LA	6-9-3		
NMBCDS	6-21-1	NR14LA	6-9-3		
NMCLKAV	6-27-1	NR07LO	6-9 3		
NMCLKD1	6-27-1	NR09LO	6-9-3		
		NR11LO	6-9-3		
NMCSTD1	6-27-2	NR13LO	6-9-3		
NMCST2U	6-27-1	NR15LO	6-9-3		
NMCS87T	6-27-1	NTDS1 D4	6-26-1		
		NTSY40V	6-26-3		
		NTOPROV	6-26-3		
		NON130	6-21-3		



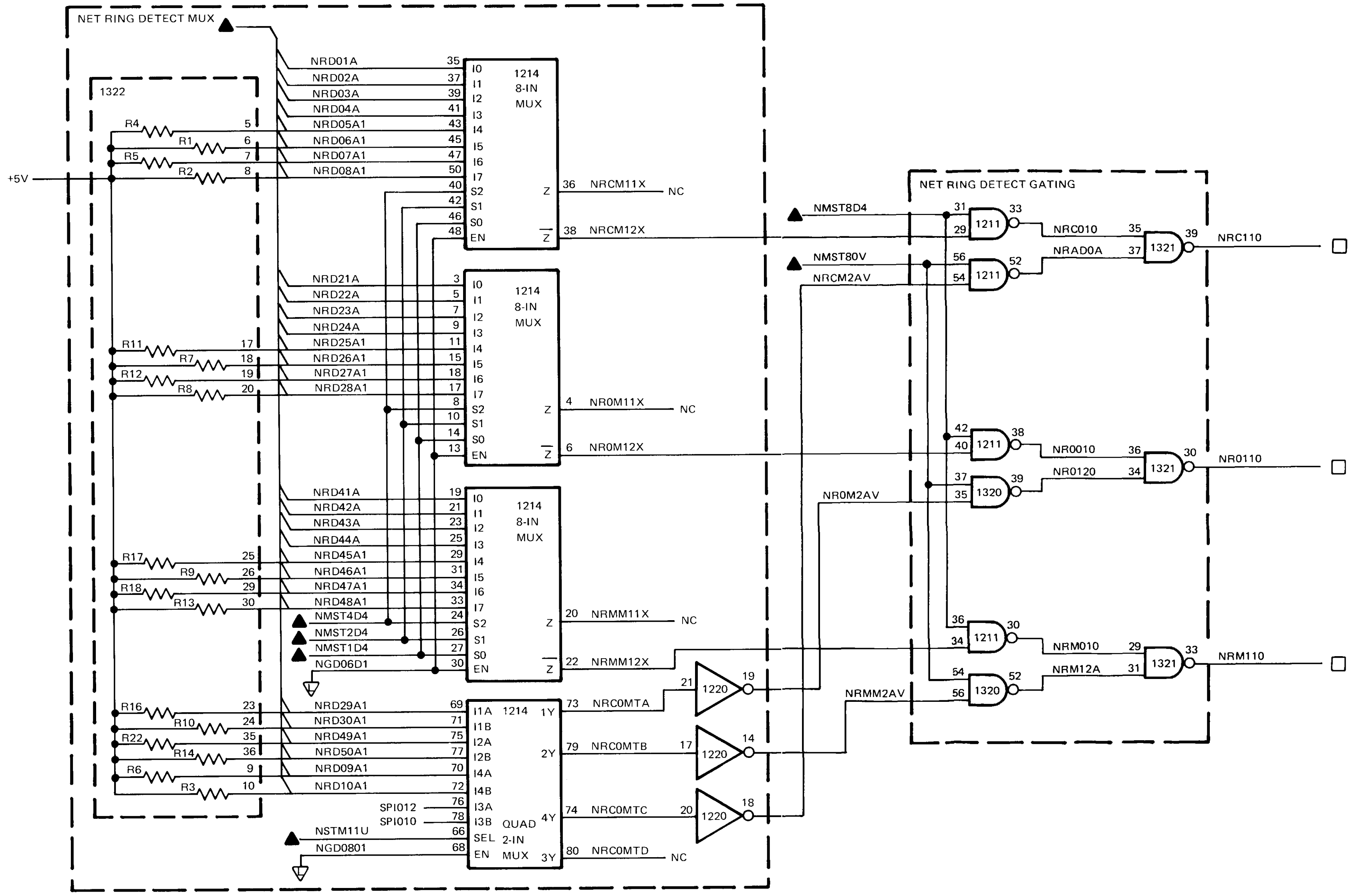
OC, CA, MN A IND
VCS TRANSMIT DATA GATE
NMTSPJ
NMCST2U
1219
NMDTAA
NMRECAV
1320
NMDTA0
NABSA0
NRC080
NRM080
NR0080
1133
4-BIT SHF RGTR
NMCS10E
NMCS11E
NMCS12E
NMCS13E
NC
NMTRTOV
1246
NMCLKDI
CLOCK GATE
1118
NMCP2A
1117
NTOPROV
NTDSID4
NTSY40V
1119
NMCP1A
NIR360
NIR260
NIR160
NABSB0
1134
4 BIT SHF RGTR
IC 1, IC 2, IC 3 IND
NMCS20E
NMCS21E
NMCS22E
NMCS23E
NMCP30
NMCLKAV
RING DETECT
NIR38A
NIR48A
NIR58A
NIR68A
1122
NIR45A
NIR55A
NIR65A
NR06LA
NR08LA
NR10LA
NR12LA
NR14LA
1121
NR007A
NRM07A
NRC07A
NIR15A
NIR25A
NIR35A
SPI021
SPI022
SPI025
TX 2-32
1231
NMTSPJ
NMTSPK
NMT320V
SPI010
NABOFJ
NABPFK
NMFSY0V
NMCSTD1
ODD/EVEN FRAMES
NR07L0
NIR660
NIR560
NIR460
IC 4, IC 5, IC 6, LC 1 IND
NMCS30E
NMCS31E
NMCS32E
NMCS33E
NR15L0
NR13L0
NR11L0
NR09L0
LC 2, LC 3, LC 4, LC 5 IND
NMCS40E
NMCS41E
NMCS42E
NMCS43E
1236
NMCSAAV
NMCSB0V
NMCS53E
NGD02D1
NGD01D1
NMRF30
ENQUIRE RING IN IND
NMCS50E
NMCS51E
NMC352E
NMCS53E
NGD03D1
NMRF40
1107
NMRF3AV
NMRF20
NMRF2AV
NMRF10
NMRF1AV
OC CONNECT
NMSC84U
NON130
MN CONNECT
NMSC74U
NMN130
CA CONNECT
NMSC83U
NCN130
NET A CONNECT
NMSC73U
NAN350V
NMAD80V
NET B CONNECT
NMSC82U
NBN350V
NMBCDS
NET CONNECT
NMEN1A
SPI001
SPI002
NMEN2A
NMEN3A
NMEN4A
NMEN5A
NTDS1D4
NMEN60
CONNECT LATCH
1128
NMEN9A
1129
NMEN6S
NMCS87T
1120
NMEN6R
NMSC22U
NMEN7A
NMEN80V
ENQUIRE GATE

FO-8. Central-to-Station, Logic Diagram

NOTES UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS
   - ▲ INPUT FROM ANOTHER FIGURE
   - △ INPUT FROM SAME FIGURE
   - ■ OUTPUT TO ANOTHER FIGURE
   - ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   - □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS, REFER TO TABLE 6-4 FOR COMMON LISTING
9. ▽ INDICATES AN ACTIVE LOGIC LOW OR ZERO

INPUTS	F/O SH	INPUTS	F/O - SH
NMST1D4	6-27-1	NRD27A1	6-5-0
NMST2D4	6 27-1	NRD28A1	6-5-0
NMST4D4	6-27 1	NRD29A1	6-5-0
NMST8D4	6-27-1	NRD30A1	6-5-0
NMST80V	6-27-1	NRD45A1	6-5-0
NRD01A	6-5-0	NRD46A1	6-5-0
NRD02A	6-5 0	NRD47A1	6 5-0
NRD03A	6-5-0	NRD48A1	6-5-0
NRD04A	6-5-0	NRD49A1	6-5-0
NRD21A	6-5-0	NRD50A1	6-5-0
NRD22A	6-5-0	NSTM11U	6-27-1
NRD23A	6-5-0		
NRD24A	6-5-0		
NRD41A	6-5-0		
NRD42A	6-5-0		
NRD43A	6-5-0		
NRD44A	6-5-0		
NRD05A1	6-5-0		
NRDO6A1	6-5-0		
NRD07A1	6-5-0		
NRD08A1	6-5-0		
NRDO9A1	6-5-0		
NRD10A1	6-5-0		
NRD25A1	6-5-0		
NRD26A1	6-5-0		

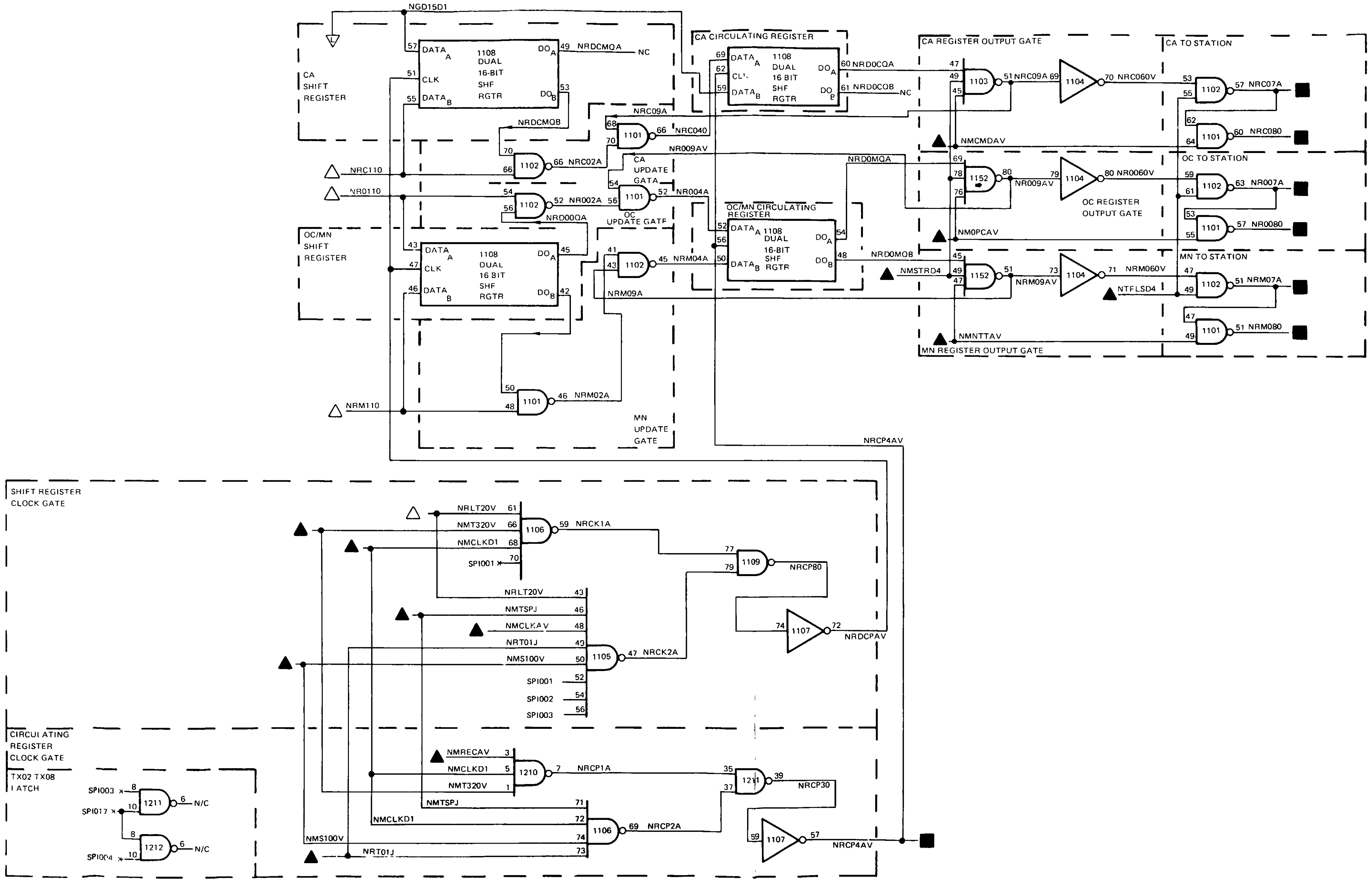

NET RING DETECT MUX
1322
+5V
R4
R1
R5
R2
R11
R7
R12
R8
R17
R9
R18
R13
R16
R10
R22
R14
R6
R3
NRD01A
NRD02A
NRD03A
NRD04A
NRD05A1
NRD06A1
NRD07A1
NRD08A1
1214 8-IN MUX
NRCM11X
NC
NRCM12X
NRD21A
NRD22A
NRD23A
NRD24A
NRD25A1
NRD26A1
NRD27A1
NRD28A1
1214 8-IN MUX
NR0M11X
NC
NR0M12X
NRD41A
NRD42A
NRD43A
NRD44A
NRD45A1
NRD46A1
NRD47A1
NRD48A1
NMST4D4
NMST2D4
NMST1D4
NGD06D1
1214 8-IN MUX
NRMM11X
NC
NRMM12X
NRD29A1
NRD30A1
NRD49A1
NRD50A1
NRD09A1
NRD10A1
SPI012
SPI010
NSTM11U
NGD0801
1214 QUAD 2-IN MUX
NRCOMTA
NRCOMTB
NRCOMTC
NRCOMTD
NC
1220
1220
1220
NET RING DETECT GATING
NMST8D4
NMST80V
NRCM2AV
NR0M2AV
NRMM2AV
1211
1211
1211
1320
1211
1320
NRC010
NRAD0A
NR0010
NR0120
NRM010
NRM12A
1321
1321
1321
NRC110
NR0110
NRM110

NOTES UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS
   - ▲ INPUT FROM ANOTHER FIGURE
   - △ INPUT FROM SAME FIGURE
   - ■ OUTPUT TO ANOTHER FIGURE
   - ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   - □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS, REFER TO TABLE 6-4 FOR COMMON LISTING
9. ▽ INDICATES AN ACTIVE LOGIC LOW OR ZERO

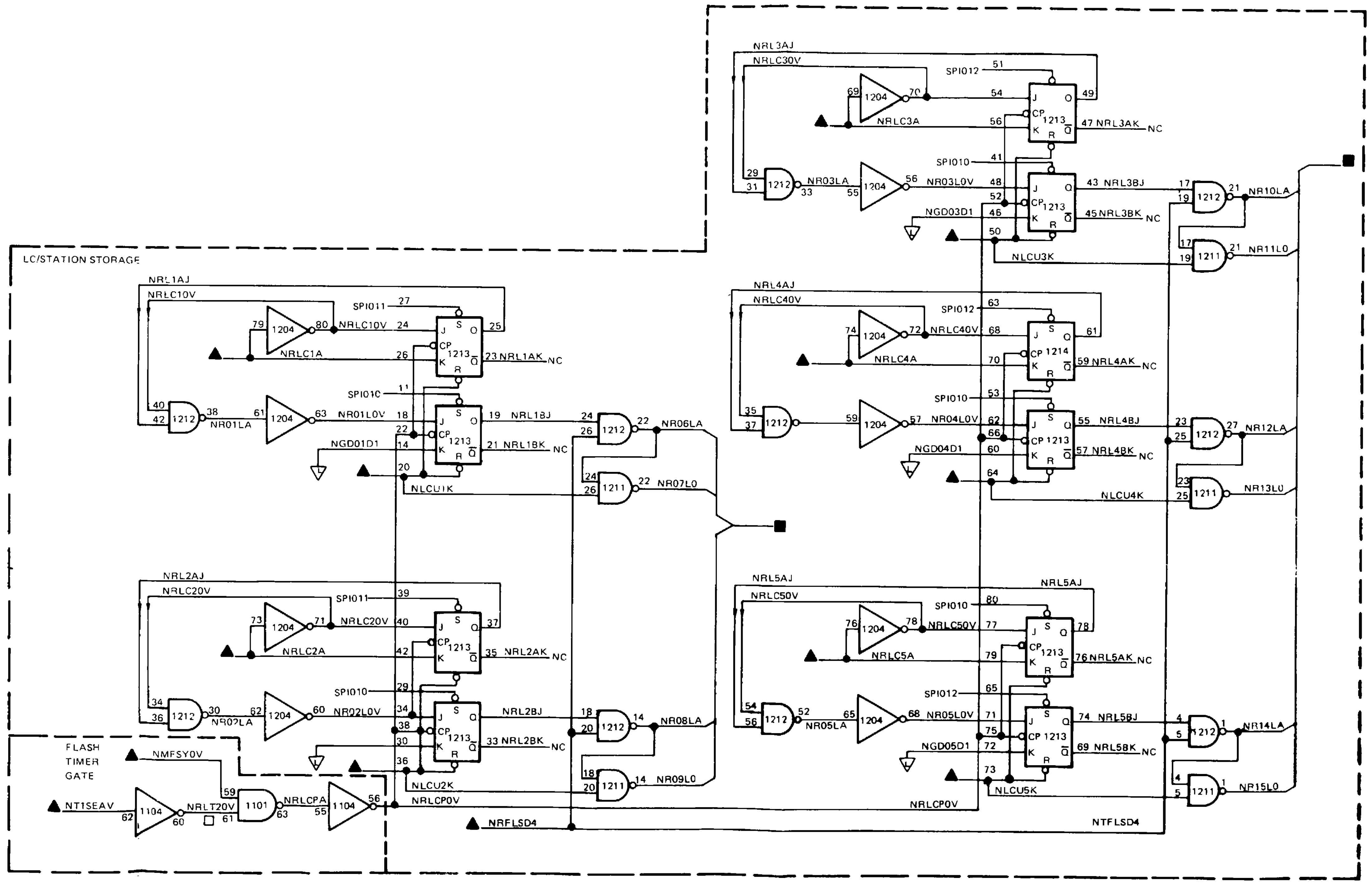
FO-9. Ring Detector Storage, Logic Diagram (Sheet 1 of 3)

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NMCLKAV	6-27-1	NRCP4AV	6-22-0
NMCLKD1	6-27-1	NRC07A	6-8-0
NMCMDAV	6-11-3	NRC080	6-8-0
		NRM07A	6-8-0
NMNTTAV	6-11-3	NRM080	6-8-0
NMOPCAV	6-11-3	NR007A	68-0
NMRECAV	6-27-1	NR0080	648-0
NMSTRD4	6-27-1		
NMS100V	6-27-2		
NMTSPJ	6-8-0		
NMT320V	6-27-1		
NTFLSD4	6-27-2		
NRT01J	6-27-1		


NGD15D1
CA SHIFT REGISTER
OC/MN SHIFT REGISTER
1108 DUAL 16-BIT SHF RGTR
DATA A
CLK
DATA B
DO A
DO B
NRDCMQA
NC
NRDCMQB
NRC110
NR0110
NRM110
NRC02A
NR002A
NRD0QA
NRC09A
NRC040
NR009AV
NR004A
CA UPDATE GATA
OC UPDATE GATE
MN UPDATE GATE
NRM04A
NRM09A
NRM02A
CA CIRCULATING REGISTER
NRDCQA
NRDCOB
OC/MN CIRCULATING REGISTER
NRDOMQA
NRDOMOB
NRCP4AV
CA REGISTER OUTPUT GATE
CA TO STATION
NRC09A
NRC060V
NRC07A
NRC080
NMCMDAV
OC TO STATION
NR009AV
NR0060V
OC REGISTER OUTPUT GATE
NR007A
NR0080
NMOPCAV
MN TO STATION
NMSTRD4
NRM09AV
NRM060V
NTFLSD4
NRM07A
NRM080
NMNTTAV
MN REGISTER OUTPUT GATE
SHIFT REGISTER CLOCK GATE
NRLT20V
NMT320V
NMCLKD1
SPI001
NRCK1A
NRCP80
NMTSPJ
NMCLKAV
NRT01J
NMS100V
SPI002
SPI003
NRCK2A
NRDCPAV
CIRCULATING REGISTER CLOCK GATE
TX02 TX08 LATCH
SPI017
SPI004
N/C
NMRECAV
NRCP1A
NRCP30
NRCP2A
NRCP4AV
1101
1102
1103
1104
1105
1106
1107
1109
1152
1210
1211
1212

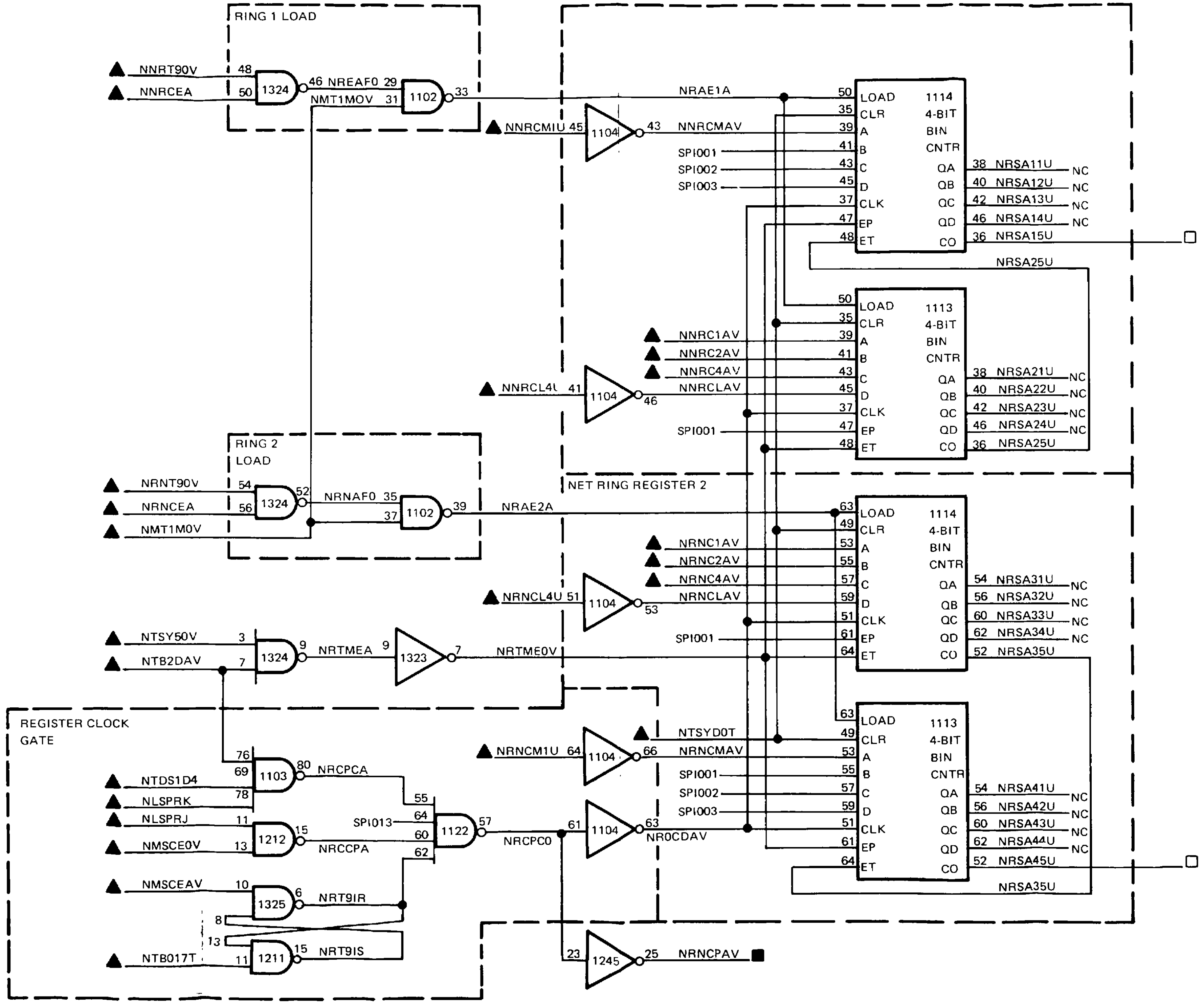
FO-9. Ring Detector Storage, Logic Diagram (Sheet 2 of 3)

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NMFSYOV	6-27-2	NR06LA	6-8-0
NRLC1A	6-7-3	NR08LA	6-8-0
N R LC2A	6-7-3	NR07LO	6-8-0
NRLC3A	6-7-3	NR09LO	6-8-0
NRLC4A	6-7-3	NR10LA	6-8-0
NRLC5A	6-7-3	NR12LA	6-80
NTFLSD4	6-27-2	NR14LA	6-80
NLCU1K	6-19-0	NR11LO	6-8-0
NLCU2K	6-19-0	NR13LO	6-8-0
NLCU3K	6-19-0	NR15LO	6-8-0
NLCU4K	6-19-0		
NLCU5K	6-19-0		
NT1SEAV	6-26-3		


LC/STATION STORAGE
FLASH TIMER GATE
NRL1AJ
NRLC10V
NRLC1A
NR01LA
NR01L0V
NRL1AK
NRL1BJ
NRL1BK
NGD01D1
NLCU1K
NR06LA
NR07L0
NRL2AJ
NRLC20V
NRLC2A
NR02LA
NR02L0V
NRL2AK
NRL2BJ
NRL2BK
NLCU2K
NR08LA
NR09L0
NMFSY0V
NT1SEAV
NRLT20V
NRLCPA
NRLCP0V
NRFLSD4
NRL3AJ
NRLC30V
NRLC3A
NR03LA
NR03L0V
NRL3AK
NRL3BJ
NRL3BK
NGD03D1
NLCU3K
NR10LA
NR11L0
NRL4AJ
NRLC40V
NRLC4A
NR04L0V
NRL4AK
NRL4BJ
NRL4BK
NGD04D1
NLCU4K
NR12LA
NR13L0
NRL5AJ
NRLC50V
NRLC5A
NR05LA
NR05L0V
NRL5AK
NRL5BJ
NRL5BK
NGD05D1
NLCU5K
NR14LA
NR15L0
NTFLSD4
SPI010
SPI011
SPI012
1204
1212
1211
1213
1214
1104
1101
NC

FO-9. Ring Detector Storage, Logic Diagram (Sheet 3 of 3)

INPUTS	F/O- SH	OUTPUTS	F/O - SH
NLSPRJ	6-19-0	NRNCPAV	6-12-1
NLSPRK	6-19-0		
NMSCEAV	6-11-2		
NMSCEOV	6-11-2		
NMT1MOV	6-26-3		
NNRCEA	6-12-1		
NNRCL4U	6-12 1		
NNRCM1U	6-12 1		
NNRC1AV	6 12-1		
NNRC2AV	6-12-1		
NNRC4AV	6-12 1		
NNRT90V	6-12-1		
NRNCEA	6-12-1		
NRNCL4U	6-12-1		
NRNCM1U	6-12-1		
NRNC1AV	6-12-1		
NRNC2AV	6-12-1		
NRNC4AV	6-12-1		
NRNT90V	6-12-1		
NTBO17T	6-26-2		
NTB2DAV	6-26-2		
NTDS1D4	6-26 1		
NTSYDOT	6-26-3		
NTSY50V	6-26-3		



RING 1 LOAD
NNRT90V
NNRCEA
1324
NREAF0
NMT1MOV
1102
NRAE1A
NNRCM1U
1104
NNRCMAV
SPI001
SPI002
SPI003
LOAD
CLR
A
B
C
D
CLK
EP
ET
1114
4-BIT
BIN
CNTR
QA
QB
QC
QD
CO
NRSA11U
NRSA12U
NRSA13U
NRSA14U
NRSA15U
NC
NRSA25U
1113
NNRC1AV
NNRC2AV
NNRC4AV
NNRCL4U
NNRCLAV
NRSA21U
NRSA22U
NRSA23U
NRSA24U
NET RING REGISTER 2
RING 2 LOAD
NRNT90V
NRNCEA
NMT1MOV
NRNAF0
NRAE2A
NRNC1AV
NRNC2AV
NRNC4AV
NRNCL4U
NRNCLAV
NRSA31U
NRSA32U
NRSA33U
NRSA34U
NRSA35U
NTSY50V
NTB2DAV
NRTMEA
1323
NRTME0V
REGISTER CLOCK GATE
NTSYDOT
NRNCM1U
NRNCMAV
NTDS1D4
NLSPRK
NLSPRJ
NMSCE0V
1103
NRCPCA
1212
NRCCPA
SPI013
1122
NRCPC0
NR0CDAV
NMSCEAV
1325
NRT9IR
NTB017T
1211
NRT9IS
1245
NRNCPAV
NRSA41U
NRSA42U
NRSA43U
NRSA44U
NRSA45U

FO-10. Operator Audio Ring and Feedback, Logic diagram (Sheet 1 of 2)

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.

2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.

3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

   ▲ INPUT FROM ANOTHER FIGURE
   △ INPUT FROM SAME FIGURE
   □ OUTPUT TO ANOTHER FIGURE
   ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   ■ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6- 2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.

5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.

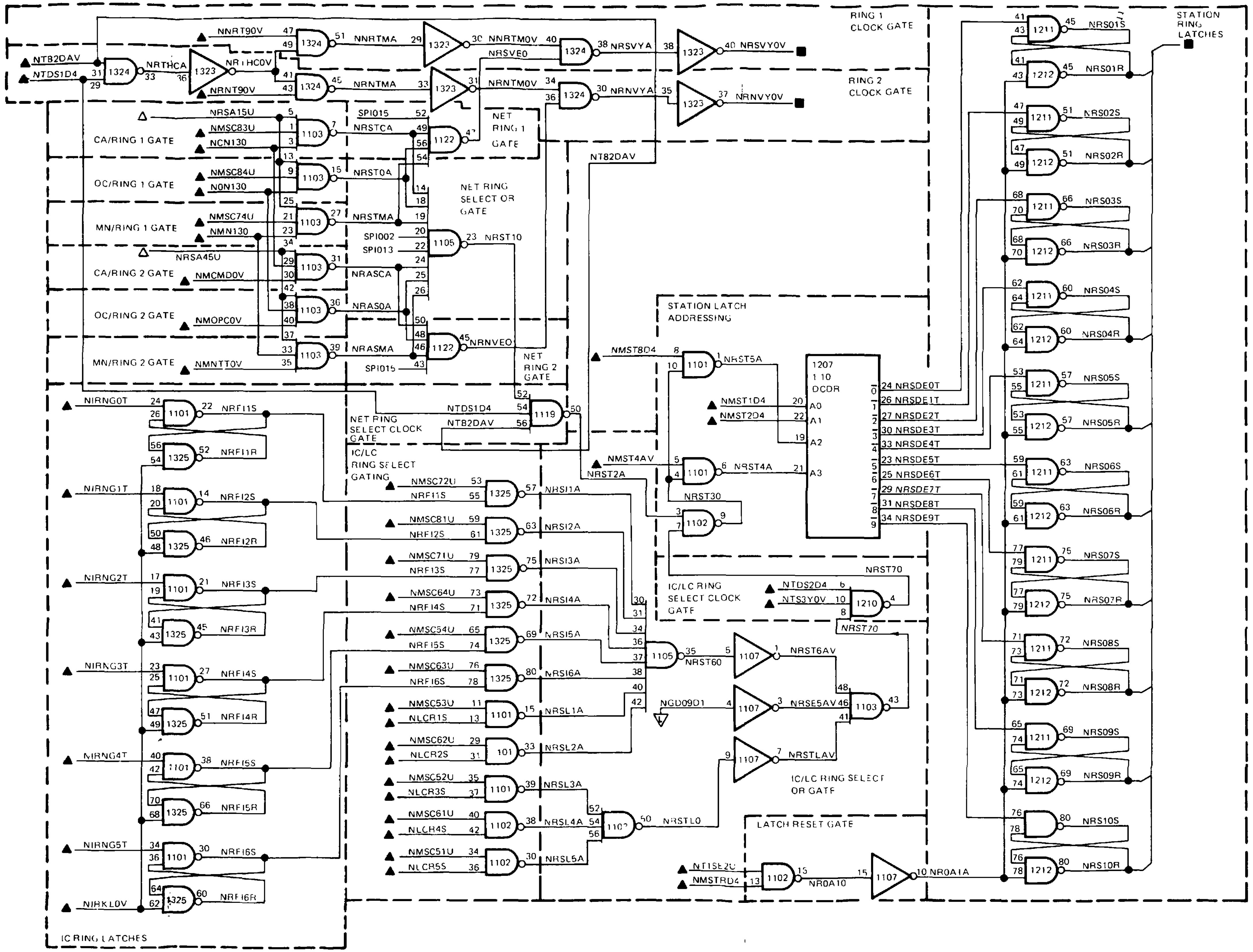
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.

8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.

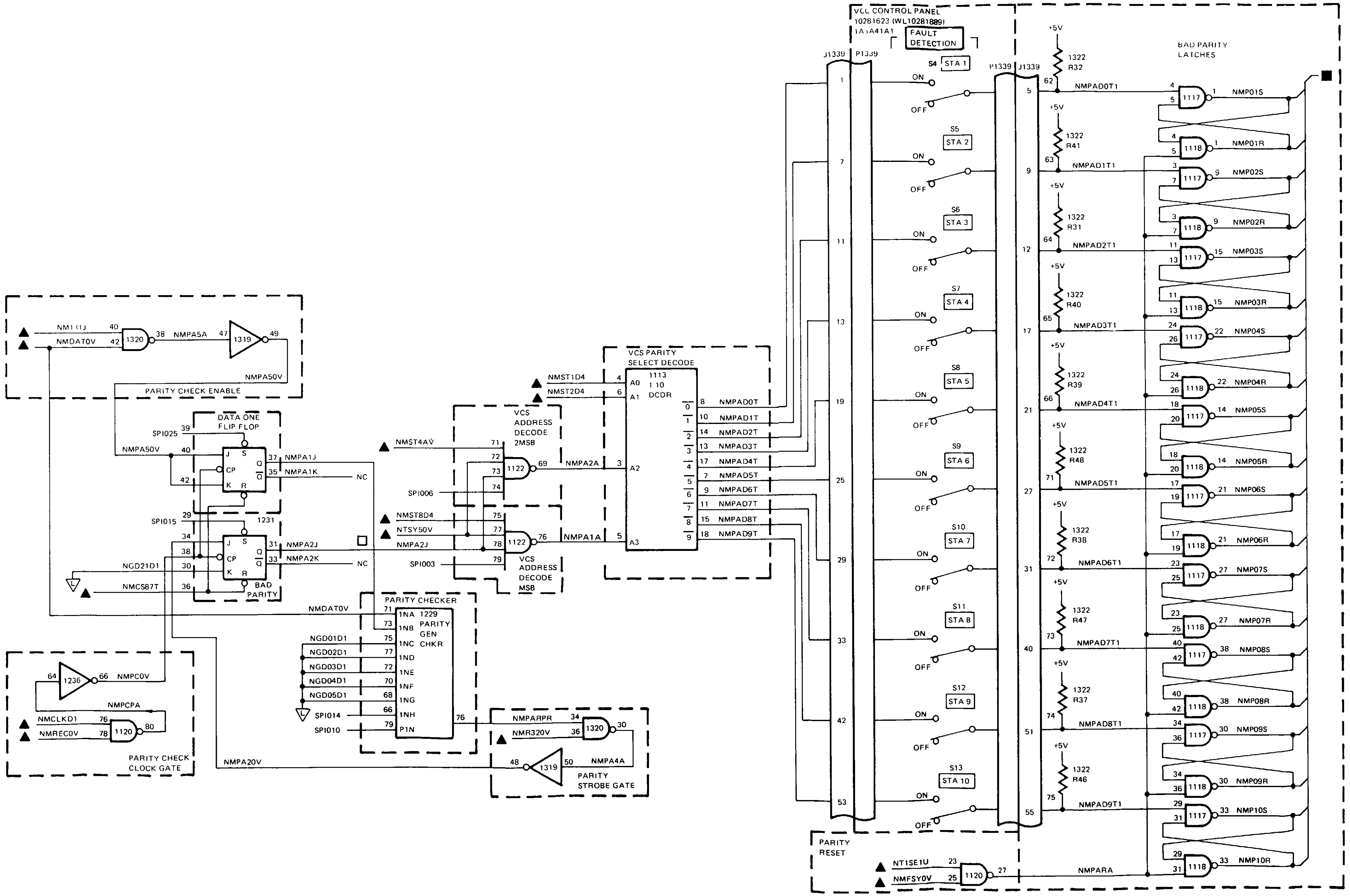
9. ▽ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

INPUTS	F/O - SH	INPUTS	F/O - SH
NCN13O	6-21-3	NMSC63U	6-11-3
NIRKLOV	6-18-0	NMSC64U	6-11-3
NIRNGOT	6-17-1	NMSC71U	6U11-3
NIRNG1T	6-17-1	NMSC72U	6-11-3
NIRNG2T	6-17-1	NMSC74U	6-11-3
NIRNG3T	6-17-1	NMSC81U	6-11-3
NIRNG4T	6-17-1	NMSC83U	6-11-3
NIRNG5T	6-17-1	NMSC84U	6-11-3
NLCR1S	6-18-0	NMSTRD4	6-27-2
NLCR2S	6-18-0	NMST1D4	6-27-1
NLCR3S	6-18-0	NMST2D4	6-27-1
NLCR4S	6-18-0	NMST4AV	6-27-1
NLCR5S	6-18-0	NMST8D4	6-27-1
NMCMDOV	6-11-3	NRNT90V	6-12-1
NMNTT0V	6-11-3	NTB2DAV	6-26-2
NMN130	6-21-4	NTDS1D4	6-26-1
NMOPC0V	6-11-3	NTDS2D4	6-26-1
NNRT90V	6-12-1	NTS3YOV	6-26-3
NMSC51U	6-11-3	NT1SE2U	6-26-3
NMSC52U	6-11-3	NON130	6-21-3
NMSC53U	6-11-3	OUTPUTS	F/O - SH
NMSC54U	6-11-3	NRS01R	6-5-0
NMSC61 U	6-11-3	NRS02R	6-5-0
NMSC62U	6-11-3	NRS03R	6-5-0
NRS04R	6-5-0		
NRS05R	6-5-0		
NRS06R	6-5-0		
NRS07R	6-5-0		
NRS08R	6-5-0		
NRS09R	6-5-0		
NRS10OR	6-5-0		
NRNVYOV	6-12-1		
NRSVYOV	6-12-1		


RING 1 CLOCK GATE
RING 2 CLOCK GATE
STATION RING LATCHES
NTB2DAV
NTDS1D4
NNRT90V
NRNT90V
NRTHCA
NRTHCOV
NNRTMA
NRNTMA
NNRTMOV
NRNTMOV
NRSVE0
NRSVYA
NRNVYA
NRSVYOV
NRNVYOV
CA/RING 1 GATE
OC/RING 1 GATE
MN/RING 1 GATE
CA/RING 2 GATE
OC/RING 2 GATE
MN/RING 2 GATE
NRSA15U
NMSC83U
NCN130
NMSC84U
NON130
NMSC74U
NMN130
NRSA45U
NMCMD0V
NMOPC0V
NMNTT0V
NET RING 1 GATE
NET RING SELECT OR GATE
NET RING 2 GATE
NET RING SELECT CLOCK GATE
NRSTCA
NRST0A
NRSTMA
NRASCA
NRAS0A
NRASMA
NRST10
NRNVE0
SPI015
SPI002
SPI013
NT82DAV
NTDS1D4
STATION LATCH ADDRESSING
NMST8D4
NRST5A
NMST1D4
NMST2D4
NMST4AV
NRST4A
NRST2A
NRST30
1207 1 10 DCDR
A0
A1
A2
A3
NRSDE0T
NRSDE1T
NRSDE2T
NRSDE3T
NRSDE4T
NRSDE5T
NRSDE6T
NRSDE7T
NRSDE8T
NRSDE9T
NRS01S
NRS01R
NRS02S
NRS02R
NRS03S
NRS03R
NRS04S
NRS04R
NRS05S
NRS05R
NRS06S
NRS06R
NRS07S
NRS07R
NRS08S
NRS08R
NRS09S
NRS09R
NRS10S
NRS10R
IC/LC RING SELECT GATING
IC/LC RING SELECT CLOCK GATE
NTDS2D4
NTS3Y0V
NRST70
NIRNG0T
NIRNG1T
NIRNG2T
NIRNG3T
NIRNG4T
NIRNG5T
NIRKL0V
NRFI1S
NRFI1R
NRFI2S
NRFI2R
NRFI3S
NRFI3R
NRFI4S
NRFI4R
NRFI5S
NRFI5R
NRFI6S
NRFI6R
IC RING LATCHES
NMSC72U
NMSC81U
NMSC71U
NMSC64U
NMSC54U
NMSC63U
NMSC53U
NMSC62U
NMSC52U
NMSC61U
NMSC51U
NLCR1S
NLCR2S
NLCR3S
NLCR4S
NLCR5S
NHSI1A
NRSI2A
NRSI3A
NRSI4A
NRSI5A
NRSI6A
NRSL1A
NRSL2A
NRSL3A
NRSL4A
NRSL5A
NRST60
NRST6AV
NGD09D1
NRSE5AV
NRSTLAV
NRSTL0
IC/LC RING SELECT OR GATE
LATCH RESET GATE
NT1SE2U
NMSTRD4
NR0A10
NR0A1A

FO-10. Operator Audio Ring and Feedback, Logic Diagram (Sheet 2 of 2)

INPUTS	F/O-SH	OUTPUTS	F/O-SH
NMCLKD1	6-27-1	NMP01R	6-28-2
NMCS87T	6-27-1	NMPO2R	6-28-2
NMDATOV	6-27-3	NMP03R	6-28-2
NMFSYOV	6-27-2	NMP04R	6-28-2
NMRECOV	6-27-1	NMP05R	6-28-2
NMR320V	6-27-1	NMPO6R	6-28-2
NMST1 D4	6-27-1	NMP07R	6-28-2
NMST2D4	6-27-1	NMP08R	6-28-2
NMST4AV	6-27-1	NMP09R	6-28-2
NMST8D4	6-27-1	NMP10OR	6-28-2
NM131J	6-27-1	NMP01S	628 1
NTSY50V	6 26-3	NMP02?S	6 28-1
NT1SE1U	6-26-3	NMP03S	6 281
NMP04S	6 28 1		
NMP05S	6 28 1		
NMP06S	6 28 1		
NMP07S	6 28 1		
NMP08S	6 28-1		
NMP09S	6-28 1		
NMP10S	6 28 1		


PARITY CHECK ENABLE
NM131J
NMDATOV
NMPA5A
NMPA5OV
DATA ONE FLIP FLOP
SPI025
SPI015
NMPA1J
NMPA1K
NMPA2J
NMPA2K
NC
BAD PARITY
NGD21D1
NMCS87T
VCS ADDRESS DECODE 2MSB
VCS ADDRESS DECODE MSB
NMST4AV
NMST8D4
NTSY50V
SPI006
SPI003
NMPA2A
NMPA1A
NMST1D4
NMST2D4
VCS PARITY SELECT DECODE
1113 1 10 DCDR
PARITY CHECKER
1229 PARITY GEN CHKR
NGD01D1
NGD02D1
NGD03D1
NGD04D1
NGD05D1
SPI014
SPI010
NMPARPR
NMR320V
NMPA4A
PARITY STROBE GATE
NMPA20V
NMPC0V
NMPCPA
NMCLKD1
NMRECOV
PARITY CHECK CLOCK GATE
VCC CONTROL PANEL 10281623 (WL10281889) 1A3A41A1
FAULT DETECTION
J1339
P1339
S4 STA 1
S5 STA 2
S6 STA 3
S7 STA 4
S8 STA 5
S9 STA 6
S10 STA 7
S11 STA 8
S12 STA 9
S13 STA 10
ON
OFF
+5V
1322
NMPAD0T
NMPAD1T
NMPAD2T
NMPAD3T
NMPAD4T
NMPAD5T
NMPAD6T
NMPAD7T
NMPAD8T
NMPAD9T
NMPAD0T1
NMPAD1T1
NMPAD2T1
NMPAD3T1
NMPAD4T1
NMPAD5T1
NMPAD6T1
NMPAD7T1
NMPAD8T1
NMPAD9T1
BAD PARITY LATCHES
NMP01S
NMP01R
NMP02S
NMP02R
NMP03S
NMP03R
NMP04S
NMP04R
NMP05S
NMP05R
NMP06S
NMP06R
NMP07S
NMP07R
NMP08S
NMP08R
NMP09S
NMP09R
NMP10S
NMP10R
PARITY RESET
NT1SE1U
NMFSY0V
NMPARA

NOTES: UNLESS OTHERWISE SPECIFIED

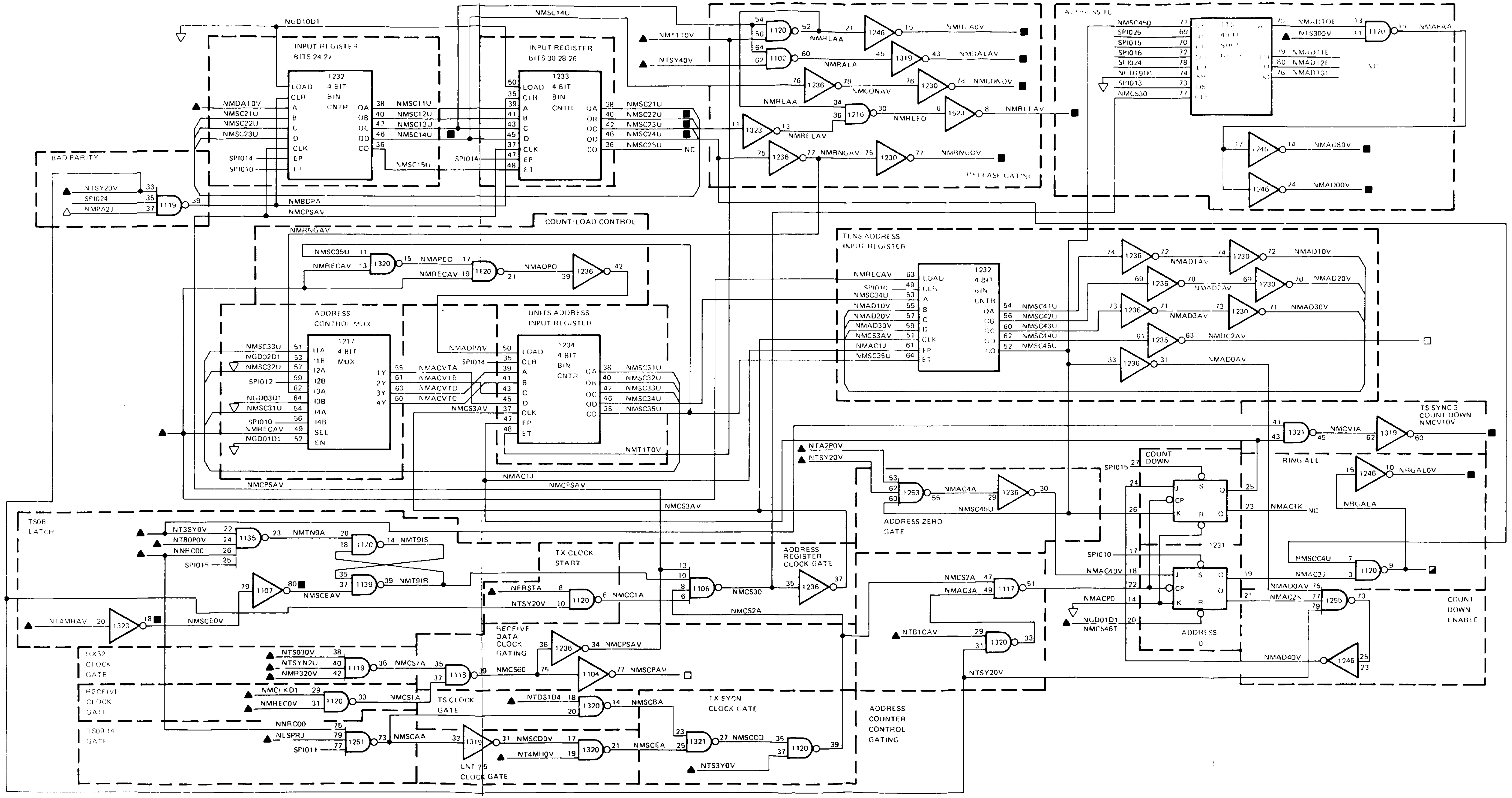
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲ INPUT FROM ANOTHER FIGURE
△ INPUT FROM SAME FIGURE
☐ OUTPUT TO ANOTHER FIGURE
◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
■ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6- 2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ▽ INDICATES AN ACTIVE LOGIC LOW OR ZERO.
10. ▭ INDICATES EQUIPMENT MARKINGS

FO-11. Central Input register, Logic diagram (Sheet 1 of 3)

INPUTS	F/O SH	OUTPUTS	F/O - SH
NFRSTA	6-26-2	NMADOOV	6-14-1 6-17-1 6-21-1
NLSPRJ	6-19-0		
NMCLKD1	6-17-1	NMAD2AV	6-18-0
NMDATOV	6-27-3	NMAD80V	6-8-0
NMCS46T	6-27-1	MMCV10V	6-12-1
NMRECAV	6-27-1	NMCONOV	6-21-1
NMRECOV	6-27-1	NMRALAV	6-22-0 6-21-1
NMR320V	6-27-1		
NMT1TOV	6-27-1		
		NMRLAOV	6-14-1
NNRCOO	6-12-1		
		NMRLEAV	6-22-0
NTA2POV	6-26-2		
		NMRNGOV	6-12-1
NTB1CAV	6-26-2		
		NMSCEAV	6-10-1
NTDS1 D4	6-26-1		
		NMSCEOV	6-10-1
NTSYN2U	6-26-3		
		NMSC14U	6-21-1 6-14-1
NTSY20V	6-26-3		
NTSY40V	6-26-3	NMSC22U	6-8-0
		NMSC23U	6-14-1 6-21-1
NTS030V	6-26-3		
		NMSC24U	6-17-1 6-18-0
NTS3Y0V	6-26-3		
NTS300V	6-26-3	NRGALA	6-12-1 6-17-1
NT3SY0V	6-26-3		
		NRGALOV	6-21-1 6-18-0
NT4MHAV	6-26-1		
NT4MHOV	6-26-1		
NT80POV	6-26-2		

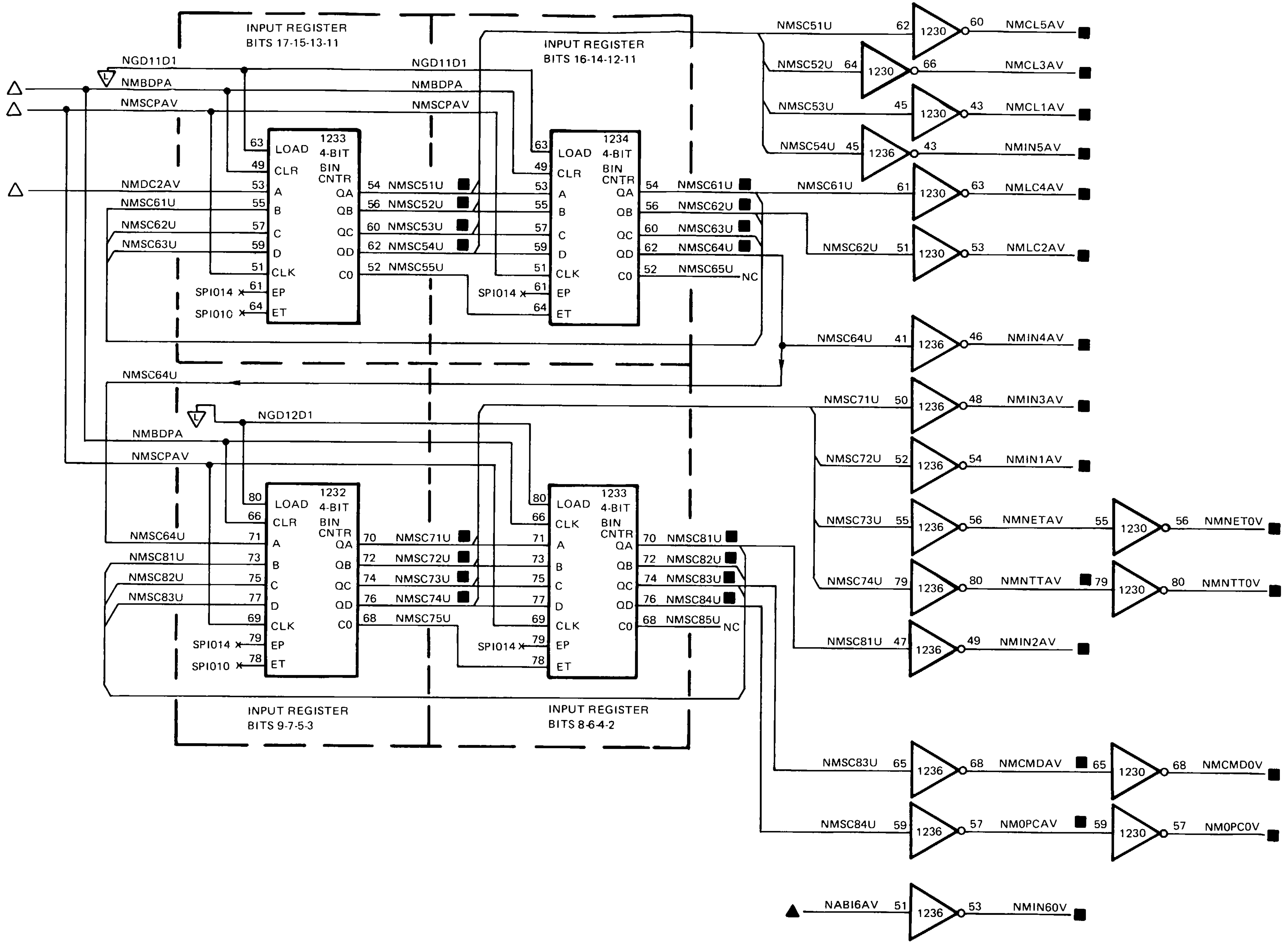

INPUT REGISTER BITS 24 27
INPUT REGISTER BITS 30 28 26
BAD PARITY
COUNT/LOAD CONTROL
ADDRESS CONTROL MUX
UNITS ADDRESS INPUT REGISTER
TENS ADDRESS INPUT REGISTER
TS08 LATCH
TX CLOCK START
ADDRESS REGISTER CLOCK GATE
ADDRESS ZERO GATE
RING ALL
TS SYNC 3 COUNT DOWN NMCV10V
COUNT DOWN
COUNT DOWN ENABLE
ADDRESS 0
RX32 CLOCK GATE
RECEIVE CLOCK GATE
TS09 14 GATE
RECEIVE DATA CLOCK GATING
TS CLOCK GATE
TX SYNC CLOCK GATE
CNT 26 CLOCK GATE
ADDRESS COUNTER CONTROL GATING
NMSC14U
NMSC21U
NMSC22U
NMSC23U
NMSC24U
NMSC25U
NMDATOV
NMBDPA
NMCPSAV
NMRNGAV
NMRECAV
NMAPEO
NMADPO
NMACVTA
NMACVTB
NMACVTD
NMACVTC
NMSC3AV
NMT1TOV
NMAC1J
NMCS3AV
NMT1TOV
NTSY40V
NMRLAA
NMRALA
NMCONAV
NMRLFO
NMRLEAV
NMRNGAV
NMRNGOV
NMAD10V
NMAD20V
NMAD30V
NMAD1AV
NMAD3AV
NMDC2AV
NMAD0AV
NMAD80V
NMAD00V
NTA2POV
NTSY20V
NMAC4A
NMCVIA
NRGALOV
NRGALA
NMAC1K
NMCS2A
NMAC3A
NMACP0
NMAC40V
NTB1CAV
NTSY20V
NT3SY0V
NT80POV
NMTN9A
NMT9IS
NMT9IR
NMSCEAV
NT4MHAV
NMSCEOV
NFRSTA
NMCC1A
NTS030V
NTSYN2U
NMR320V
NMCS7A
NMCSPAV
NMCLKD1
NMRECOV
NMCS1A
NTDS1D4
NMSCBA
NNRC00
NLSPRJ
NMSCAA
NMSCD0V
NT4MH0V
NMSCEA
NMSCC0
NTS3Y0V
NMSC30
NMSC2A
NUD01D1
NMCS46T

FO-11. Central input Register, Logic Diagram (Sheet 2 of 3)

INPUTS	F/O-SH
NAB16AV	6-13-0
OUTPUTS	F/O-SH
NMCMDAV	6-9-2 6-22-0 6-13-0 6-12-1
NMCMDOV	6-21-1 6-10-2 6-24-1 6-22-0
NMOPCOV	6-22-0
NM1N1AV	6-13-0 6-17-1
NM1N2AV	6-13-0 6-17-1 6-18.0
NM1N3AV	6-13-0 6-17-1
NM1N4AV	6-13-0 6-17-1
NM1N5AV	 6-17-1
NM1N6AV	6-13-0 6-17-1
NM1N60V	6-18-0
NMCL1AV	6-19-0
NMLC2AV	6-19-0
NMCL3AV	6-19-0
NMLC4AV	6-19-0
NMLC5AV	6-19-0
NMNETOV	6-13-0

OUTPUTS	F/O-SH
NMNTTAV	6-22-0 6-13-0 6-9-2 6-12-1
NMNTT0V	6-10-2 6-25-1 6-22-0 6-21-2
NMOPCAV	6-22-0 6-9-2 6-13-0 6-12-1
NMSC84U	6-10-2 6-10-2 6-21-1 6-23-1
NMSC51U	6-10-2
NMSC52U	6-10-2 6-18-0
NMSC53U	6-10-2 6-18-0 6-13-0
NMSC54U	6-10-2 6-180
NMSC61U	6-10-2 6-18-0
NMSC62U	6-10-2 6-18-0
NMSC63U	6-10-2 6-13-0
NMSC64U	6-10-2 6-18-0
NMSC71U	6-10-2 6-18-0
NMSC72U	6-10-2

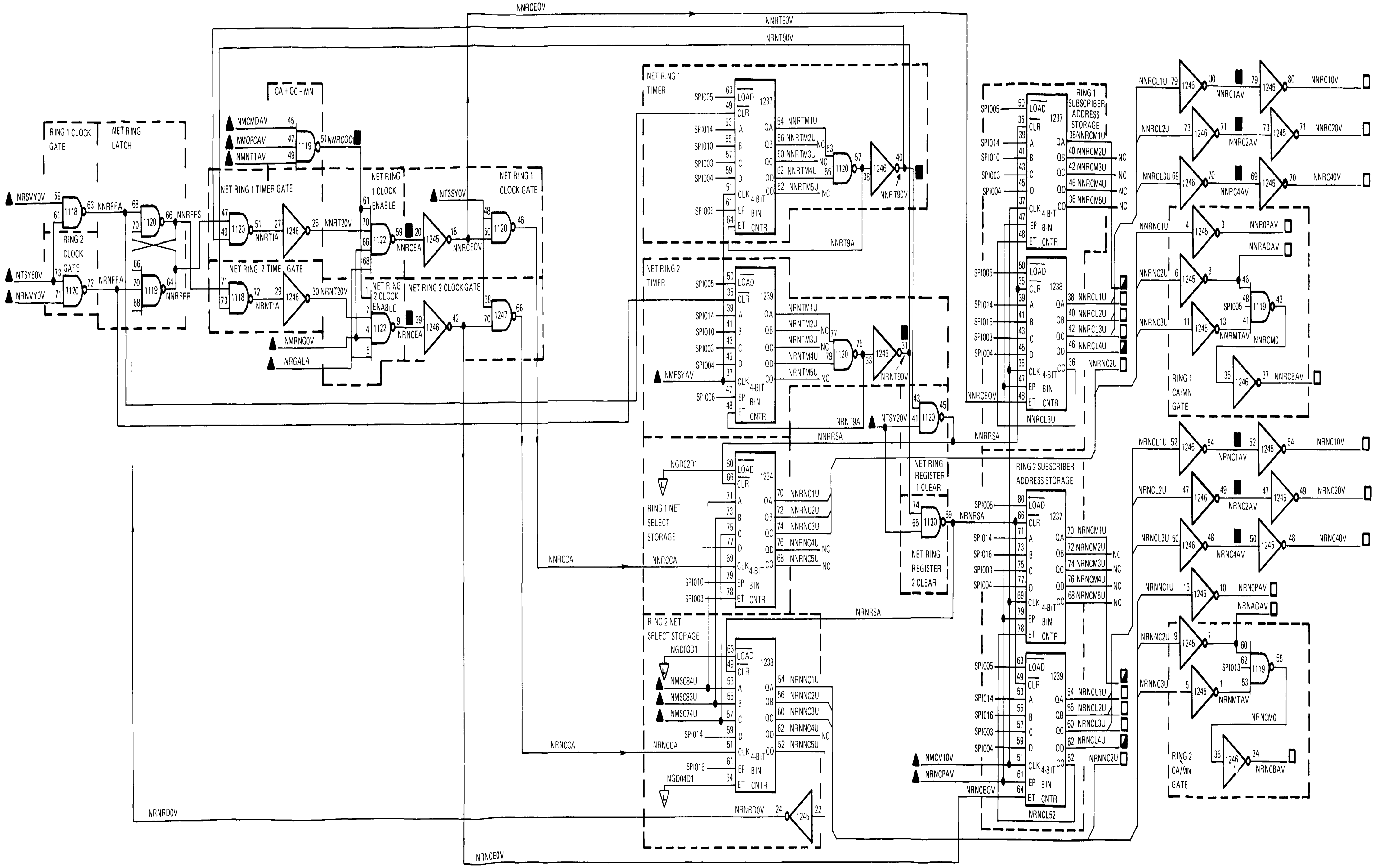
OUTPUTS	F/O-SH
NMSC73U	6-8-0
NMSC74U	6-10-2 6-8-0 6-12-1
NMSC81U	6-10-2
NMSC82U	6-8-0 6-13-0
NMSC83U	6-10-2 6-8-0 6-12-1
	6-8-0 6-12-1


INPUT REGISTER BITS 17-15-13-11
INPUT REGISTER BITS 16-14-12-11
INPUT REGISTER BITS 9-7-5-3
INPUT REGISTER BITS 8-6-4-2
NGD11D1
NMBDPA
NMSCPAV
NMDC2AV
NMSC61U
NMSC62U
NMSC63U
NMSC64U
NGD12D1
NMSC81U
NMSC82U
NMSC83U
1233 4-BIT BIN CNTR
1234 4-BIT BIN CNTR
1232 4-BIT BIN CNTR
1233 4-BIT BIN CNTR
LOAD
CLR
CLK
A
B
C
D
EP
ET
QA
QB
QC
QD
CO
SPI014
SPI010
NC
NMSC51U
NMSC52U
NMSC53U
NMSC54U
NMSC55U
NMSC61U
NMSC62U
NMSC63U
NMSC64U
NMSC65U
NMSC71U
NMSC72U
NMSC73U
NMSC74U
NMSC75U
NMSC81U
NMSC82U
NMSC83U
NMSC84U
NMSC85U
1230
1236
NMCL5AV
NMCL3AV
NMCL1AV
NMIN5AV
NMLC4AV
NMLC2AV
NMIN4AV
NMIN3AV
NMIN1AV
NMNETAV
NMNET0V
NMNTTAV
NMNTT0V
NMIN2AV
NMCMDAV
NMCMD0V
NMOPCAV
NMOPC0V
NABI6AV
NMIN60V

FO-11. Central Input Register, Logic Diagram (Sheet 3 of 3)

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NMCMDAV	6-11-3	NNRC2AV	6-10-1
NMCV10V	6-11-2	NNRC4AV	6-10-1
NMFSYAV	6-27-2	NNRT90V	6-10-1 6-28-3 6-10-2
NMNTTAV	6-11-3		
NM0PCAV	6-11-3	NNRCEA	6-10-1
NMRNG0V	6-11-2	NRNCL4U	6-10-1
NMSC74U	6-11-3	NRNCM1U	6-10-1
NMSC83U	6-11-3	NRNC1AV	6-10-1
NMSC84U	6-11-3	NRNC2AV	6-10-1
NRGALA	6-11-2	NRNC4AV	6-10-1
NRNCPAV	6-10-1	NRNT90V	6-10-1 6-28-3 6-10-2
NRNVY0V	6-10-2		
NRSVY0V	6-10-2		
NTSY20V	6-26-3		
NTSY50V	6-26-3		
NT3SY0V	6-26-3		

OUTPUTS	F/O - SH
NNRCEA	6 10-1
NNRCL4U	6-10-1
NNRCM1U	6-10 1
NNRC00	6-11-2
NNRC1AV	6-10-1


NNRCE0V
NNRT90V
RING 1 CLOCK GATE
NET RING LATCH
RING 2 CLOCK GATE
CA + OC + MN
NMCMDAV
NM0PCAV
NMNTTAV
NNRC00
NET RING 1 TIMER GATE
NET RING 2 TIME GATE
NET RING 1 CLOCK ENABLE
NET RING 2 CLOCK ENABLE
NET RING 1 CLOCK GATE
NET RING 2 CLOCK GATE
NT3SY0V
NMRNG0V
NRGALA
NRSVY0V
NTSY50V
NRNVY0V
NET RING 1 TIMER
NET RING 2 TIMER
NMFSYAV
NTSY20V
RING 1 NET SELECT STORAGE
RING 2 NET SELECT STORAGE
NET RING REGISTER 1 CLEAR
NET RING REGISTER 2 CLEAR
RING 1 SUBSCRIBER ADDRESS STORAGE
RING 2 SUBSCRIBER ADDRESS STORAGE
RING 1 CA/MN GATE
RING 2 CA/MN GATE
NMSC84U
NMSC83U
NMSC74U
NMCV10V
NRNCPAV
NNRC1AV
NNRC2AV
NNRC4AV
NNRC8AV
NRNC1AV
NRNC2AV
NRNC4AV
NRNC8AV
NNRCM0
NRNCM0
LOAD
CLR
4-BIT BIN CNTR

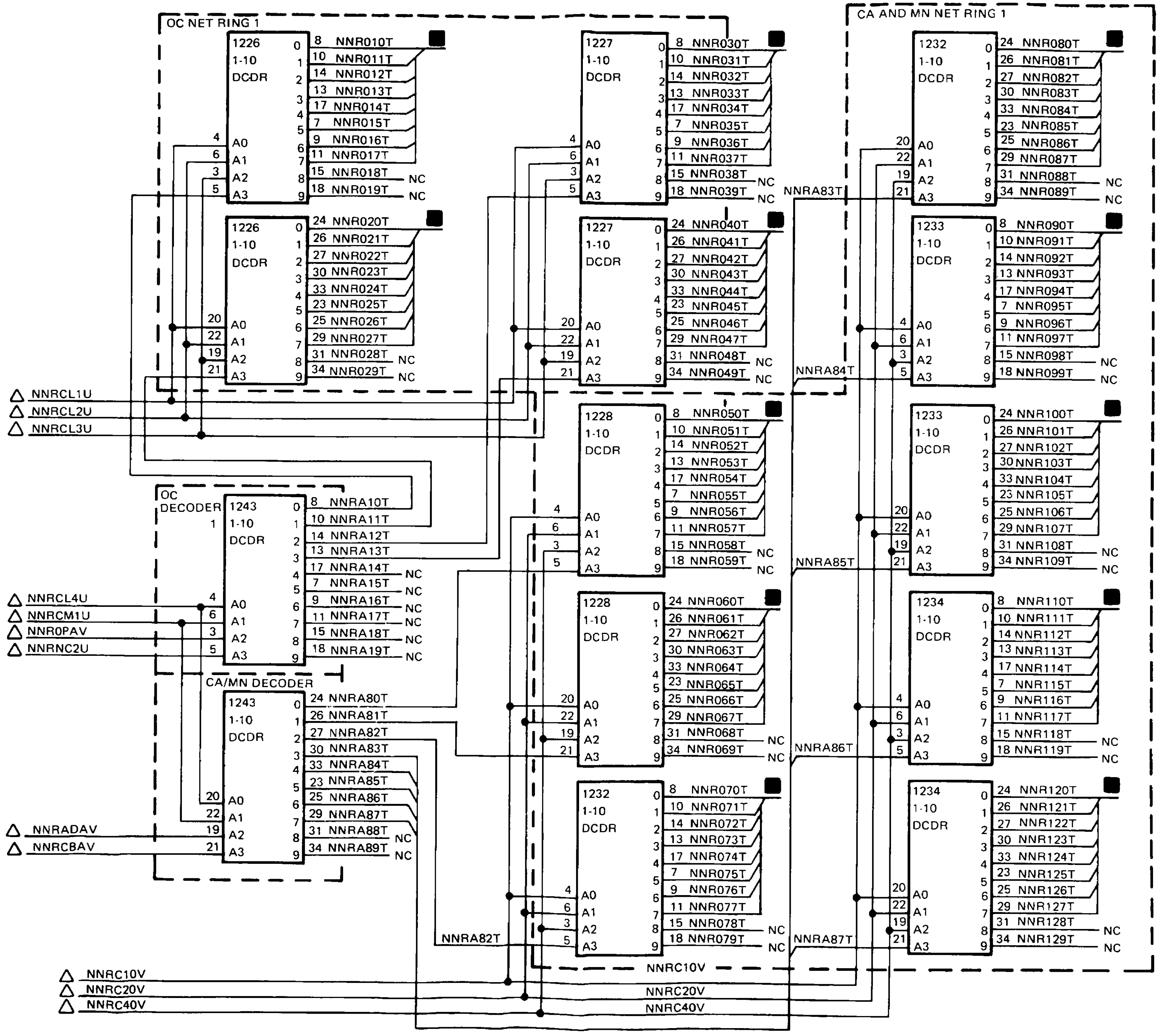
FO-12. Net Ring No. 1 and No. 2, Logic Diagram (Sheet 1 of 3).

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

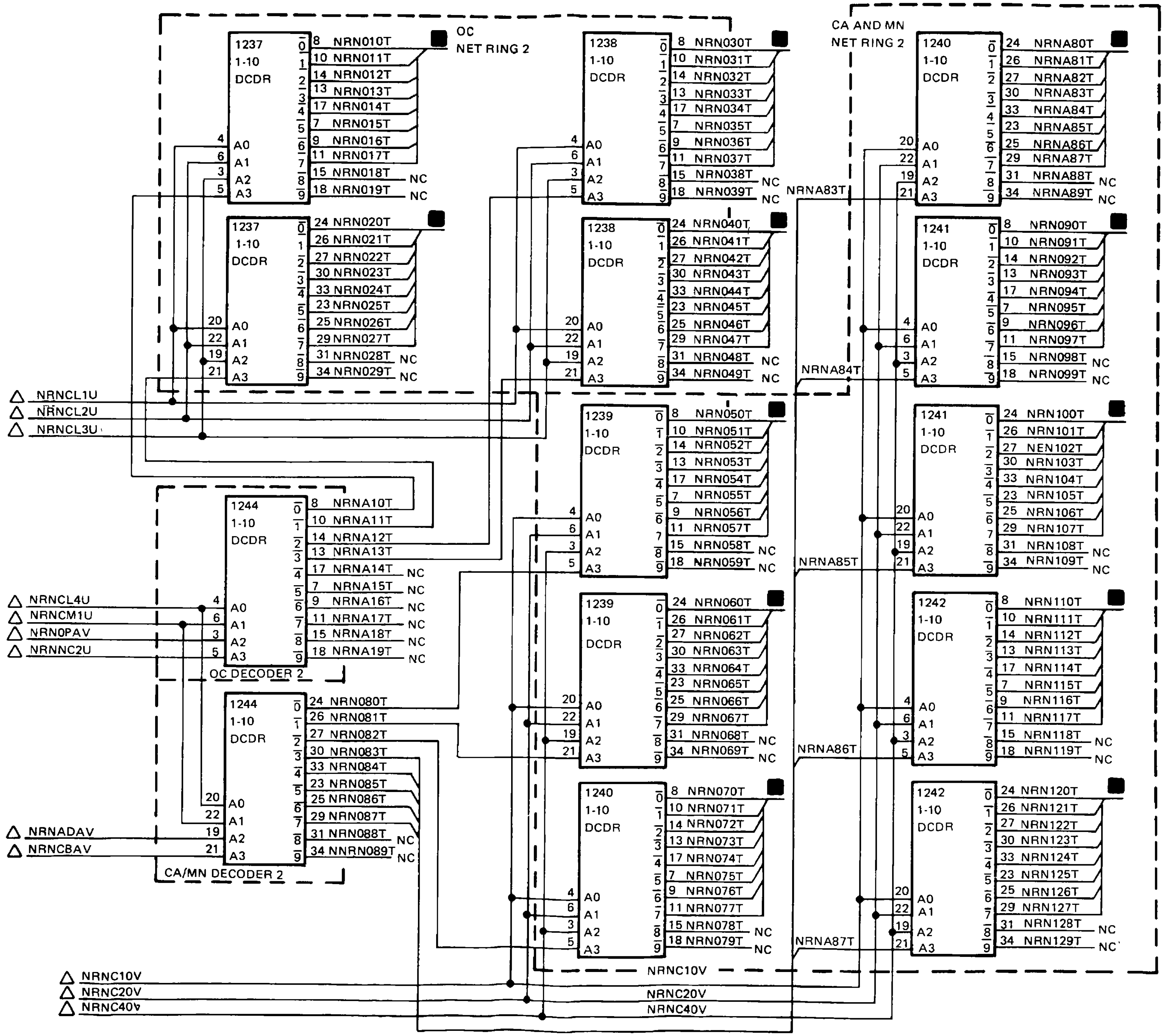
   ▲ INPUT FROM ANOTHER FIGURE
   △ INPUT FROM SAME FIGURE
   ■ OUTPUT TO ANOTHER FIGURE
   ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ⏚ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

OUTPUTS	F/O - SH	OUTPUTS	F/O - SH	OUTPUTS	F/O - SH	OUTPUTS	F/O - SH
NNR010T	6-1-1	NNR040T	6-1-2	NNR070T	6-2-2	NNR100T	6-3-1
NNR011T	6-1-1	NNR041T	6-1-2	NNR071T	6-2-2	NNR101T	6-3-1
NNR012T	6-1-1	NNR042T	6-1-2	NNR072T	6-2-2	NNR102T	6-3-1
NNR013T	6-1-1	NNR043T	6-1-2	NNR073T	6-2-2	NNR103T	6-3-1
NNR014T	6-1-1	NNR044T	6-1-2	NNR074T	6-2-2	NNR104T	6-3-2
NNR015T	6-1-1	NNR045T	6-1-2	NNR075T	6-2-2	NNR105T	6-3-2
NNR016T	6-1-1	NNR046T	6-1-2	NNR076T	6-2-2	NNR106T	6-3-2
NNR017T	6-1-1	NNR047T	6-1-2	NNR077T	6-2-2	NNR107T	6-3-2
NNR020T	6-1-1	NNR050T	6-2-1	NNR080T	6-2-2	NNR110T	6-3-2
NNR021T	6-1-1	NNR051T	6-2-1	NNR081T	6-2-2	NNR111T	6-3-2
NNR022T	6-1-1	NNR052T	6-2-1	NNR082T	6-2-2	NNR112T	6-3-2
NNR023T	6-1-1	NNR053T	6-2-1	NNR083T	6-2-2	NNR113T	6-3-2
NNR024T	6-1-2	NNR054T	6-2-1	NNR084T	6-2-2	NNR114T	6-3-2
NNR025T	6-1-2	NNR055T	6-2-1	NNR085T	6-t-2	NNR115T	6-3-2
NNR026T	6-1-2	NNR056T	6-2-1	NNR086T	6-2-2	NNR116T	6-3-2
NNR027T	6-1-2	NNR057T	6-2-1	NNR087T	6-2-2	NNR117T	6-3-2
NNR030T	6-1-2	NNR060T	6-2-1	NNR090T	6-3-1	NNR120T	6-3-2
NNR031T	6-1-2	NNR061T	6-2-1	NNR091T	6-3-1	NNR121T	6-3-2
NNR032T	6-1-2	NNR062T	6-2-1	NNR092T	6-3-1	NNR122T	6-3-2
NNR033T	6-1-2	NNR063T	6-2-1	NNR093T	6-3-1	NNR123T	6-3-2
NNR034T	6-1-2	NNR064T	6-2-2	NNR094T	6-3-1	NNR124T	6-3-2
NNR035T	6-1-2	NNR065T	6-2-2	NNR095T	6-3-1	NNR125T	6-3-2
NNR036T	6-1-2	NNR066T	6-2-2	NNR096T	6-3-1	NNR126T	6-3-2
NNR037T	6-1-2	NNR067T	6-2-2	NNR097T	6-3-1	NNR127T	6-3-2


OC NET RING 1
CA AND MN NET RING 1
OC DECODER
CA/MN DECODER
1226
1227
1228
1232
1233
1234
1243
1-10
DCDR
A0
A1
A2
A3
NNRCL1U
NNRCL2U
NNRCL3U
NNRCL4U
NNRCM1U
NNR0PAV
NNRNC2U
NNRADAV
NNRCBAV
NNRC10V
NNRC20V
NNRC40V
NNRA10T
NNRA11T
NNRA12T
NNRA13T
NNRA14T
NNRA15T
NNRA16T
NNRA17T
NNRA18T
NNRA19T
NNRA80T
NNRA81T
NNRA82T
NNRA83T
NNRA84T
NNRA85T
NNRA86T
NNRA87T
NNRA88T
NNRA89T
NC

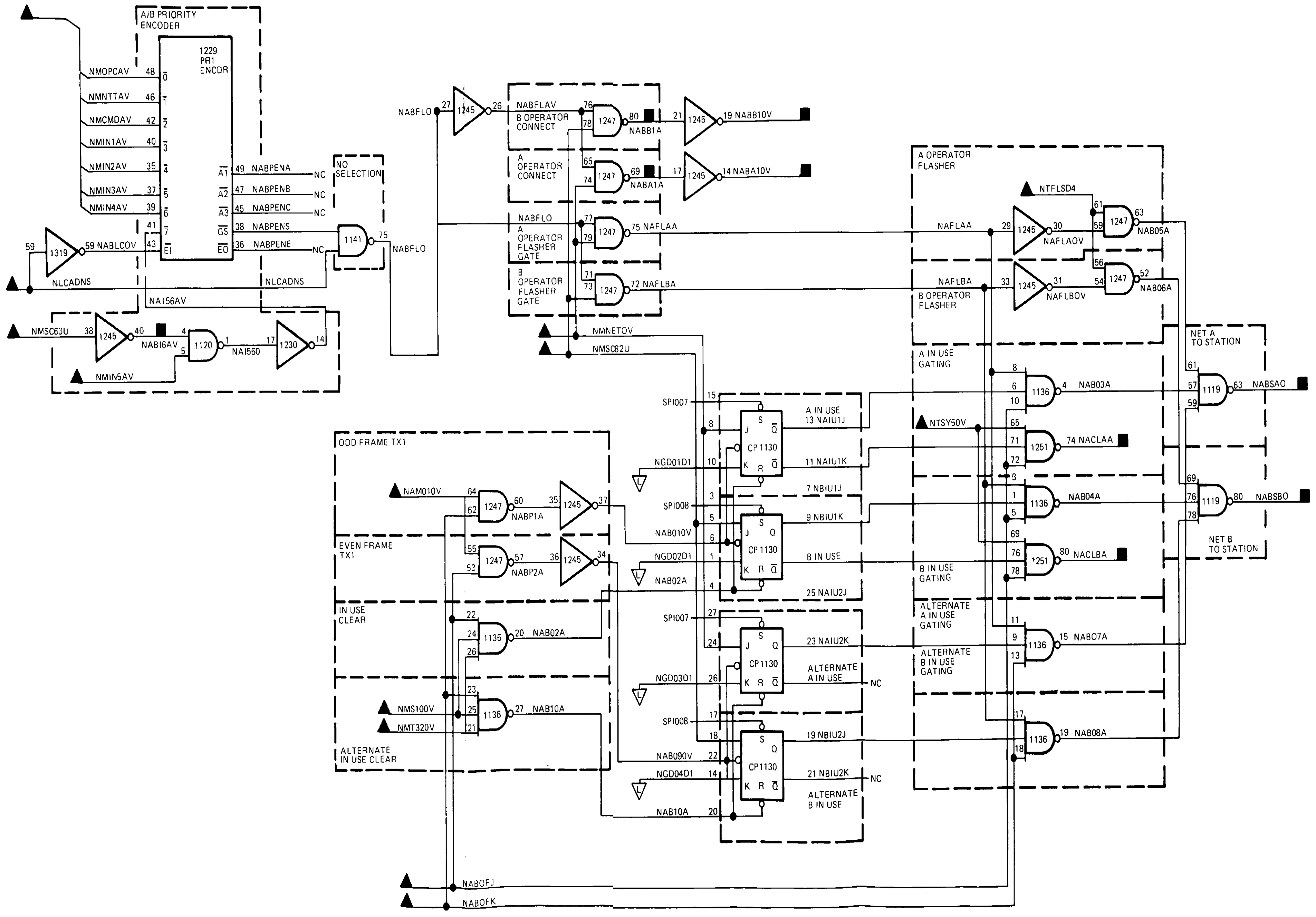
FO-12. Net Ring No. 1 and No. 2, Logic Diagram (Sheet 2 of 3).

OUTPUTS	F/O - SH	OUTPUTS	F/O - SH	OUTPUTS	F/O - SH	OUTPUTS	F/O - SH
NRN010T	6-1-1	NRN040T	6-1-2	NRN070T	6-2-2	NRN100T	6-3-1
NRN011T	6-1-1	NRN041T	6-1-2	NRN071T	6-2-2	NRN101T	6-3-1
NRN012T	6-1-1	NRN042T	6-1-2	NRN072T	6-2-2	NRN102T	6-3-1
NRN013T	6-1-1	NRN043T	6-1-2	NRN073T	6-2-2	NRN103T	6-3-1
NRN014T	6-1-1	NRN044T	6-1-2	NRN074T	6-2-2	NRN104T	6-3-2
NRN015T	6-1-1	NRN045T	6-1-2	NRN075T	6-2-2	NRN105T	6-3-2
NRN016T	6-1-1	NRN046T	6-1-2	NRN076T	6-2-2	NRN106T	6-3-2
NRN017T	6-1-1	NRN047T	6-1-2	NRN077T	6-2-2	NRN107T	6-3-2
NRN020T	6-1-1	NRN050T	6-2-1	NRN080T	6-2-2	NRN110T	6-3-2
NRN021T	6-1-1	NRN051T	6-2-1	NRN081T	6-2-2	NRN111T	6-3-2
NRN022T	6-1-1	NRN052T	6-2-1	NRN082T	6-2-2	NRN112T	6-3-2
NRN023T	6-1-1	NRN053T	6-2-1	NRN083T	6-2-2	NRN113T	6-3-2
NRN024T	6-1-2	NRN054T	6-2-1	NRN084T	6-2-2	NRN114T	6-3-2
NRN025T	6-1-2	NRN055T	6-2-1	NRN085T	6-t-2	NRN115T	6-3-2
NRN026T	6-1-2	NRN056T	6-2-1	NRN086T	6-2-2	NRN116T	6-3-2
NRN027T	6-1-2	NRN057T	6-2-1	NRN087T	6-2-2	NRN117T	6-3-2
NRN030T	6-1-2	NRN060T	6-2-1	NRN090T	6-3-1	NRN120T	6-3-2
NRN031T	6-1-2	NRN061T	6-2-1	NRN091T	6-3-1	NRN121T	6-3-2
NRN032T	6-1-2	NRN062T	6-2-1	NRN092T	6-3-1	NRN122T	6-3-2
NRN033T	6-1-2	NRN063T	6-2-1	NRN093T	6-3-1	NRN123T	6-3-2
NRN034T	6-1-2	NRN064T	6-2-2	NRN094T	6-3-1	NRN124T	6-3-2
NRN035T	6-1-2	NRN065T	6-2-2	NRN095T	6-3-1	NRN125T	6-3-2
NRN036T	6-1-2	NRN066T	6-2-2	NRN096T	6-3-1	NRN126T	6-3-2
NRN037T	6-1-2	NRN067T	6-2-2	NRN097T	6-3-1	NRN127T	6-3-2


OC
NET RING 2
CA AND MN
NET RING 2
1237 1-10 DCDR
8 NRN010T
10 NRN011T
14 NRN012T
13 NRN013T
17 NRN014T
7 NRN015T
9 NRN016T
11 NRN017T
15 NRN018T NC
18 NRN019T NC
1237 1-10 DCDR
24 NRN020T
26 NRN021T
27 NRN022T
30 NRN023T
33 NRN024T
23 NRN025T
25 NRN026T
29 NRN027T
31 NRN028T NC
34 NRN029T NC
1238 1-10 DCDR
8 NRN030T
10 NRN031T
14 NRN032T
13 NRN033T
17 NRN034T
7 NRN035T
9 NRN036T
11 NRN037T
15 NRN038T NC
18 NRN039T NC
1238 1-10 DCDR
24 NRN040T
26 NRN041T
27 NRN042T
30 NRN043T
33 NRN044T
23 NRN045T
25 NRN046T
29 NRN047T
31 NRN048T NC
34 NRN049T NC
1239 1-10 DCDR
8 NRN050T
10 NRN051T
14 NRN052T
13 NRN053T
17 NRN054T
7 NRN055T
9 NRN056T
11 NRN057T
15 NRN058T NC
18 NRN059T NC
1239 1-10 DCDR
24 NRN060T
26 NRN061T
27 NRN062T
30 NRN063T
33 NRN064T
23 NRN065T
25 NRN066T
29 NRN067T
31 NRN068T NC
34 NRN069T NC
1240 1-10 DCDR
8 NRN070T
10 NRN071T
14 NRN072T
13 NRN073T
17 NRN074T
7 NRN075T
9 NRN076T
11 NRN077T
15 NRN078T NC
18 NRN079T NC
1240 1-10 DCDR
24 NRNA80T
26 NRNA81T
27 NRNA82T
30 NRNA83T
33 NRNA84T
23 NRNA85T
25 NRNA86T
29 NRNA87T
31 NRNA88T NC
34 NRNA89T NC
1241 1-10 DCDR
8 NRN090T
10 NRN091T
14 NRN092T
13 NRN093T
17 NRN094T
7 NRN095T
9 NRN096T
11 NRN097T
15 NRN098T NC
18 NRN099T NC
1241 1-10 DCDR
24 NRN100T
26 NRN101T
27 NEN102T
30 NRN103T
33 NRN104T
23 NRN105T
25 NRN106T
29 NRN107T
31 NRN108T NC
34 NRN109T NC
1242 1-10 DCDR
8 NRN110T
10 NRN111T
14 NRN112T
13 NRN113T
17 NRN114T
7 NRN115T
9 NRN116T
11 NRN117T
15 NRN118T NC
18 NRN119T NC
1242 1-10 DCDR
24 NRN120T
26 NRN121T
27 NRN122T
30 NRN123T
33 NRN124T
23 NRN125T
25 NRN126T
29 NRN127T
31 NRN128T NC
34 NRN129T NC
1244 1-10 DCDR
8 NRNA10T
10 NRNA11T
14 NRNA12T
13 NRNA13T
17 NRNA14T NC
7 NRNA15T NC
9 NRNA16T NC
11 NRNA17T NC
15 NRNA18T NC
18 NRNA19T NC
OC DECODER 2
1244 1-10 DCDR
24 NRN080T
26 NRN081T
27 NRN082T
30 NRN083T
33 NRN084T
23 NRN085T
25 NRN086T
29 NRN087T
31 NRN088T NC
34 NNRN089T NC
CA/MN DECODER 2
A0
A1
A2
A3
NRNCL1U
NRNCL2U
NRNCL3U
NRNCL4U
NRNCM1U
NRN0PAV
NRNNC2U
NRNADAV
NRNCBAV
NRNA83T
NRNA84T
NRNA85T
NRNA86T
NRNA87T
NRNC10V
NRNC20V
NRNC40V

FO-12. Net Ring No. 1 and No. 2, Logic Diagram (Sheet 3 of 3).

F/O - SH	INPUTS	F/O - SH	OUTPUTS
6-15-0	NABOFJ	6-8-0	NABALA
6-15-0	NABOFK	6-8-0	NABA10V
6-14-1	NAB16AV	6-11-3	NABBIA
6-15-0	NAM010V	6-17-1	NABB10V
6-15-0	NLCADNS	6-15-0	NAB16AV
6-14-1	NMCMDAV	6-19-0	NABSA0
6-11-3	NMIN1AV	6-11-3	NABSB0
6-17-1	NMIN2AV	6-11-3	NACLAA
6-8-0	NMIN3AV	6-11-3	NACLBA
6-8-0	NMIN4AV	6-11-3	
6-14-1	NMIN5AV	6-11-3	
6-14-1	NMNET0V	6-11-3	
	NMNTTAV	6-11-3	
	NM0PCAV	6-11-3	
	NMS100V	6-11-3	
	NMSC63U	6-27-2	
	NMSC82U	6-11-3	
	NMT320V	6-11-3	
	NTFLSD4	6-27-1	
	NTSY50V	6-27-2	
		6-26-3	


A/B PRIORITY ENCODER
1229 PRI ENCDR
NMOPCAV
NMNTTAV
NMCMDAV
NMIN1AV
NMIN2AV
NMIN3AV
NMIN4AV
NABPENA
NABPENB
NABPENC
NABPENS
NABPENE
NC
NO SELECTION
NABLCOV
NLCADNS
NABFLO
NAI56AV
NMSC63U
NABI6AV
NAI560
NMIN5AV
NABFLAV
B OPERATOR CONNECT
A OPERATOR CONNECT
A OPERATOR FLASHER GATE
B OPERATOR FLASHER GATE
NABB1A
NABA1A
NABB10V
NABA10V
NAFLAA
NAFLBA
NMNETOV
NMSC82U
A OPERATOR FLASHER
B OPERATOR FLASHER
NTFLSD4
NAFLAOV
NAFLBOV
NAB05A
NAB06A
A IN USE GATING
B IN USE GATING
ALTERNATE A IN USE GATING
ALTERNATE B IN USE GATING
NTSY50V
NAB03A
NACLAA
NAB04A
NACLBA
NAB07A
NAB08A
NET A TO STATION
NET B TO STATION
NABSAO
NABSBO
ODD FRAME TX1
EVEN FRAME TX1
IN USE CLEAR
ALTERNATE IN USE CLEAR
NAM010V
NABP1A
NABP2A
NAB02A
NAB10A
NMS100V
NMT320V
SPI007
SPI008
NGD01D1
NGD02D1
NGD03D1
NGD04D1
NAB010V
NAB090V
CP 1130
A IN USE
NAIU1J
NAIU1K
NBIU1J
NBIU1K
B IN USE
NAIU2J
NAIU2K
ALTERNATE A IN USE
NBIU2J
NBIU2K
ALTERNATE B IN USE
NABOFJ
NABOFK

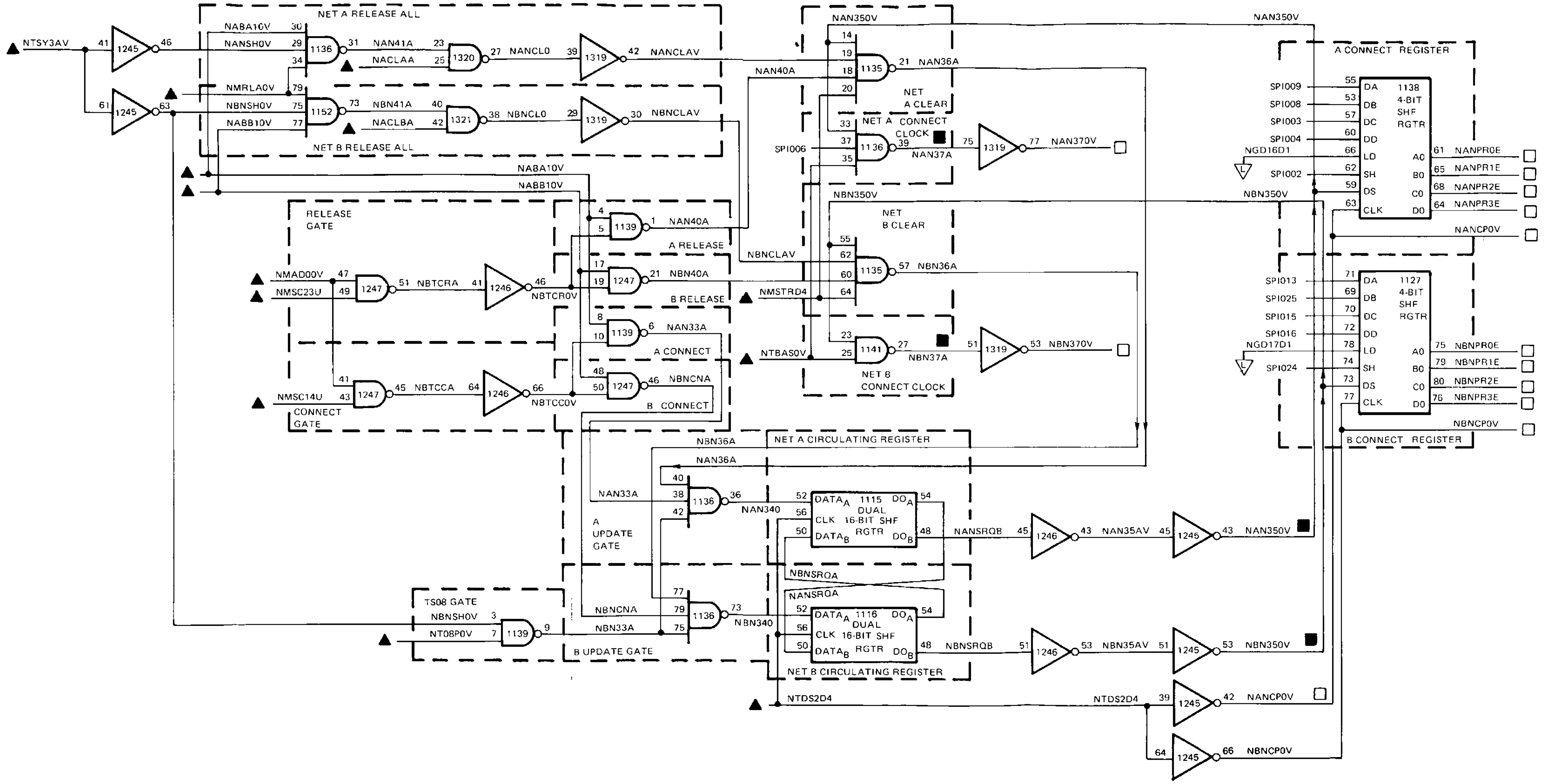
FO-13. A and B Control Net, Logic Diagram.

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:
   - ▲ INPUT FROM ANOTHER FIGURE
   - △ INPUT FROM SAME FIGURE
   - ■ OUTPUT TO ANOTHER FIGURE
   - ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   - □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ▽ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

INPUTS	F/O - SH
NABA10V	6-13-0
NABB10V	6-13-0
NACLAA	6-13-0
NACLBA	6-13-0
NMAD00V	6-11-2
NMRLA0V	6-11-2
NMSC14U	6-11-2
NMSC23U	6-11-2
NMSTRD4	6-27-2
NTBAS0V	6-26-1
NTDS2D4	6-26-1
NTSY3AV	6-26-3
NT08P0V	6-26-2

OUTPUTS	F/O - SH
NAN350V	6-8-0
NAN37A	6-4-1
NBN350V	6-8-0
NBN37A	6-4-1

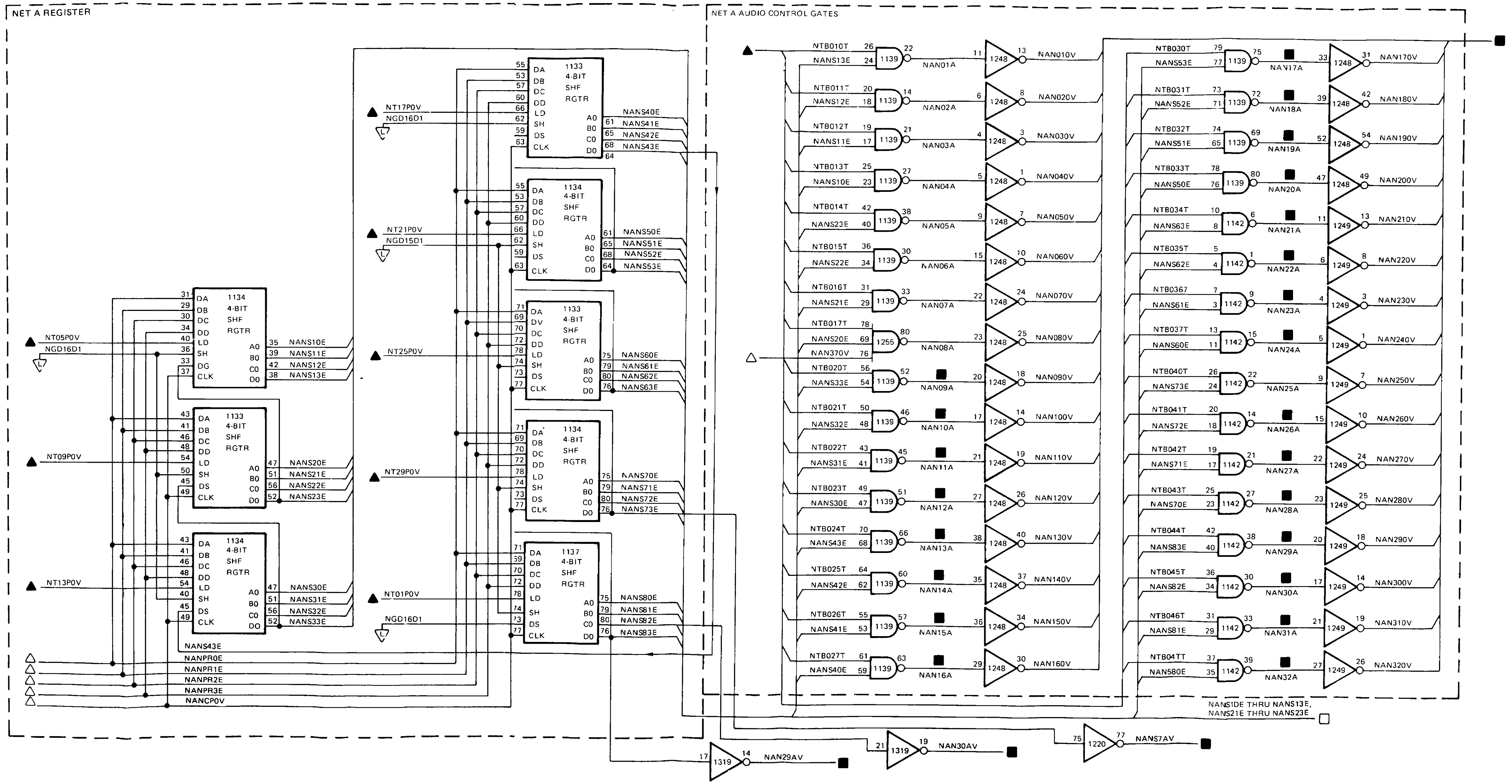

NET A RELEASE ALL
NET B RELEASE ALL
NTSY3AV
NABA10V
NANSH0V
NACLAA
NMRLA0V
NBNSH0V
NABB10V
NACLBA
NAN41A
NBN41A
NANCL0
NBNCL0
NANCLAV
NBNCLAV
RELEASE GATE
CONNECT GATE
NMAD00V
NMSC23U
NMSC14U
NBTCRA
NBTCCA
NBTCR0V
NBTCC0V
NAN40A
A RELEASE
NBN40A
B RELEASE
NAN33A
A CONNECT
NBNCNA
B CONNECT
NAN350V
NAN36A
NET A CLEAR
NET A CONNECT CLOCK
NAN37A
NAN370V
SPI006
NBN350V
NET B CLEAR
NBN36A
NMSTRD4
NTBAS0V
NBN37A
NBN370V
NET B CONNECT CLOCK
NET A CIRCULATING REGISTER
A UPDATE GATE
NAN340
DATA A
CLK
DATA B
1115 DUAL 16-BIT SHF RGTR
1116 DUAL 16-BIT SHF RGTR
NANSRQB
NBNSRQA
NANSRQA
NBNSRQB
NAN35AV
NBN35AV
TS08 GATE
NBNSH0V
NT08P0V
NBN33A
NBN340
B UPDATE GATE
NET B CIRCULATING REGISTER
NTDS2D4
NANCP0V
NBNCP0V
A CONNECT REGISTER
1138 4-BIT SHF RGTR
SPI009
SPI008
SPI003
SPI004
NGD16D1
SPI002
NANPR0E
NANPR1E
NANPR2E
NANPR3E
1127 4-BIT SHF RGTR
SPI013
SPI025
SPI015
SPI016
NGD17D1
SPI024
NBNPR0E
NBNPR1E
NBNPR2E
NBNPR3E
B CONNECT REGISTER
DA
DB
DC
DD
LD
SH
DS
CLK
A0
B0
C0
D0

FO-14. Net A and B Receive, Logic Diagram (Sheet 1 of 4).

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:
   - ▲ INPUT FROM ANOTHER FIGURE
   - △ INPUT FROM SAME FIGURE
   - ■ OUTPUT TO ANOTHER FIGURE
   - ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   - ☐ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ⏚ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

INPUTS	F/O - SH	INPUTS	F/O-SH	OUTPUTS	F/O - SH	OUTPUTS	FO - SH
NT01P0V	6-26-2	NTB030T	6-26-2	NBNS7AV	6-2-4	NBN32A	6-2-4
NT05P0V	6-26-2	NTB031T	6-26-2		6-16-1		6-16-1
NT09P0V	6-26-2	NTB032T	6-26-2	NBN09A	6-2-4	NBN010V	6-4-1
NT25P0V	6-26-2	NTB036T	6-26-2		6-16-1		
NT17P0V	6-26-2	NTB034T	6-26-2		6-16-1	NBN030V	6-4 1
					6-26-2	NTB034T	6-26-2
NT21P0V	6-26-2	NTB035T	6-26-2	NBN11A	6-2-4	NBN040V	6-4 1
					6-16-1		
NT25P0V	6-26-2	NTB036T	6-26-2	NBN050V	6 4 1		
				NBN12A	6-2-4		
NT29P0V	6-26-2	NTB037T	6-26-2		6-16-1	NBN060V	6-4 1
NTB010T	6-26-2	NTB040T	6-26-2	NBN13A	6-2-4	NBN040V	6-4-1
					6-16-1		
NTB011T	6-26-2	NTB041T	6-26-2			NBN080V	6 -5-0
		NBN14A	6-2-4				
NTB012T	6-26-2	NTB042T	6-26-2		6-16-1	NBN090V	6-4-1
NTB013T	6-26-2	NTB043T	6-26-2	NBN15A	6-2-4	NBN100V	6-4-1
					6-16-1		
NTB014T	6-26-2	NTB044T	6-26-2	NBN16A	6-2-4	NBN110V	6 4-1
NTB015T	2-26-2	NTB045T	6-26-2		6-16-1	NBN120V	6-4-1
NTB016T	6-26-2	NTB046T	6-26-2	NBN17A	6-2-4	NBN130V	6-4-1
					6-16 1		
NTB017T	6-26-2	NTB047T	6-26-2	NBN18A	6-2-4	NBN140V	6-4-1
		NBN24A	6-2-4			NBN230V	
NTB020T	6-26-2				6-16-1		
					6-16- 2	NBN150V	6-4-1
NTB021T	6-26-2			NBN19A	6 2-4		
					6-16 1	NBN160V	6-4-1
NTB022T	6-26-2						
				NBN20A	6-2-4	NBN170V	641
NTB023T	6-26-2				6-16-1		
						NBN180V	6 4-1
NTB024T	6-26-2			NBN21A	6-2-4		
					6-16-1	NBN190V	6-4-1
NTB025T	6-26-2						
				NBN22A	6-24	NBN200V	641
NTB026T	6-26-2				6-16-1		
NTB027T	6-26-2			NBN23A	6 2 4	NBN210V	6-4-1
					6-16 1		
						NBN220V	64 1
				NBN24A	6-2-4		
					6-16-1	NBN23V	6-4 1
				NBN26A	6-2-4	NBN240V	6-4-1
					6-16 1	NBN250V	64 1
				NBN27A	6-2-4		
					6-16-1	NBN260V	64 1
				NBN28A	62 4	NBN270V	64 1
					6-16-1		
						NBN280V	641
				NBN29A	6-2-4		
						NBN290V	6-4-1
				NBN29AV	6-16-1		
						NBN300V	6 4 1
				NBN30A	6-24		
						NBN310V	6-4 1
				NBN30AV	6-16 1		
						NBN320V	6-4 1
				NBN31A	6-2 4		
					6-16-1		


NET A REGISTER
NET A AUDIO CONTROL GATES
NT05P0V
NGD16D1
NT09P0V
NT13P0V
NT17P0V
NT21P0V
NGD15D1
NT25P0V
NT29P0V
NT01P0V
NANS43E
NANPR0E
NANPR1E
NANPR2E
NANPR3E
NANCP0V
1134 4-BIT SHF RGTR
1133 4-BIT SHF RGTR
1137 4-BIT SHF RGTR
NANS10E
NANS11E
NANS12E
NANS13E
NANS20E
NANS21E
NANS22E
NANS23E
NANS30E
NANS31E
NANS32E
NANS33E
NANS40E
NANS41E
NANS42E
NANS43E
NANS50E
NANS51E
NANS52E
NANS53E
NANS60E
NANS61E
NANS62E
NANS63E
NANS70E
NANS71E
NANS72E
NANS73E
NANS80E
NANS81E
NANS82E
NANS83E
NAN010V
NAN020V
NAN030V
NAN040V
NAN050V
NAN060V
NAN070V
NAN080V
NAN090V
NAN100V
NAN110V
NAN120V
NAN130V
NAN140V
NAN150V
NAN160V
NAN170V
NAN180V
NAN190V
NAN200V
NAN210V
NAN220V
NAN230V
NAN240V
NAN250V
NAN260V
NAN270V
NAN280V
NAN290V
NAN300V
NAN310V
NAN320V
NANS10E THRU NANS13E,
NANS21E THRU NANS23E
NAN29AV
NAN30AV
NANS7AV

FO-14. Net A and b receive, Logic Diagram (Sheet 2 of 4)

INPUTS	F/O-SH
NT01P0V	6-26-2
NT05P0V	6-26-2
NT09P0V	6-26-2
NT13P0V	6-26-2
NT17P0V	6-26-2
NT21P0V	6-26-2
NT25P0V	6-26-2
NT29P0V	6-26-2
NTB010T	6-26-2
NTB011T	6-26-2
NTB012T	6-26-2
NTB013T	6-26-2
NTB014T	6-26-2
NTB015T	6-26-2
NTB016T	6-26-2
NTB017T	6-26-2
NTB020T	6-26-2
NTB021T	6-26-2
NTB022T	6-26-2
NTB023T	6-26-2
NTB024T	6-26-2
NRB025T	6-26-2
NTB026T	6-26-2
NTB027T	6-26-2

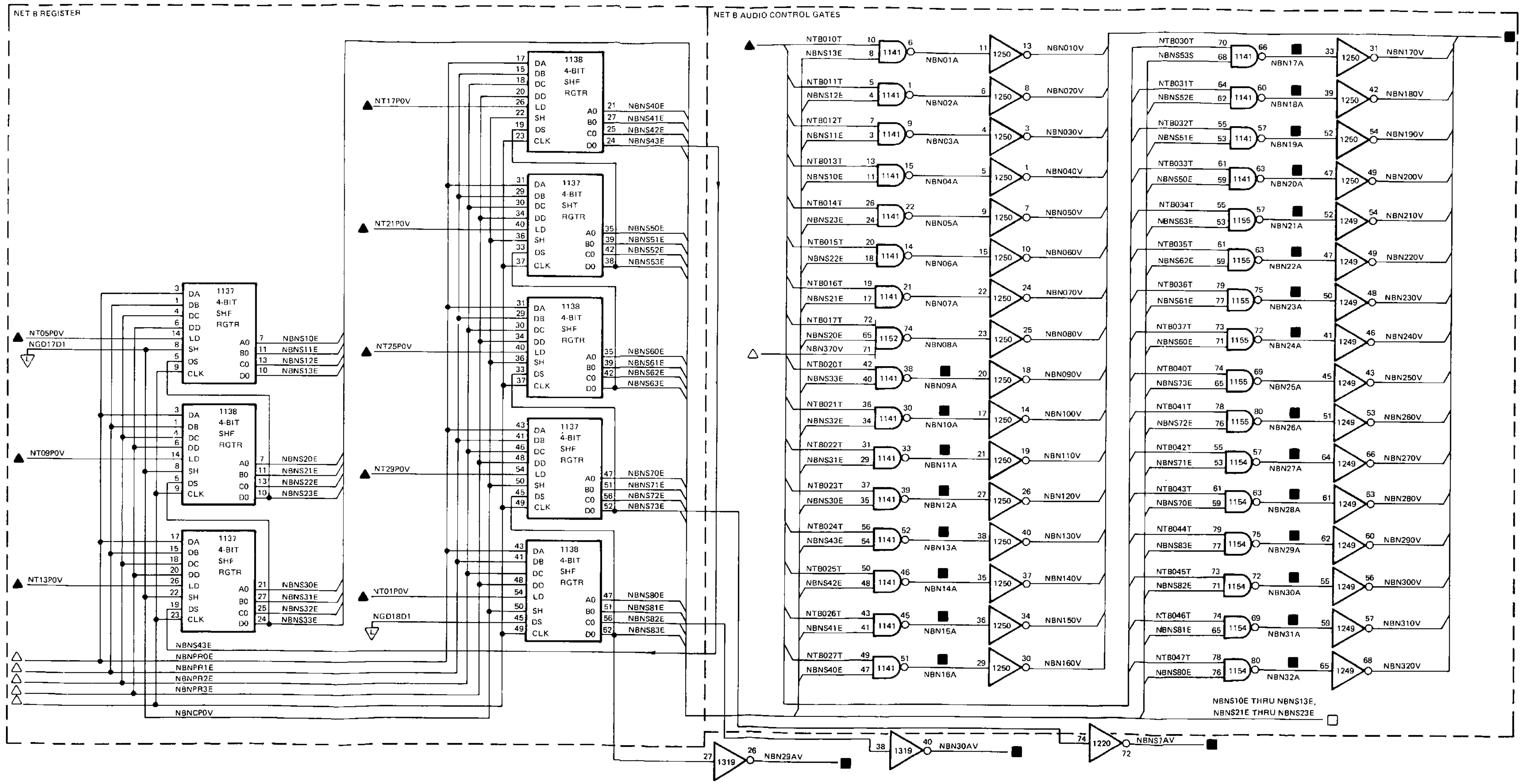
INPUTS	F/O -SH
NTB030T	6-26-2
NTB031T	6-26-2
NTB032T	6-26-2
NTB033T	6-26-2
NTB034T	6-26-2
NTB035T	6-26-2
NTB036T	6-26-2
NTB037T	6-26-2
NTB040T	6-26-2
NTB041T	6-26-2
NTB042T	6-26-2
NTB043T	6-26 2
NTB044T	6 26-2
NTB045T	6-26 2
NTB046T	6-26-2
NTB047T	6-26-2

OUTPUTS	F/O SH
NANS7AV	6-2-4 6 16-1
NAN09A	6 2-4 6-16-1
NAN10A	6-2-4 6-16-1
NAN11A	6-24 6-16-1

OUTPUTS	F/O-SH
NAN12A	6-2-4 6 16-1
NAN13A	6-2-4 6-16 1
NAN14A	6-2-4 6-16-1
NAN15A	6 2-4 6-16 1
NAN16A	6-2-4 6 16-1
NAN17A	6-24 6-16-1
NAN18A	6-2-4 6-16-1
NAN19A	6-2-4 6-16-1
NAN20A	6-24 6-16-1
NAN21A	6-2-4 6-16-1
NAN22Z	6-2-4 6-16-1
NAN23A	6-2-4 6-16-1
NAN24A	6-2-4 6-16-1
NAN26A	6-2-4 6-16-1
NAN27A	6 2-4 6-16-1
NAN28A	6-2-4 6-16-1

OUTPUTS	FO SH
NAN29A	6-2-4
NAN29AV	6-16-1
NAN30A	6-2-4
NAN30AV	6-16-1
NAN31A	6 2-4 6-16-1
NAN32A	6-2-4 6-16-1
NAN010V	6-4-1
NAN020V	6-4-1
NAN030V	6-4-1
NAN040V	6-4-1
NAN050V	6-4-1
NAN060V	6-4-1
NAN070V	6-4-1
NAN080V	6-5-0
NAN090V	6-4-1
NAN100V	6-4-1
NAN110V	6-4-1
NAN120V	6-4-1

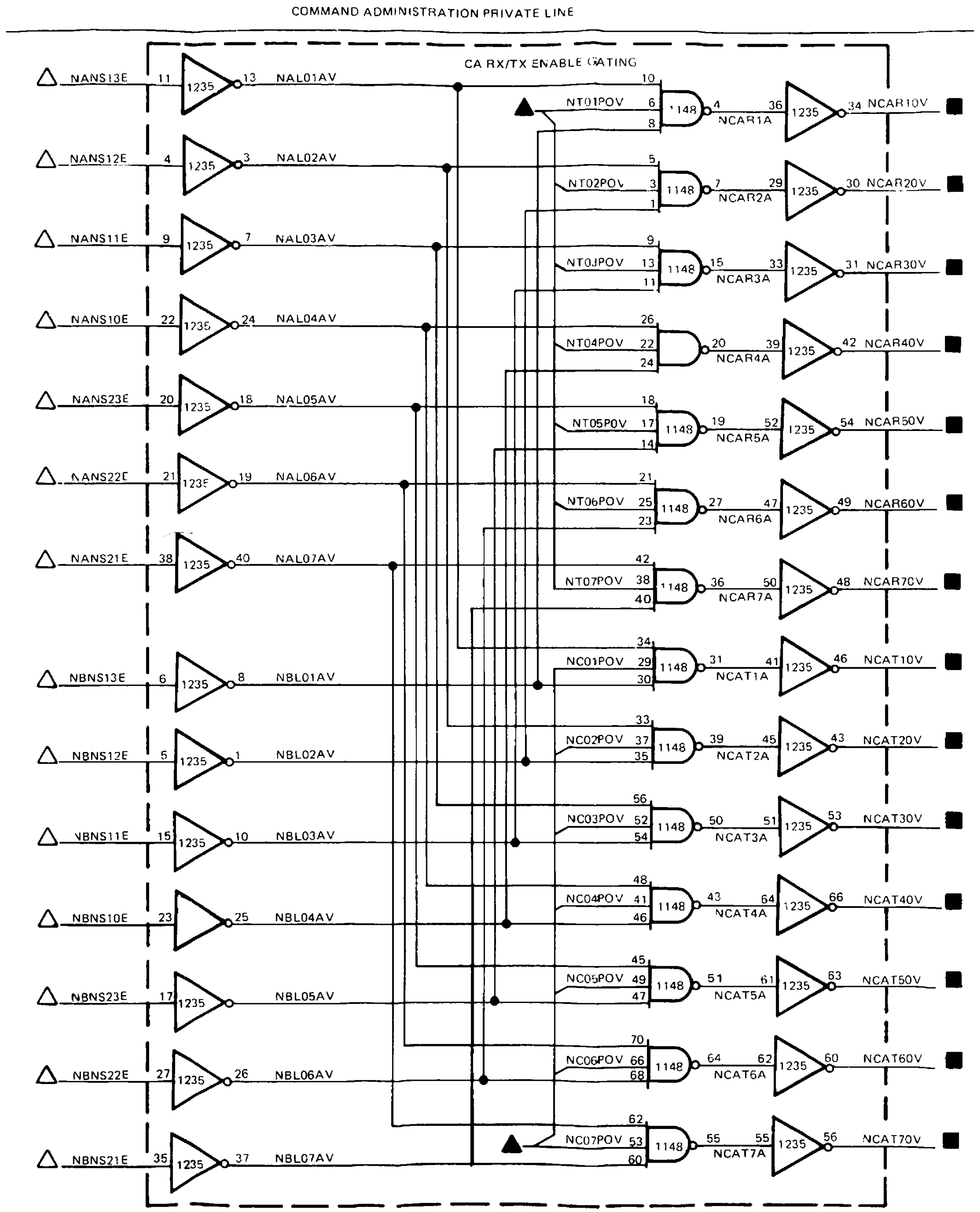
OUTPUTS	F/O-SH
NAN130V	6-4-1
NAN140V	6-4-1
NAN150V	6-4-1
NAN160V	6-4-1
NAN170V	6-4-1
NAN180V	6-4-1
NAN190V	6-4-1
NAN200V	6-4-1
NAN210V	6-4-1
NAN220V	6-4-1
NAN230V	6-4-1
NAN240V	6-4-1
NAN250V	6-4-1
NAN260V	6-4-1
NAN270V	6-4-1
NAN280V	6-4-1
NAN290V	6-4-1
NAN300V	6-4 1
NAN310V	6-4-1
NAN320V	6-4-1


NET B REGISTER
NET B AUDIO CONTROL GATES
NT05P0V
NGD17D1
NT09P0V
NT13P0V
NT17P0V
NT21P0V
NT25P0V
NT29P0V
NT01P0V
NGD18D1
4-BIT SHF RGTR
NBNS43E
NBNPR0E
NBNPR1E
NBNPR2E
NBNPR3E
NBNCP0V
NBN29AV
NBN30AV
NBNS7AV
NBNS10E THRU NBNS13E,
NBNS21E THRU NBNS23E

FO-14. Net A and B Receive, Logic Diagram (Sheet 3 of 4)

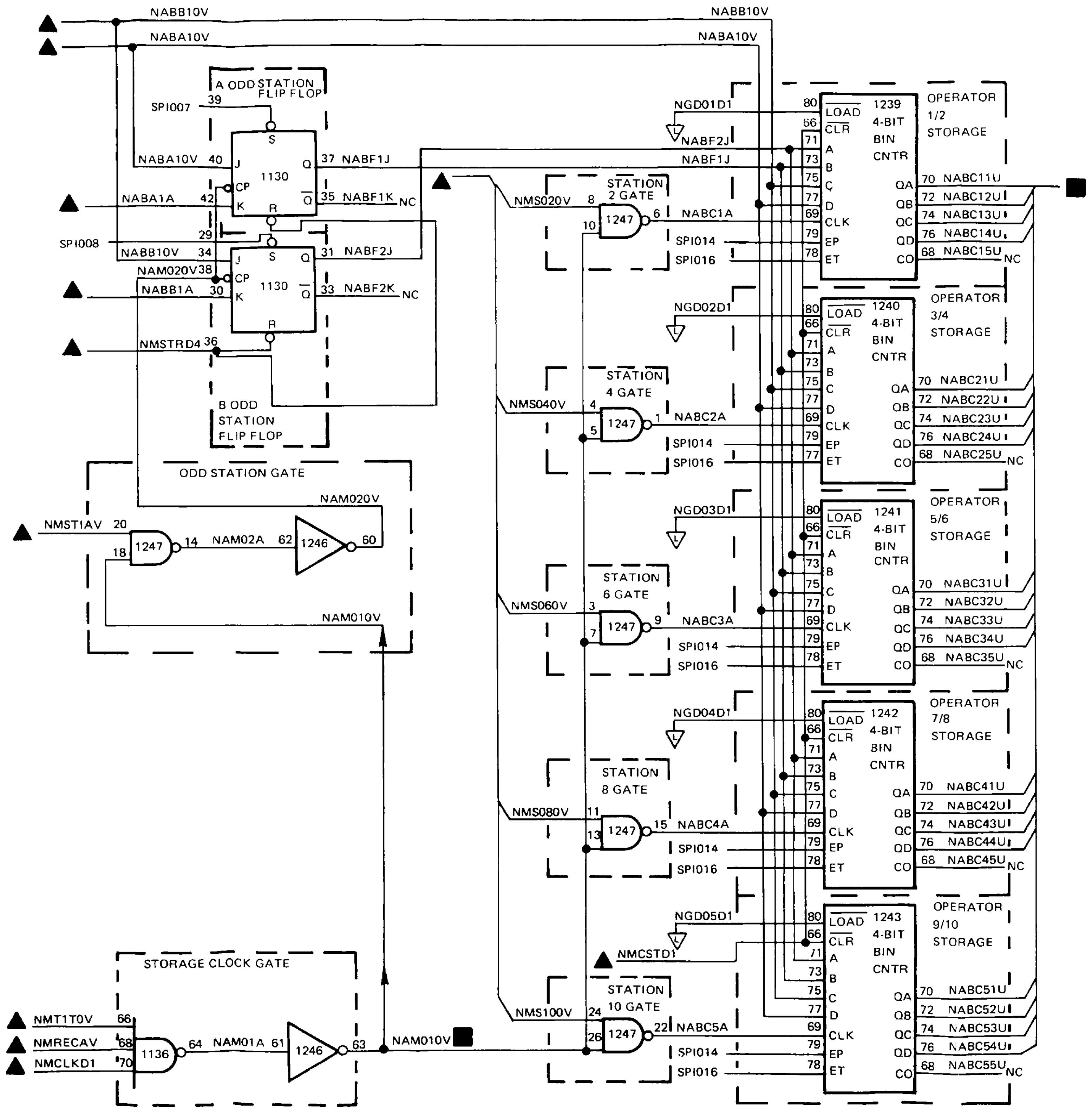
INPUTS	F/O - SH	OUTPUTS	F/O - SH
NC01P0V	6-24-2	NCAT20V	6-2-3
NC02P0V	6-24-2	NCAT30V	6-2-3
NC03P0V	6-24-2	NCAT40V	6-2-3
NC04P0V	6-24-2	NCAT50V	6-2-3
NC05P0V	6-24-2	NCAT60V	6-2-3
NC06P0V	6-24-2	NCAT70V	6-2-3
NC07P0V	6-24-2		
NT01P0V	6-26-2		
NT02P0V	6-26-2		
NT03P0V	6-26-2		
NT04P0V	6-26-2		
NT05P0V	6-26-2		
NT06P0V	6-26-2		
NT07P0V	6-26-2		

OUTPUTS	F/O-SH
NCAR10V	6-2-4
NCAR20V	6-2-4
NCAR30V	6-2-4
NCAR40V	6-2-4
NCAR50V	6-2-4
NCAR70V	6-2-4
NCAT10V	6-2-3


COMMAND ADMINISTRATION PRIVATE LINE
CA RX/TX ENABLE GATING
NANS13E
NANS12E
NANS11E
NANS10E
NANS23E
NANS22E
NANS21E
NBNS13E
NBNS12E
NBNS11E
NBNS10E
NBNS23E
NBNS22E
NBNS21E
NAL01AV
NAL02AV
NAL03AV
NAL04AV
NAL05AV
NAL06AV
NAL07AV
NBL01AV
NBL02AV
NBL03AV
NBL04AV
NBL05AV
NBL06AV
NBL07AV
NT01POV
NT02POV
NT03POV
NT04POV
NT05POV
NT06POV
NT07POV
NC01POV
NC02POV
NC03POV
NC04POV
NC05POV
NC06POV
NC07POV
NCAR1A
NCAR2A
NCAR3A
NCAR4A
NCAR5A
NCAR6A
NCAR7A
NCAT1A
NCAT2A
NCAT3A
NCAT4A
NCAT5A
NCAT6A
NCAT7A
NCAR10V
NCAR20V
NCAR30V
NCAR40V
NCAR50V
NCAR60V
NCAR70V
NCAT10V
NCAT20V
NCAT30V
NCAT40V
NCAT50V
NCAT60V
NCAT70V
1235
1148

FO-14. Net A and B Receive, Logic Diagram (Sheet 4 of 4)

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NABA1A	6-13-0	NAM010V	6-13-0
NABA10V	6-13 0	NABC11U	6-5-0
NABB1A	6-13-0	NABC12U	6-5-0
NABB10V	6-13-0	NABC13U	6-5-0
NMCLKD1	6-27-1	NABC14U	6-5-0
NMCSTD1	6-21-1	NABC21U	6-5-0
NMRECAV	6-27-1	NABC22U	6-5-0
NMSTRD4	6-27-2	NABC23U	6-5-0
NMST1AV	6-27-1	NABC24U	6-5-0
NMS020V	6-27-2	NABC31U	6-5-0
NMS040V	6-27-2	NABC32U	6-5-0
NMS060V	6-27-2	NABC33U	6-5-0
NMS080V	6-27-2	NABC34U	6-5-0
NMS100V	6-27-2	NABC41U	6-5-0
NMT1TOV	6-27-1	NABC42U	6-5-0
		NABC43U	6-5-0
		NABC44U	6-5-0
		NABC51U	6-5-0
		NABC52U	6-5-0
		NABC53U	6-5-0
		NABC54U	6-5-0

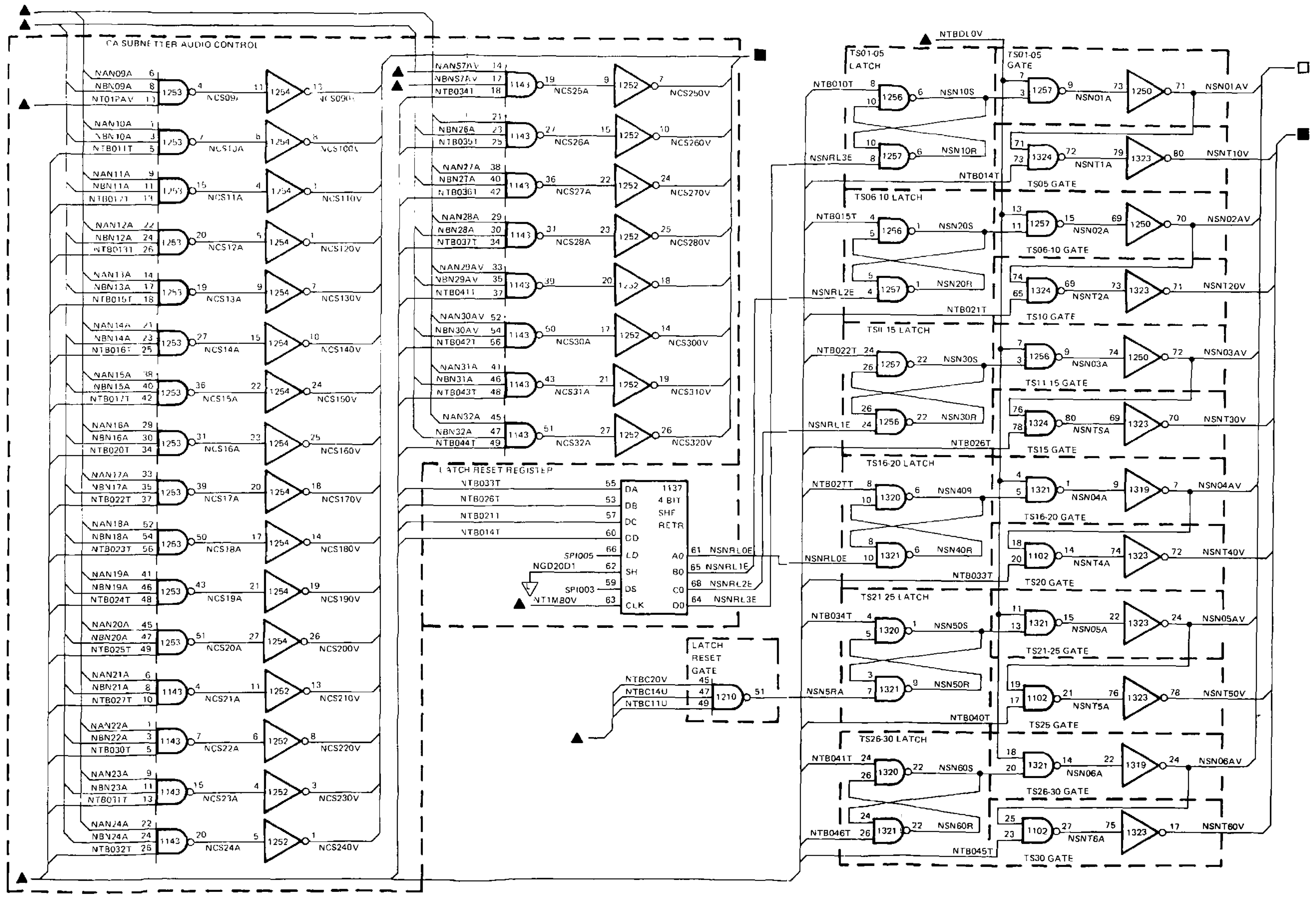

NABB10V
NABA10V
A ODD STATION FLIP FLOP
SPI007
1130
NABA10V
NABA1A
NABF1J
NABF1K
NC
SPI008
NABB10V
NAM020V
NABB1A
NABF2J
NABF2K
NMSTRD4
B ODD STATION FLIP FLOP
ODD STATION GATE
NMST1AV
1247
NAM02A
1246
NAM020V
NAM010V
STORAGE CLOCK GATE
NMT1T0V
NMRECAV
NMCLKD1
1136
NAM01A
1246
NAM010V
NGD01D1
NGD02D1
NGD03D1
NGD04D1
NGD05D1
NMCSTD1
STATION 2 GATE
STATION 4 GATE
STATION 6 GATE
STATION 8 GATE
STATION 10 GATE
NMS020V
NMS040V
NMS060V
NMS080V
NMS100V
NABC1A
NABC2A
NABC3A
NABC4A
NABC5A
SPI014
SPI016
LOAD
CLR
A
B
C
D
CLK
EP
ET
QA
QB
QC
QD
CO
1239 4-BIT BIN CNTR
1240 4-BIT BIN CNTR
1241 4-BIT BIN CNTR
1242 4-BIT BIN CNTR
1243 4-BIT BIN CNTR
OPERATOR 1/2 STORAGE
OPERATOR 3/4 STORAGE
OPERATOR 5/6 STORAGE
OPERATOR 7/8 STORAGE
OPERATOR 9/10 STORAGE
NABC11U
NABC12U
NABC13U
NABC14U
NABC15U
NABC21U
NABC22U
NABC23U
NABC24U
NABC25U
NABC31U
NABC32U
NABC33U
NABC34U
NABC35U
NABC41U
NABC42U
NABC43U
NABC44U
NABC45U
NABC51U
NABC52U
NABC53U
NABC54U
NABC55U
NC

FO-15. Net A and B Operator Storage, Logic Diagram.

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:
   - ▲ INPUT FROM ANOTHER FIGURE
   - △ INPUT FROM SAME FIGURE
   - ■ OUTPUT TO ANOTHER FIGURE
   - ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   - □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXX INDICATES +5 V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ▽ INDICATES AND ACTIVE LOGIC LOW OR ZERO.

INPUTS	F/O-SH	INPUTS	F/O - SH	INPUTS	F/O- SH	OUTPUTS	F/O SH
NANS7AV	6-14 2	NBN23A	6 14-3	NTB043T	6-26-2	NCS090V	6-2-3
NAN09A	6142	NBN24A	6143	NTB044T	6-26-2	NCS100V	6-2 3
NAN10A	6 14-2	NBN26A	6 143	NTB045T	6 26 2	NCS110V	6-2 3
NAN11A	614 2	NBN27A	6 14 3	NTB046T	6 26-2	NCS120V	6 2 3
NAN12A	6 14 2	NBN29AV	6 143	NT01PAV	6-26 2	NCS130V	6-2 3
NAN13A	6-14 2	NBN30AV	6-14 3	NTIMB0V	626-1	NCS140V	6-2 3
NAN14A	6 14 2	NBN31A	6-14-3			NCS150V	6-2 3
NAN15A	6 14 2	NBN32A	6 14 3			NCS160V	6-2-3
NAN16A	6 142	NTBC11U	6 26 2			NCS170V	6 2 3
NAN17A	614 2	NTBC14U	6 26 2			NCS180V	623
NAN18A	6 14 2	NTBC20V	6-26 2			NCS190V	6-2 3
NAN19A	6142	NTBDL0V	626 1			NCS200V	6-2-3
NAN20A	6 142	NTBO10T	6 26 2			NCS210V	6 2 3
NAN21A	6 14 2	NTB011T	6 26 2			NCA220V	6 2 3
NAN22A	6142	NTBO12T	6 26 2			NCS230V	6-2 3
NAN23A	6 142	NTB013T	6 26 2			NCS240V	6-2 3
NAN24A	614-2	NTB014T	6-26 2			NCS250V	6-2-3
NAN26A	614 2	NTB015T	6 26 2			NCS260V	6 2 3
NAN27A	6-14-2	NTB016T	6 26 2			NCS270V	6-2-3
NAN28A	6142	NTB017T	6 26 2			NCS280V	6 2-3
NAN29AV	6 14-2	NTB020T	6-26 2			NCS290V	6-2-3
NAN30AV	6 14-2	NTB021T	6-26 2			NCS300V	6-2-3
NAN31A	614-2	NTB022T	6 26 2			NCS310V	6 2 3
NAN32A	6 14-2	NTB023T	6 26 2			NCS320V	6 2-3
NBNS7AV	6 143	NTB024T	6 26 2			NSNT10V	6 1-3
							6-2-3
NBN09A	6 14-3	NTB025T	6-26 2				6-3-3
NBN10A	6 14 3	NTB026T	6-26-2			NSNT20V	6 1 3
							6-2-3
NBN11A	614-3	NTB027T	6 26 2				6 3-3
NBN12A	6 14 3	NTB030T	6 26 2			NSNT30V	6-1-3
							6-2-3
NBN13A	614-3	NTB031T	6-26 2				6-3-3
NBN14A	614 3	NTB032T	6-26 2			NSNT40V	6 1 3
							6 2-3
NBN15A	614 3	NTB033T	6 26 2				6-3-3
NBN16A	6 14 3	NTB034T	6 26 2			NSNT50V	6 1-3
							6 2-3
NBN17A	614 3	NTB035T	6-26 2				6-3-3
NBN18A	614 3	NTB036T	6-26-2			NSNT60V	6-1 3
							6-2 3
NBN19A	6143	NTB037T	6 26 2				6 3-3
NBN20A	6-14 3	NTB040T	6-26 2				
NBN21A	6-143	NTB041T	6-26 2				
NBN22A	6 143	NTB042T	6-26 2				

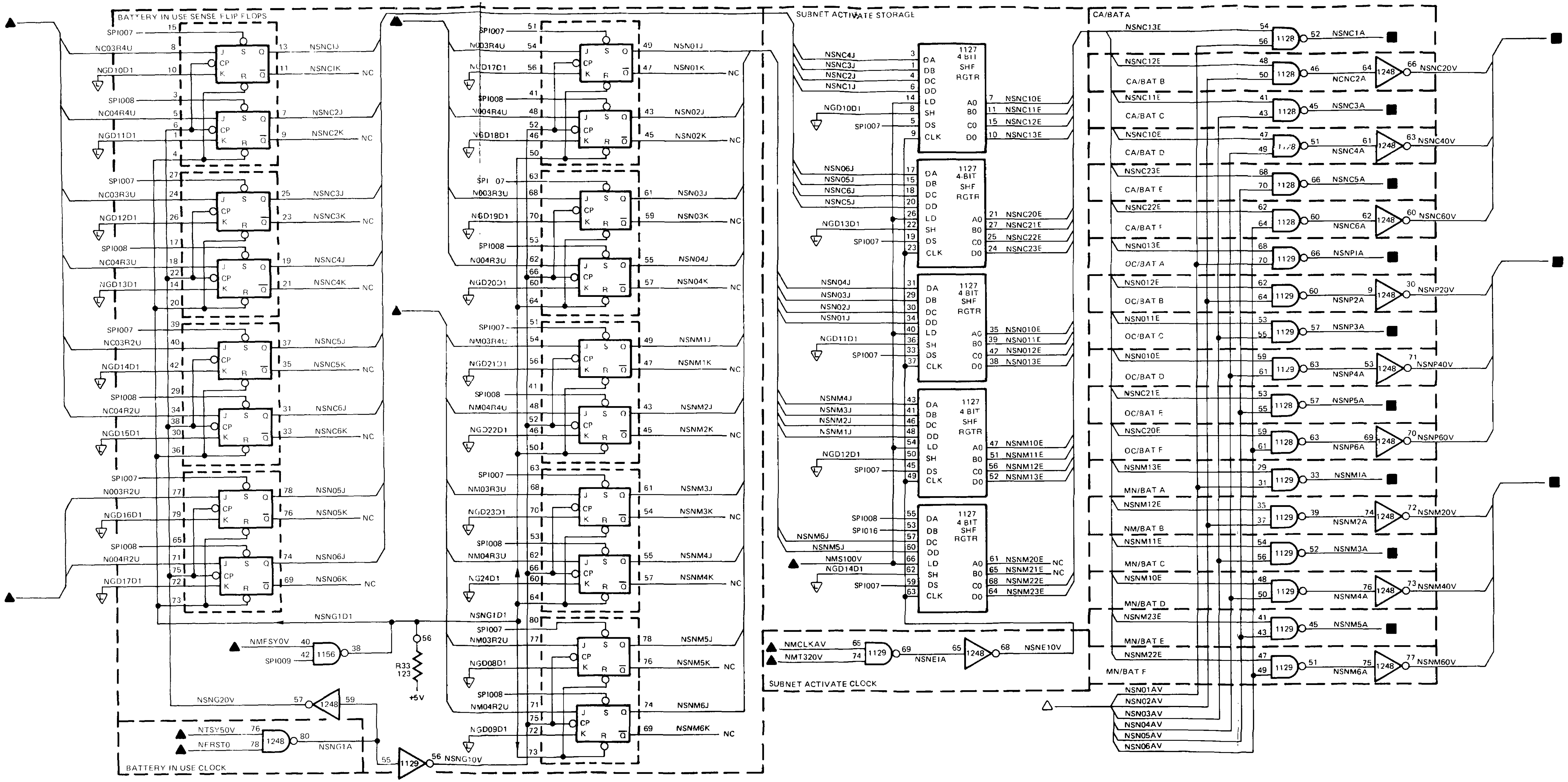

CA SUBNETTER AUDIO CONTROL
LATCH RESET REGISTER
4 BIT SHF RGTR
LATCH RESET GATE
NTBDL0V
TS01-05 LATCH
TS01-05 GATE
TS05 GATE
TS06-10 LATCH
TS06-10 GATE
TS10 GATE
TS11-15 LATCH
TS11-15 GATE
TS15 GATE
TS16-20 LATCH
TS16-20 GATE
TS20 GATE
TS21-25 LATCH
TS21-25 GATE
TS25 GATE
TS26-30 LATCH
TS26-30 GATE
TS30 GATE
NSN01AV
NSNT10V
NSN02AV
NSNT20V
NSN03AV
NSNT30V
NSN04AV
NSNT40V
NSN05AV
NSNT50V
NSN06AV
NSNT60V
NTIMB0V
SPI005
SPI003
NGD20D1

FO-16. Subnetter Control, Logic Diagram (Sheet 1 of 2)

NOTES: UNLESS OTHERWISE SPECIFIED

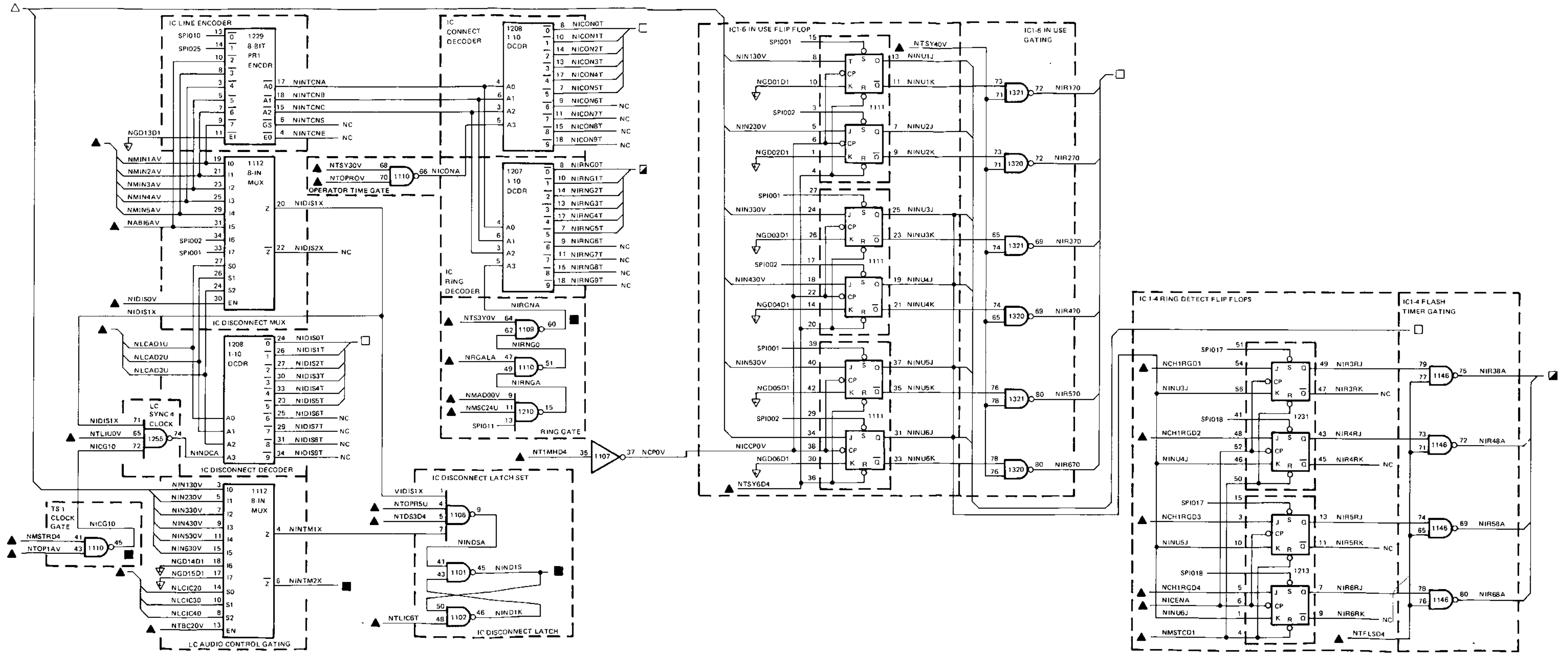
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:
   - ▲ INPUT FROM ANOTHER FIGURE
   - △ INPUT FROM SAME FIGURE
   - ■ OUTPUT TO ANOTHER FIGURE
   - ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   - □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXX INDICATES +5 V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.

INPUTS	F/O-SH	OUTPUTS	F/O-SH
NC03R2U	6-24-1	NSNM20V	6-3-3
NC03R3U	6-24-1	NSNM40V	6-3-3
NC03R4U	6-24-1	NSNM60V	6-3-3
NC04R2U	6-24-1	NSNC1A	6-2-3
NC04R3U	6-24-1	NSNC3A	6-2-3
NC04R4U	6-24-1	NSNCSA	6-2-3
NFRST0	6-26-2	NSNC20V	6-16-2
NMCLKAV	6-27-1	NSNC40V	6-16-2
NMFSY0V	6-27-2	NSNC60V	6-16-2
NMS100V	6-27-2	NSNM1A	6-3-3
NMT320V	6-27-1	NSNM3A	6-3-3
NM03R2U	6-25-1	NSNM5A	6-3-3
NM03R3U	6-25-1	NSNP1 A	6-1-3
MM03R4U	6-25-1	NSNP3A	6-1-3
M04R2U	6-25-1	NSNP5A	6-1-3
NM04R3U	6-25-1	NSNP20V	6-1-3
NM04R4U	6-25-1	NSNP40V	6-1-3
NTSY50V	6-26-3	NSNP60V	6-1-3
N003R2U	6-23-1		
N003R3U	6-23-1		
N003R4U	6-23-1		
N004R2U	6-23-1		
N004R3U	6-23-1		
N004R4U	6-23-1		


BATTERY IN USE SENSE FLIP FLOPS
SUBNET ACTIVATE STORAGE
CA/BATA
SUBNET ACTIVATE CLOCK
BATTERY IN USE CLOCK

FO-16. Subnetter Control, Logic Diagram (Sheet 2 of 2)

INPUTS	F/O-SH	INPUTS	F/O SH	OUTPUTS	F/O-SH
NAB16AV	6-13-0	NTBC20V	6-26-2	NICG10	6-19-0
NCH1RGD1	6-6-0	NTDS3D4	6-26-2	NIND1S	6-20-0
NCH1RGD2	6-6-0	NTFLSD4	6-27-2	NINTM2X	6-19-0
NCH1RGD3	6-6-0	NTL1C6T	6-26-3	NIRGNA	6-18-0
NCH1RGD4	6-6-0	NTLIU0V	6-26 3	NIRNG0T	6-10-2
NICENA	6-18-0	NTSY30V	6-26-3	NIRNG1T	6-10-2
NIDIS0V	6-27-1	NTSY40V	6-26-3	NIRNG2T	6-10-2
NCLAD1U	6-19-0	NTSY6D4	6-26-3	NIRNG3T	6-10-2
NCLAD2U	6-19-0	NTS3Y0V	6-26-3	NIRNG4T	6-10-2
NCLAD3U	6-19-0	NT0PR0V	6-26-3	NIRNG5T	6-10-2
NLCIC2U	6-19-0	NT0PR5U	6-26-3	NIR38A6-8	
NLCIC3U	6-19-0	NT0P1AV	6-26-3	NIR48A6-8	
NLCIC4U	6-19-0	NT1MHD4	6-26-1	NIR58A6-8	
NMAD00V	6-11-2	NIR68A6-8			
NM IN1 AV	6-11 -3				
NM IN2AV	6-11 -3				
NMIN3AV	6-11-3				
NMIN4AV	6-11 -3				
NMIN5AV	6-11 -3				
NMSC24U	6-11 -2				
NMSTCD1	6-27-2				
NMSTRD4	6-27-2				
NRGALA	6-11 -2				


IC LINE ENCODER
IC CONNECT DECODER
IC RING DECODER
RING GATE
OPERATOR TIME GATE
IC DISCONNECT MUX
IC DISCONNECT DECODER
TS1 CLOCK GATE
LC SYNC 4 CLOCK
IC AUDIO CONTROL GATING
IC DISCONNECT LATCH SET
IC DISCONNECT LATCH
IC1-6 IN USE FLIP FLOP
IC1-6 IN USE GATING
IC 1-4 RING DETECT FLIP FLOPS
IC1-4 FLASH TIMER GATING

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.

2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.

3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

   ▲ INPUT FROM ANOTHER FIGURE
   △ INPUT FROM SAME FIGURE
   ■ OUTPUT TO ANOTHER FIGURE
   ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   □ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6- 2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.

5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.

6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

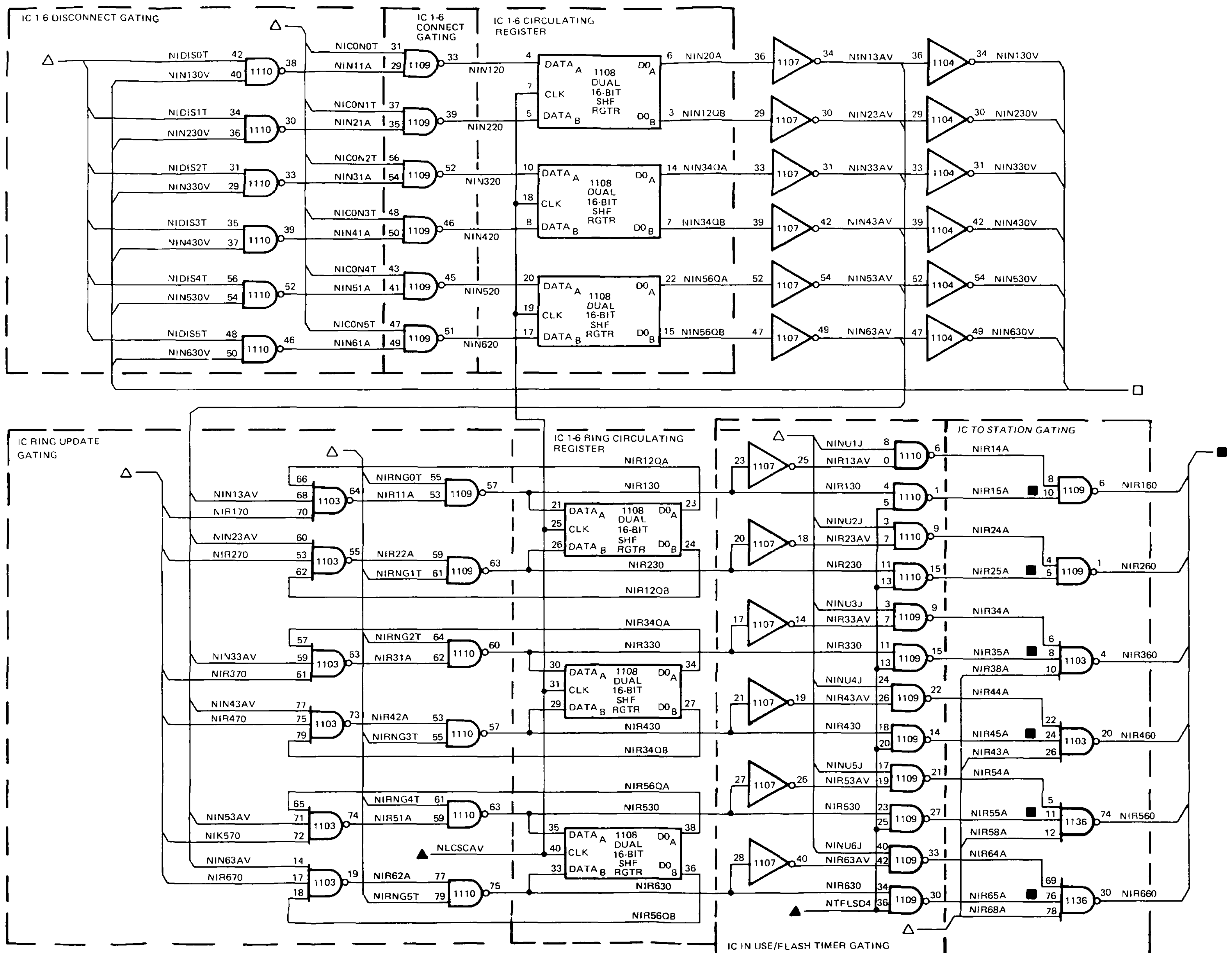
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.

8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.

9. ⏚ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

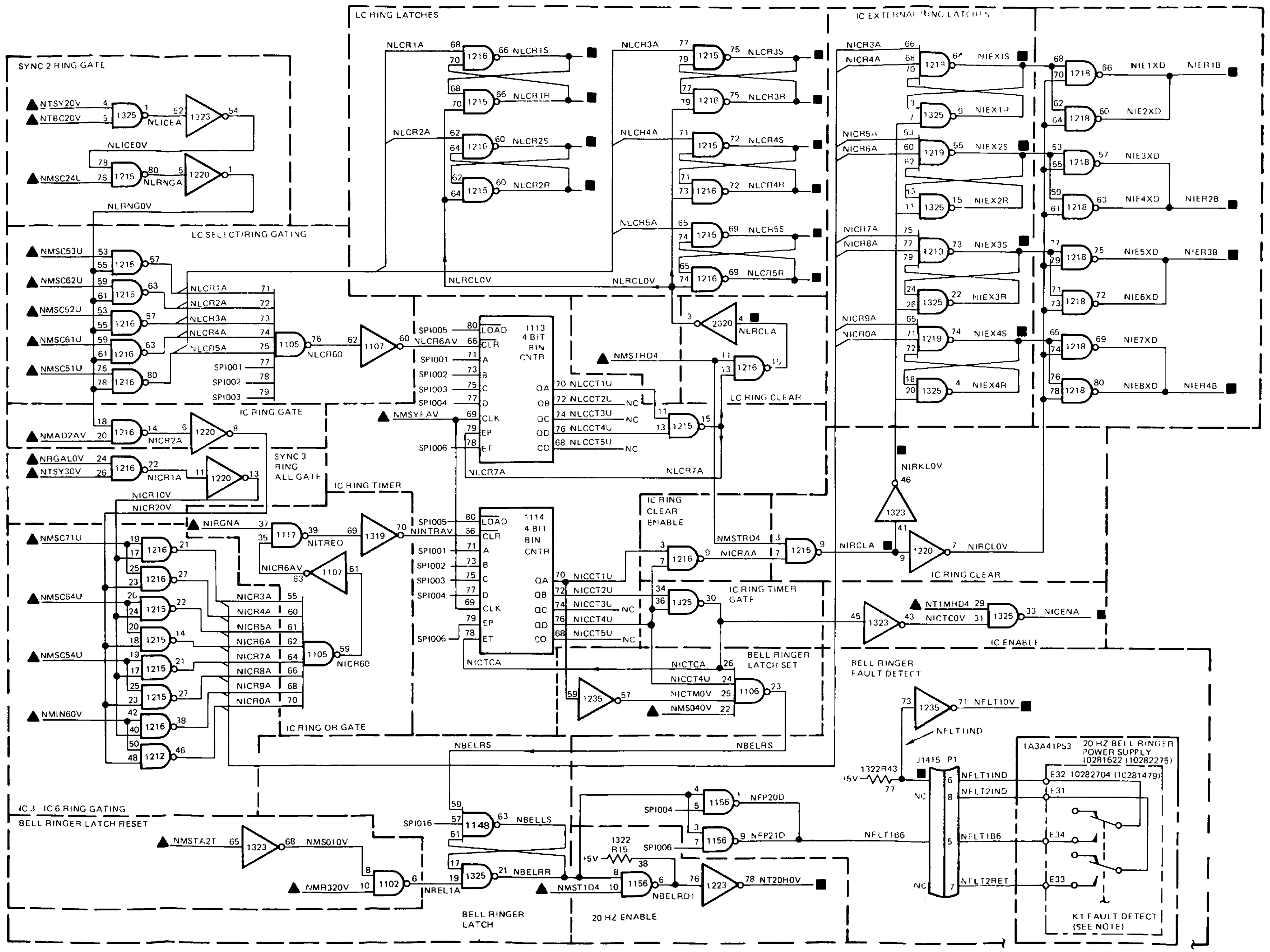
FO-17. Intercomm Net and Ring, Logic Diagram (Sheet 1 of 2)

INPUTS	F/O-SH	OUTPUTS	F/O-SH
NLCSCAV	6-19-0	NIR15A	6-8-0
NTFLSD4	6-27-2	N IR25A	6-8-0
		N1R35A	6-8-0
		NIR45A	6-8-0
		NIR55A	6-8-0
		N1R65A	6-8-0
		NIR160	6-8-0
		NIR260	6-8-0
		NIR360	6-8-0
		NIR460	6-8-0
		NIR560	6-8-0
		NIR660 6-8-0	


IC 1 6 DISCONNECT GATING
IC 1-6 CONNECT GATING
IC 1-6 CIRCULATING REGISTER
1108 DUAL 16-BIT SHF RGTR
IC RING UPDATE GATING
IC 1-6 RING CIRCULATING REGISTER
IC TO STATION GATING
IC IN USE/FLASH TIMER GATING
NLCSCAV
NTFLSD4

FO-17. Intercomm Net and Ring, Logic Diagram (Sheet 2 of 2)

INPUTS	F/O-SH	OUTPUTS	F/O-SH
NIRGNA	6-17-1	NFLT11ND	6-28-2
NMAD2AV	6-11-2	NFLT10V	6-28-1
NMIN60V	6-11-3	N1CENA	6-17-1
NMR320V	6-27-1	N1ER1B	6-6-0
NMSC24U	6-11-2	N1ER2B	6-6-0
NMSC51U	6-11-3	N1ER3B	6-6-0
NMSC52U	6-11 -3	N1 ER4B	6 6 0
NMSC53U	6-11-3	N1EX1S	6-6-0
NMSC54U	6-11 -3	N1 EX2S	6-6-0
NMSC61U	6-11 -3	N1 EX3S	6-6-0
NMSC62U	6-11-3	N1EX4S	6-6-0
NMSC64U	6-11-3	N1RCLA	6-28-3
NMSC71U	6-11-3	N1RKL0V	6-10-2
NMSTA2T	6-27-3	NLCR1S	6-10-2
NMSTRD4	6-27-2	NLCR2S	6-10-2
NMST1D4	6-27-1	NLCR3S	6-10-2
NMSYFAV	6-27-2	NLCR4S	6-10-2
NMS040V	6-27-2	NLCR5S	6-10-2
NRGAL0V	6-11-2	NLCR1R	6-7-3
NTBC20V	6-26-2	NLCR2R	6-7-3
NTSY20V	6-26-3	NLCR3R	6-7-3
NTSY30V	6-26-3	NLCR4R	6-7-3
NT1MHD4	6-26-1	NLCR5R	6-7-3
		NLRCLA	6-28-3
		NT20H0V	6-6-0

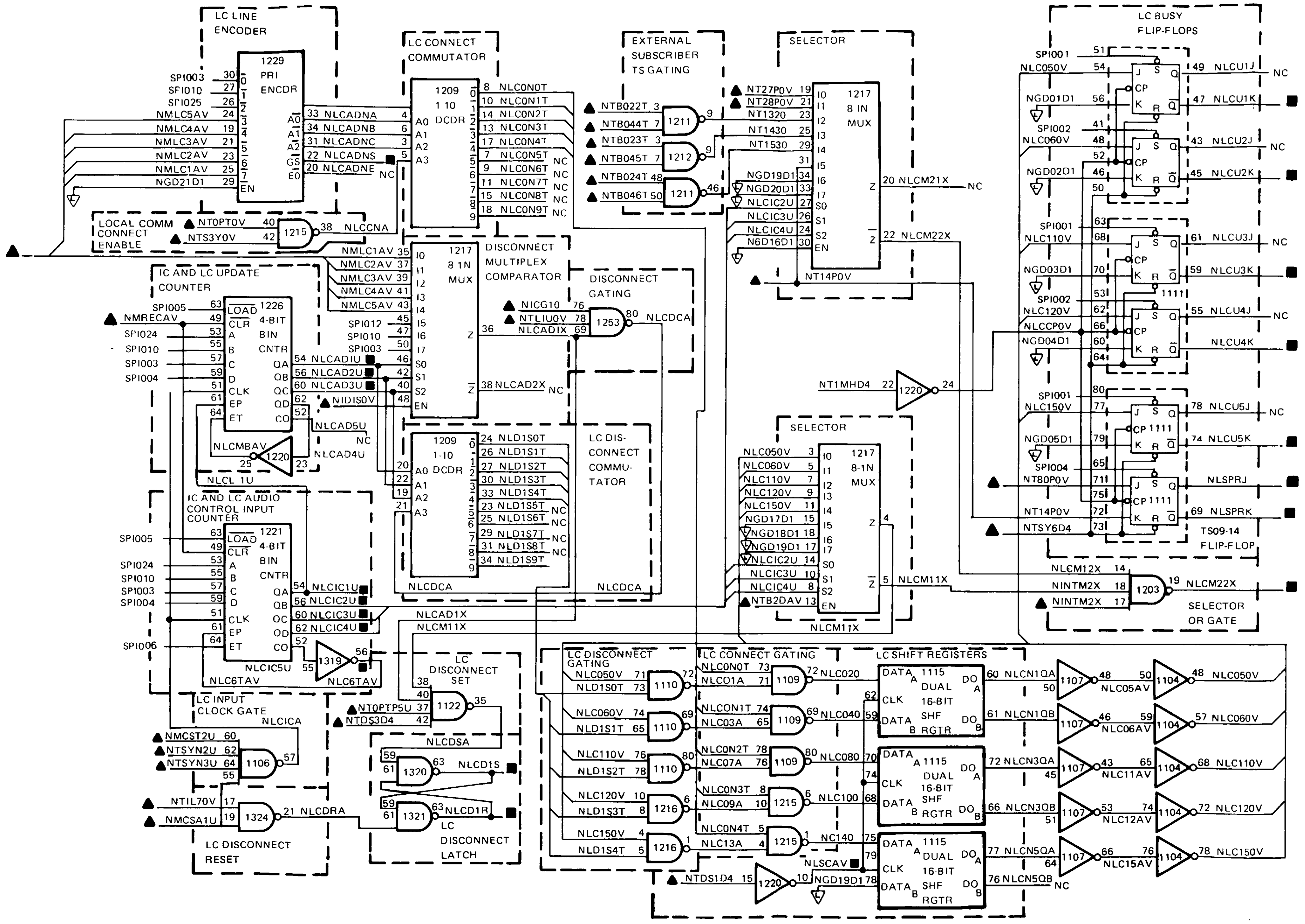

SYNC 2 RING GATE
LC RING LATCHES
IC EXTERNAL RING LATCHES
LC SELECT/RING GATING
LC RING GATE
SYNC 3 RING ALL GATE
IC RING TIMER
LC RING CLEAR
IC RING CLEAR ENABLE
IC RING CLEAR
IC RING TIMER GATE
IC ENABLE
BELL RINGER LATCH SET
BELL RINGER FAULT DETECT
IC RING OR GATE
IC 3 IC 6 RING GATING
BELL RINGER LATCH RESET
BELL RINGER LATCH
20 HZ ENABLE
1A3A41PS3 20 HZ BELL RINGER POWER SUPPLY
K1 FAULT DETECT (SEE NOTE)
NMSC24L
NMSC53U
NMSC62U
NMSC52U
NMSC61U
NMSC51U
NMAD2AV
NRGAL0V
NTSY30V
NMSC71U
NMSC64U
NMSC54U
NMIN60V
NIRGNA
NMSYFAV
NMS1HD4
NMSTRD4
NT1MHD4
NMS040V
NMSTA2T
NMR320V
NMST1D4
NTSY20V
NTBC20V
NLCR1S
NLCR1R
NLCR2S
NLCR2R
NLCR3S
NLCR3R
NLCR4S
NLCR4R
NLCR5S
NLCR5R
NLRCLA
N1EX1S
N1EX2S
N1EX3S
N1EX4S
N1ER1B
N1ER2B
N1ER3B
N1ER4B
N1RKL0V
N1CENA
NFLT10V
NFLT11ND
NT20H0V
NBELLS
NBELRR
NBELRS
1113 4 BIT BIN CNTR
1114 4 BIT BIN CNTR
J1415 P1

FO-18. Intercomm and Local Comm External Ring, Logic Diagram

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:
   - ▲ INPUT FROM ANOTHER FIGURE
   - △ INPUT FROM SAME FIGURE
   - ■ OUTPUT TO ANOTHER FIGURE
   - ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   - □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6- 2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.

INPUTS	F/O-SH	INPUTS	F/O-SH	OUTPUTS	F/O-SH
NICG10	6-17-1	NTLIU0V	6-26-3	NLCADNS	6-13-0
NIDIS0V	6-27-1	NTSYN2U	6-26-3	NLCAD1U	6-17-1
NINTM2X	6-17-1	NTSYN3U	6-26-3	NLCAD2U	6-17-1
NMCSA1U	6-27-1	NTSY6D4	6-26-3	NLCAD3U	6-17-1
NMCST2U	6-27-1	NTS3Y0V	6-26-3	NLCD1R	6-20-1
NMLC1AV	6-11-3	NT0PT0V	6-26-3	NLCD1S	6-20-1
NMLC2AV	6-11-3	NT0PT5U	6-26-3	NLCIC1U	6-20-1
NMLC3AV	6-11 -3	NT1MHD4	6-26-1		6-26-3
NMLC4AV	6-11-3	NT14P0V	6-26-2	NLCIC2U	6-17-1
NMLC5AV	6-11-3	NT27P0V	6-26-2	NLCIC3U	6-17-1
NMRECAV	6-27-1	NT28P0V	6-26-2	NLCIC4U	6-17 1
NTB022T	6-26-2	NT80P0V	6-26-2	NLCU1K	6-9-3
NTB023T	6-26-2			NLCU2K	6-9-3
NTB024T	6-26-2			NLCU3K	6-9-3
NTB044T	6-26-2			NLCU4K	6-9-3
NTB045T	6-26-2			NLCU5K	6-9-3
NTB046T	6-26-2			NLC160	6-20-1
NTB2DAV	6-26-2				6-20-2
NTDS1D4	6-26-1			NLC6TAV	6-20-1
NTDS3D4	6-26-1				6-26-3
NTIL70V	6-26-3			NLCSCAV	6-17-2
				NLSPRJ	6-10-1
					6-11-2
				NLSPRK	6-10-1

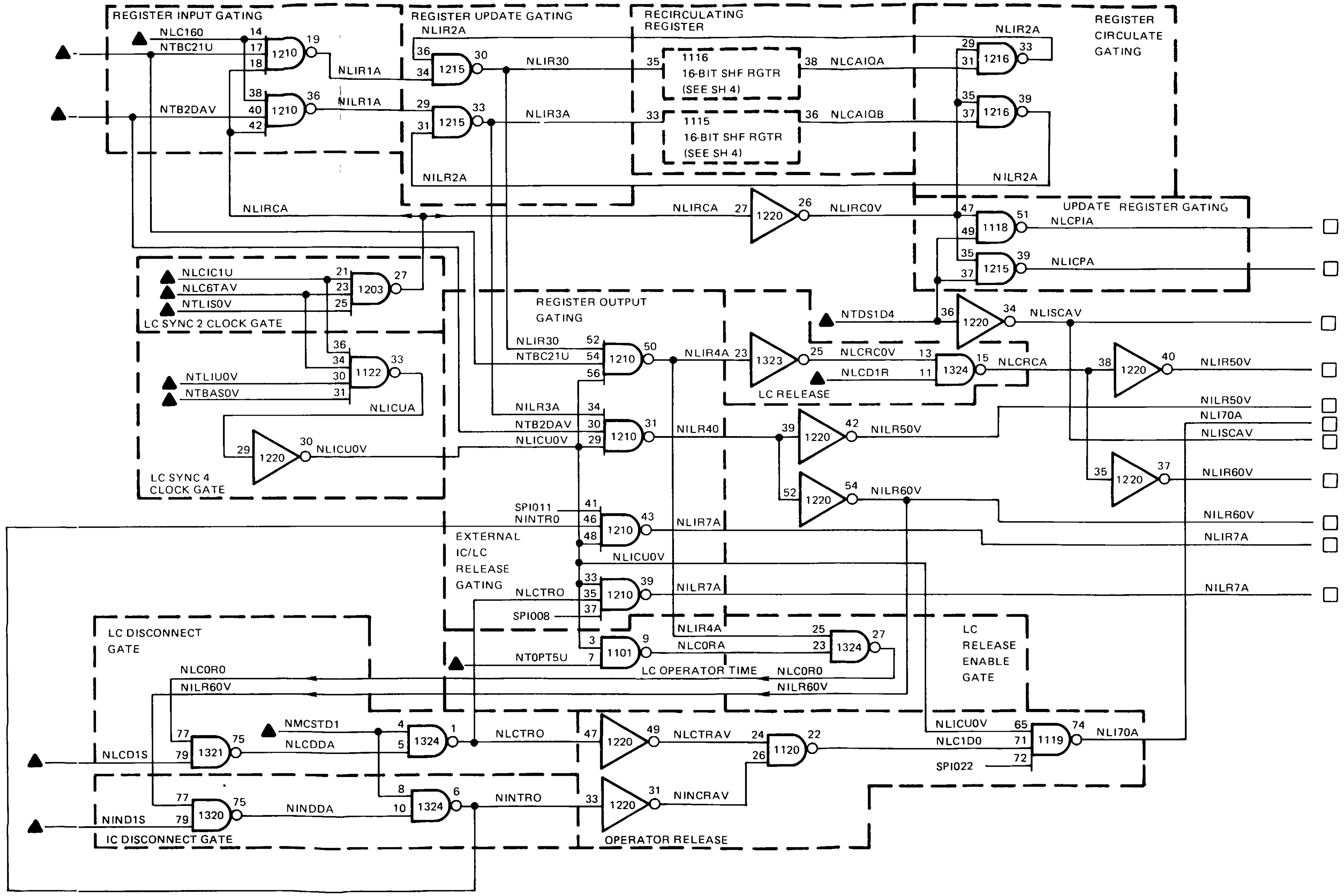

LC LINE ENCODER
LC CONNECT COMMUTATOR
EXTERNAL SUBSCRIBER TS GATING
SELECTOR
LC BUSY FLIP-FLOPS
LOCAL COMM CONNECT ENABLE
IC AND LC UPDATE COUNTER
DISCONNECT MULTIPLEX COMPARATOR
DISCONNECT GATING
LC DISCONNECT COMMUTATOR
SELECTOR
TS09-14 FLIP-FLOP
IC AND LC AUDIO CONTROL INPUT COUNTER
SELECTOR OR GATE
LC INPUT CLOCK GATE
LC DISCONNECT SET
LC DISCONNECT GATING
LC CONNECT GATING
LC SHIFT REGISTERS
LC DISCONNECT RESET
LC DISCONNECT LATCH

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:
   - ▲ INPUT FROM ANOTHER FIGURE
   - △ INPUT FROM SAME FIGURE
   - ■ OUTPUT TO ANOTHER FIGURE
   - ◩ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   - □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6- 2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ⏚ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

FO-19. Logic Comm Net Storage, Logic Diagram

INPUTS	F/O - SH
NINDIS	6 17 1
NLCIC1U	6-19-0
NLCD1R	6-19-0
NLCD1S	6 19-0
NLC160	6-19 0
NLC6TAV	6-19-0
NMCSTD1	6 19-0
NTBASOV	6 26-1
NTBC21U	6-26-2
NTB2DAV	6-26-2
NTDS1D4	6-26-1
NTLISOV	6-26-3
NTLIUOV	6 26-3
NTOPT5U	6-26-3


REGISTER INPUT GATING
REGISTER UPDATE GATING
RECIRCULATING REGISTER
REGISTER CIRCULATE GATING
UPDATE REGISTER GATING
LC SYNC 2 CLOCK GATE
LC SYNC 4 CLOCK GATE
REGISTER OUTPUT GATING
LC RELEASE
EXTERNAL IC/LC RELEASE GATING
LC DISCONNECT GATE
IC DISCONNECT GATE
LC RELEASE ENABLE GATE
OPERATOR RELEASE
LC OPERATOR TIME
1116 16-BIT SHF RGTR (SEE SH 4)
1115 16-BIT SHF RGTR (SEE SH 4)
NLC160
NTBC21U
NTB2DAV
NLIR1A
NLIR2A
NLIR30
NLIR3A
NLCAIOA
NLCAIOB
NLIRCA
NLIRCOV
NLCPIA
NLICPA
NLCIC1U
NLC6TAV
NTLISOV
NTLIUOV
NTBASOV
NLICUA
NLICUOV
NTDS1D4
NLISCAV
NLIR4A
NLCRCOV
NLCD1R
NLCRCA
NLIR50V
NLIR40
NLIR60V
NLI70A
NLISCAV
NLIR7A
SPI011
NINTRO
SPI008
NLCTRO
NTOPT5U
NLCORA
NLCOR0
NLIR60V
NMCSTD1
NLCDDA
NLCD1S
NIND1S
NINDDA
NINTRO
NLCTRAV
NINCRAV
NLICUOV
NLC1D0
SPI022
1210
1215
1216
1220
1118
1203
1122
1323
1324
1101
1321
1320
1120
1119

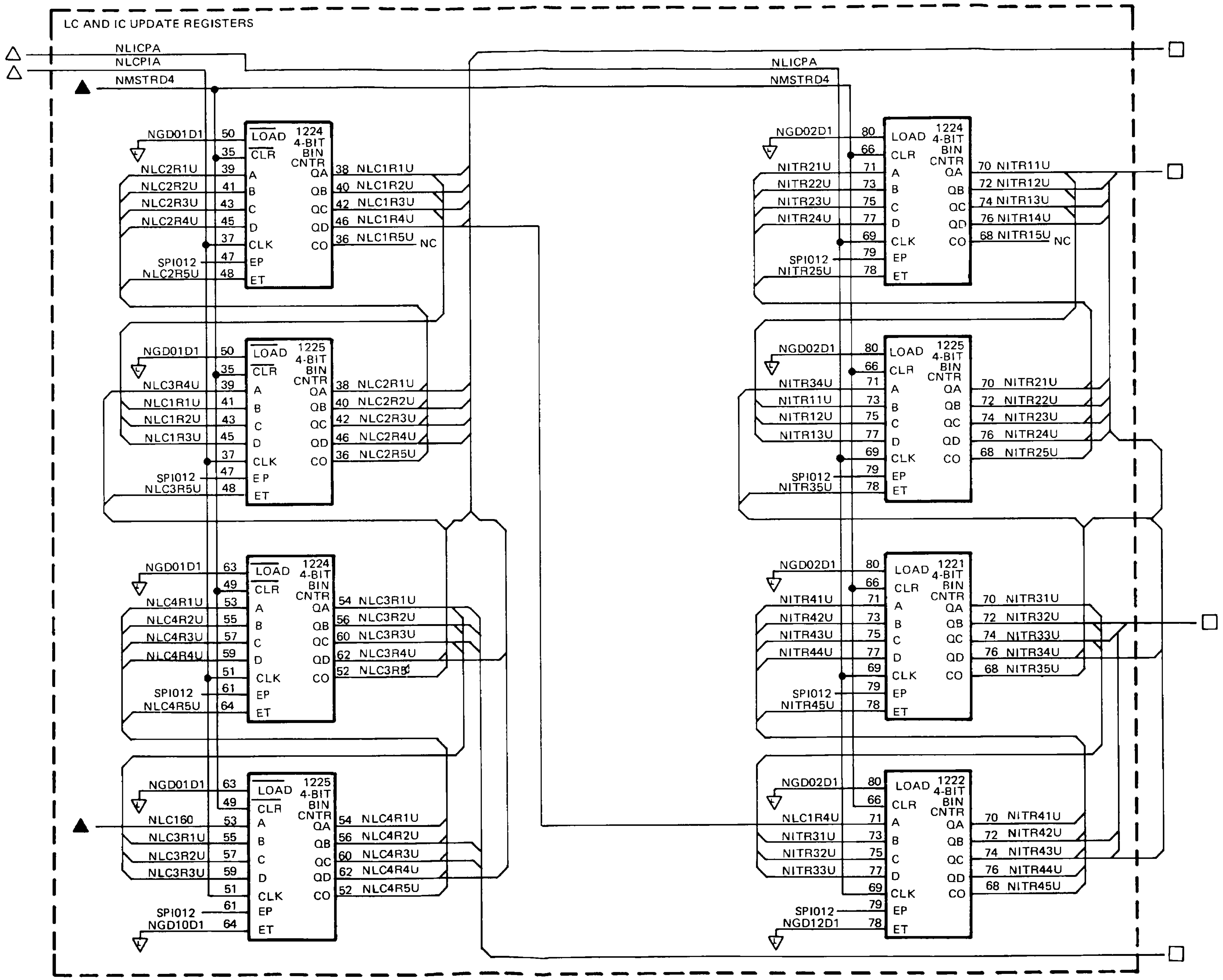
NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

   ▲ INPUT FROM ANOTHER FIGURE
   △ INPUT FROM SAME FIGURE
   ■ OUTPUT TO ANOTHER FIGURE
   ◩ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   ☐ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6- 2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ⏚ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

FO-20. Intercomm and Local Comm Audio Receive, Logic Diagram (Sheet 1 of 4)

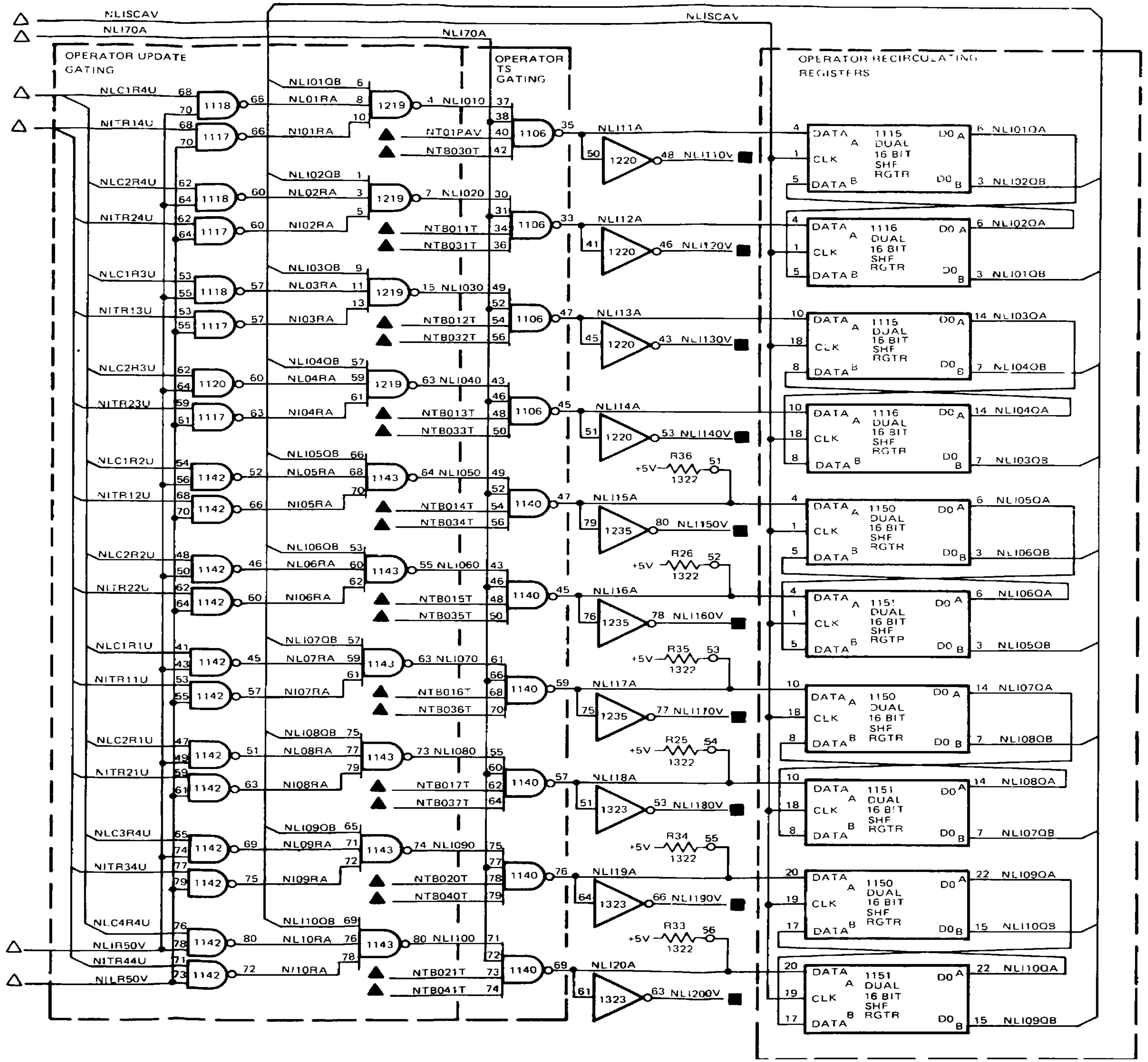
Inputs	F/O - SH
NLC160	6-19-0
NMSTRD4	6-27-2


LC AND IC UPDATE REGISTERS
NLICPA
NLCPIA
NMSTRD4
1224 4-BIT BIN CNTR
1225 4-BIT BIN CNTR
1224 4-BIT BIN CNTR
1225 4-BIT BIN CNTR
1224 4-BIT BIN CNTR
1225 4-BIT BIN CNTR
1221 4-BIT BIN CNTR
1222 4-BIT BIN CNTR
LOAD
CLR
A
B
C
D
CLK
EP
ET
QA
QB
QC
QD
CO
NGD01D1
NGD02D1
NGD10D1
NGD12D1
SPI012
NLC2R1U
NLC2R2U
NLC2R3U
NLC2R4U
NLC2R5U
NLC1R1U
NLC1R2U
NLC1R3U
NLC1R4U
NLC1R5U
NC
NLC3R4U
NLC3R5U
NLC3R1U
NLC3R2U
NLC3R3U
NLC4R1U
NLC4R2U
NLC4R3U
NLC4R4U
NLC4R5U
NLC160
NITR21U
NITR22U
NITR23U
NITR24U
NITR25U
NITR11U
NITR12U
NITR13U
NITR14U
NITR15U
NITR34U
NITR35U
NITR31U
NITR32U
NITR33U
NITR41U
NITR42U
NITR43U
NITR44U
NITR45U
NLC1R4U

FO-20. Intercomm and Local Comm Audio Receive, Logic Diagram (Sheet 2 of 4)

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NTBO11T	6-26-2	NLI130V	6-7-3
NTB012T	6-26-2	NLI140V	6-7-3
NTB013T	6-26-2	NLI 150V	6-7-3
NTBO14T	6-26-2	NLI 160V	6-7-3
NTBO15T	6 26-2	NLI170V	6-7-3
NTB016T	6-26-2	NLI180V	6-7-3
NTB017T	6-26-2	N LI 190V	6-7-3
NTBO20T	6-26-2	NLI200V	6-7-3
NTB021T	6-26-2		
NTB030T	6-26-2		
NTB031T	6.26-2		
NTBO32T	6-26 2		
NTBO33T	6-26-2		
NTBO34T	6-?6-2		
NTBO35T	6-26-2		
NTBO36T	6-26-2		
NTB037T	6-26-2		
NTB040T	6-26-2		
NTB041T	6-26-2		
NT01PAV	6-26-2		

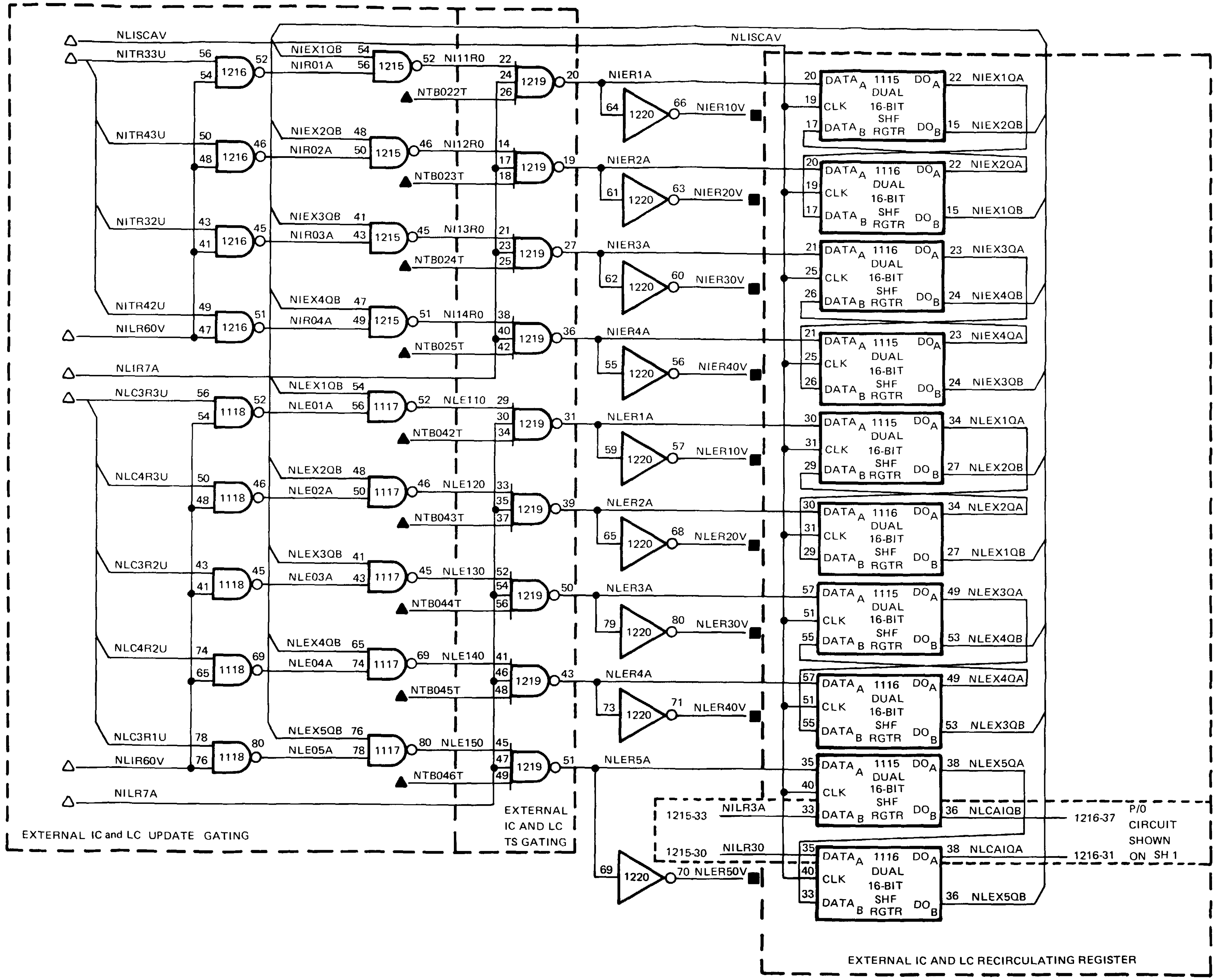
OUTPUTS	F/O - SH
NLI110OV	6-7-3
NLI120V	6-7-3



NLISCAV
NLI70A
OPERATOR UPDATE GATING
OPERATOR TS GATING
OPERATOR RECIRCULATING REGISTERS
NLC1R4U
NITR14U
NLC2R4U
NITR24U
NLC1R3U
NITR13U
NLC2R3U
NITR23U
NLC1R2U
NITR12U
NLC2R2U
NITR22U
NLC1R1U
NITR11U
NLC2R1U
NITR21U
NLC3R4U
NITR34U
NLC4R4U
NLIR50V
NITR44U
NILR50V
1118
1117
1120
1142
1219
1143
1106
1140
1220
1235
1323
NLI01QB
NL01RA
NI01RA
NLI010
NLI02QB
NL02RA
NI02RA
NLI020
NLI03QB
NL03RA
NI03RA
NLI030
NLI04QB
NL04RA
NI04RA
NLI040
NLI05QB
NL05RA
NI05RA
NLI050
NLI06QB
NL06RA
NI06RA
NLI060
NLI07QB
NL07RA
NI07RA
NLI070
NLI08QB
NL08RA
NI08RA
NLI080
NLI09QB
NL09RA
NI09RA
NLI090
NLI10QB
NL10RA
NI10RA
NLI100
NT01PAV
NT8030T
NTB011T
NT8031T
NT8012T
NTB032T
NTB013T
NTB033T
NTB014T
NTB034T
NTB015T
NTB035T
NTB016T
NTB036T
NTB017T
NTB037T
NTB020T
NT8040T
NTB021T
NTB041T
NLI11A
NLI12A
NLI13A
NLI14A
NLI15A
NLI16A
NLI17A
NLI18A
NLI19A
NLI20A
NLI110V
NLI120V
NLI130V
NLI140V
NLI150V
NLI160V
NLI170V
NLI180V
NLI190V
NLI200V
R36
R26
R35
R25
R34
R33
+5V
1322
DATA A
CLK
DATA B
DO A
DO B
1115 DUAL 16 BIT SHF RGTR
1116 DUAL 16 BIT SHF RGTR
1115 DUAL 16 BIT SHF RGTR
1116 DUAL 16 BIT SHF RGTR
1150 DUAL 16 BIT SHF RGTR
1151 DUAL 16 BIT SHF RGTP
1150 DUAL 16 BIT SHF RGTR
1151 DUAL 16 BIT SHF RGTR
1150 DUAL 16 BIT SHF RGTR
1151 DUAL 16 BIT SHF RGTR
NLI01QA
NLI02QB
NLI02QA
NLI01QB
NLI03QA
NLI04QB
NLI04QA
NLI03QB
NLI05QA
NLI06QB
NLI06QA
NLI05QB
NLI07QA
NLI08QB
NLI08QA
NLI07QB
NLI09QA
NLI10QB
NLI10QA
NLI09QB

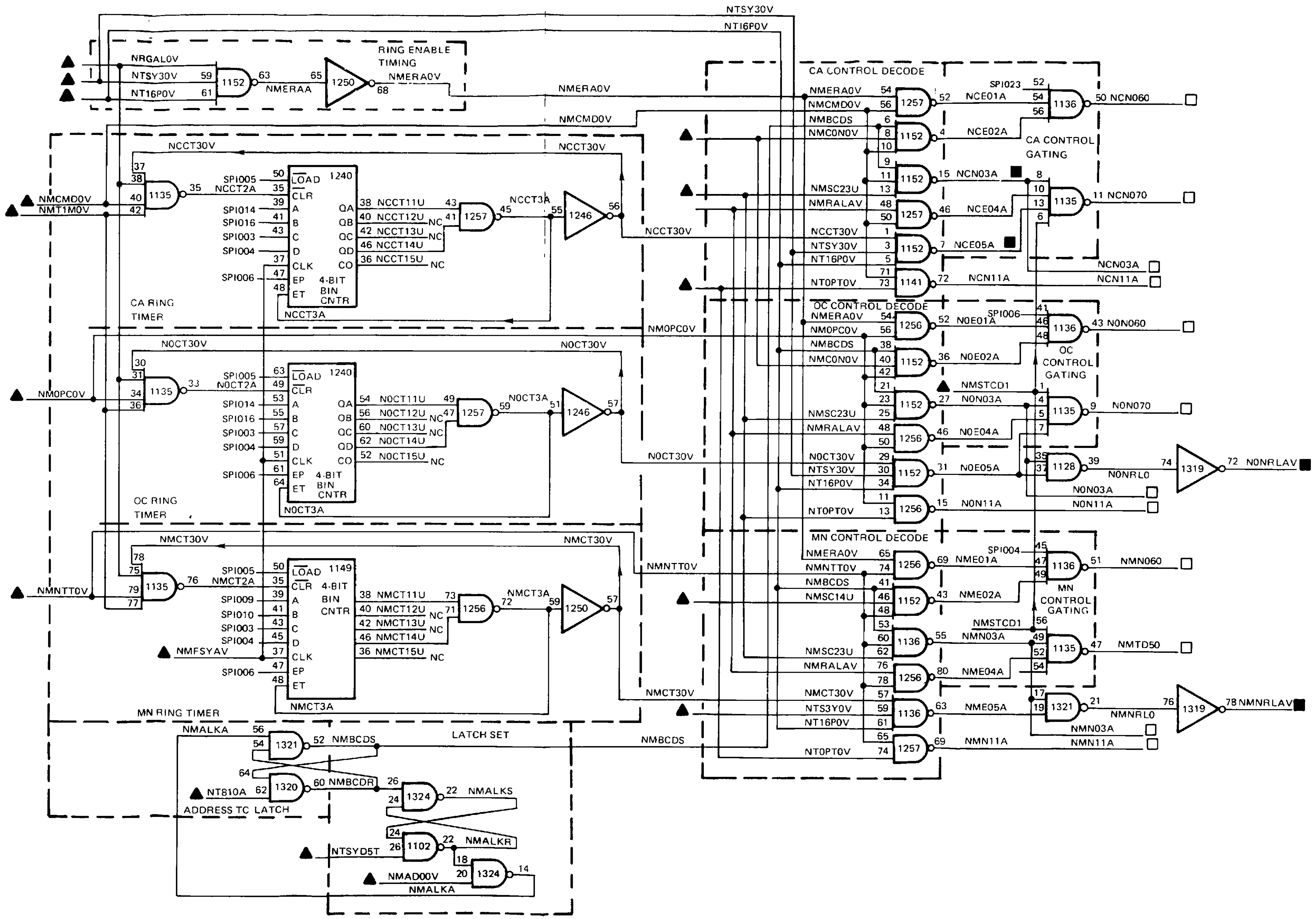
FO-20. Intercomm and Local Comm audio Receive, Logic Diagram (Sheet 3 of 4)

INPUTS	F/O - SH	OUTPUTS	F.O - SH
NTB022T	6-26-2	N1ER10V	6-7-2
NTB023T	6-26-2	N1ER20V	6-7-2
NTB024T	6-26-2	N1ER30V	6-7-2
NTB025T	6-26-2	N1ER40V	6-7-2
NTB042T	6-26-2	N1ER10V	6-7-2
NTB043T	6-26-2	N1ER20V	6-7-2
NTB044T	6-26-2	N1ER30V	6-7-2
NTB045T	6-26-2	N1ER40V	6-7-2
NTB046T	6-26-2	N1ER50V	6-7-2


NLISCAV
NITR33U
NITR43U
NITR32U
NITR42U
NILR60V
NLIR7A
NLC3R3U
NLC4R3U
NLC3R2U
NLC4R2U
NLC3R1U
NLIR60V
NILR7A
1216
1118
1215
1117
1219
1220
NIEX1QB
NIR01A
NIEX2QB
NIR02A
NIEX3QB
NIR03A
NIEX4QB
NIR04A
NLEX1QB
NLE01A
NLEX2QB
NLE02A
NLEX3QB
NLE03A
NLEX4QB
NLE04A
NLEX5QB
NLE05A
NI11R0
NI12R0
NI13R0
NI14R0
NLE110
NLE120
NLE130
NLE140
NLE150
NTB022T
NTB023T
NTB024T
NTB025T
NTB042T
NTB043T
NTB044T
NTB045T
NTB046T
NIER1A
NIER2A
NIER3A
NIER4A
NLER1A
NLER2A
NLER3A
NLER4A
NLER5A
NIER10V
NIER20V
NIER30V
NIER40V
NLER10V
NLER20V
NLER30V
NLER40V
NLER50V
DATA A
CLK
DATA B
DO A
DO B
1115 DUAL 16-BIT SHF RGTR
1116 DUAL 16-BIT SHF RGTR
NIEX1QA
NIEX2QB
NIEX2QA
NIEX1QB
NIEX3QA
NIEX4QB
NIEX4QA
NIEX3QB
NLEX1QA
NLEX2QB
NLEX2QA
NLEX1QB
NLEX3QA
NLEX4QB
NLEX4QA
NLEX3QB
NLEX5QA
NLCAIQB
NLCAIQA
NLEX5QB
NILR3A
NILR30
1215-33
1215-30
1216-37
1216-31
P/0 CIRCUIT SHOWN ON SH 1
EXTERNAL IC and LC UPDATE GATING
EXTERNAL IC AND LC TS GATING
EXTERNAL IC AND LC RECIRCULATING REGISTER

FO-20. Intercomm and Local Comm Audio Receive, Logic Diagram (Sheet 4 of 4)

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NMADOOV	6-11-2	NMBCDS	6-8-0
NMCMDOV	6-11-3	NCE05A	6-22-0
NMCONOV	6-11-2	NCN03A	6-22-0
NMFSYAV	6-27-2	NMNRLAV	6-22-0
NMNTTOV	6-11-3	NONRLA	6 22-0
NMOPCOV	6-11-3		
NMRALAV	6-11-2		
NMSC14U	6-11-2		
NMSC23U	6-11-2		
NMSTCD1	6-27-2		
NMT1MOV	6-26-3		
NRGALOV	6-11-2		
NTSYD5T	6-26-3		
NTSY30V	6-26-3		
NTS3YOV	6-26-3		
NTOPTOV	6-26-3		
NT16POV	6-26-2		
NT810A	6-26-1		

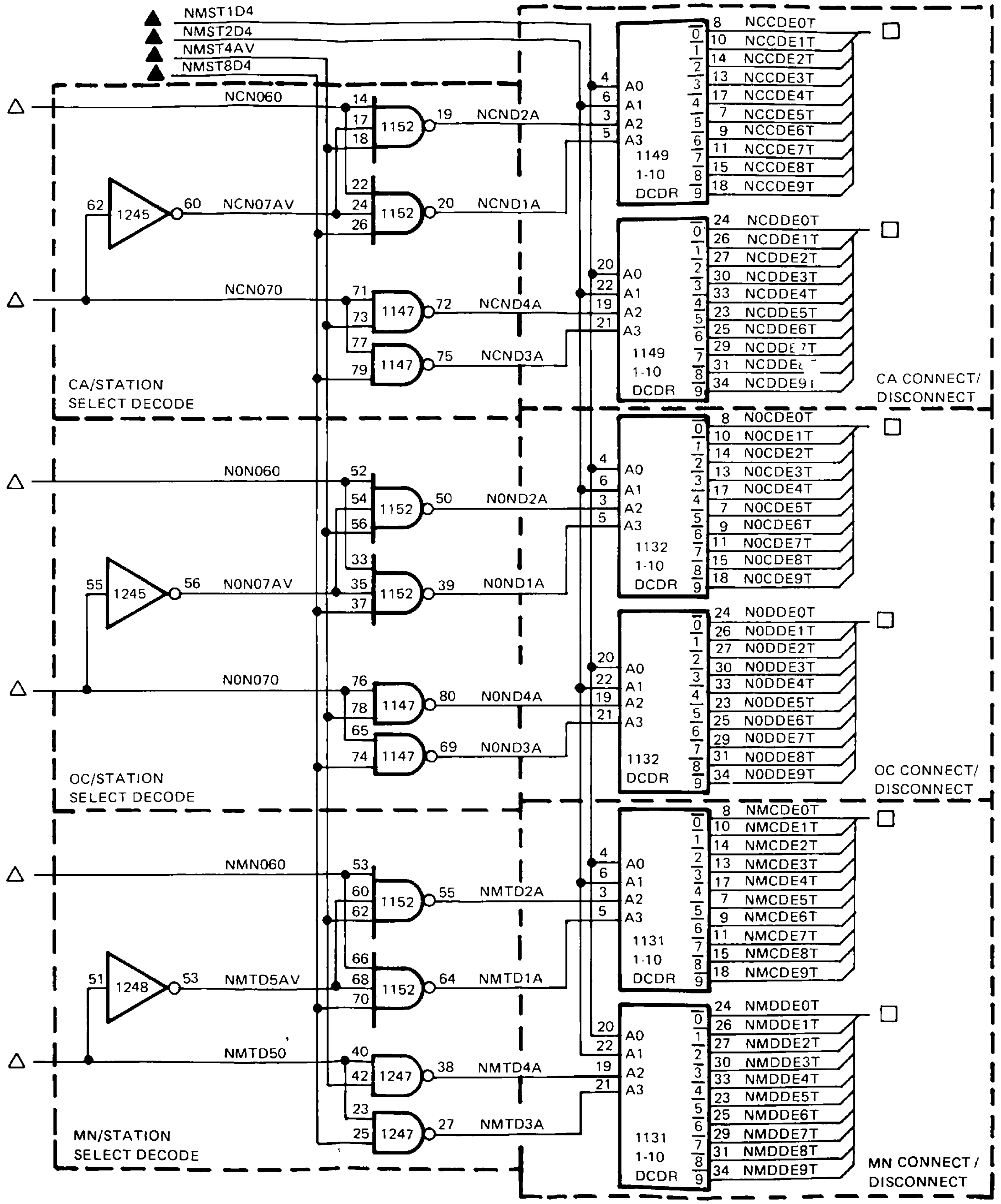

RING ENABLE TIMING
NRGALOV
NTSY30V
NT16POV
NMERAA
NMERAOV
NMCMDOV
NCCT30V
NMCMDOV
NMT1MOV
CA RING TIMER
4-BIT BIN CNTR
NCCT3A
NMOPCOV
NOCT30V
OC RING TIMER
NOCT3A
NMNTTOV
NMCT30V
NMFSYAV
MN RING TIMER
NMCT3A
NMALKA
NMBCDS
LATCH SET
NT810A
NMBCDR
ADDRESS TC LATCH
NMALKS
NTSYD5T
NMALKR
NMADOOV
CA CONTROL DECODE
CA CONTROL GATING
NCE01A
NCE02A
NCN03A
NCE04A
NCE05A
NCN11A
NCN060
NCN070
OC CONTROL DECODE
OC CONTROL GATING
NOE01A
NOE02A
NMSTCD1
NON03A
NOE04A
NOE05A
NON11A
NON060
NON070
NONRL0
NONRLAV
MN CONTROL DECODE
MN CONTROL GATING
NME01A
NME02A
NMN03A
NME04A
NME05A
NMN11A
NMN060
NMTD50
NMNRL0
NMNRLAV

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FORM ARE CONTAINED IN CARD CAGE A3A41A2.
3. DEFINITIONS FOR SYMBOLS SHOWN ARE AS FOLLOWS:
   - ▲ INPUT FROM ANOTHER FIGURE
   - △ INPUT FROM SAME FIGURE
   - ■ OUTPUT TO ANOTHER FIGURE
   - ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   - □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CAR LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5 V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. V INDICATES AN ACTIVE LOGIC LOW OR ZERO.

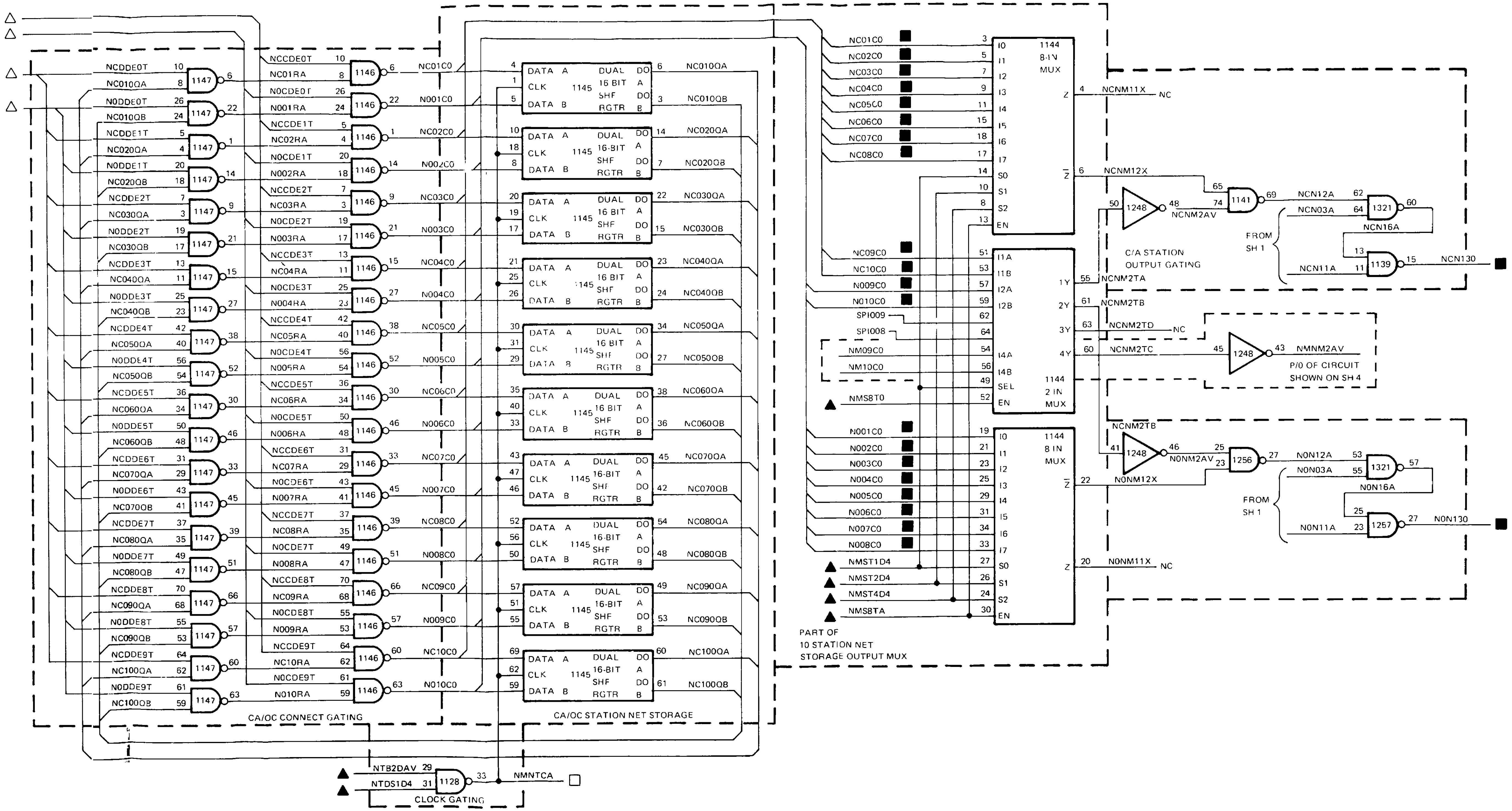
FO-21. 10-Station Net Storage, Logic Diagram (Sheet 1 of 4)

INPUTS	F/O - SH
NMST1 D4	6-27-1
NMST2D4	6-27-1
NMSTBD4	6 27-1
NMST4AV	6-27-1


NMST1D4
NMST2D4
NMST4AV
NMST8D4
NCN060
NCN07AV
NCN070
NCND2A
NCND1A
NCND4A
NCND3A
1152
1147
1245
CA/STATION
SELECT DECODE
1149
1-10
DCDR
A0
A1
A2
A3
NCCDE0T
NCCDE1T
NCCDE2T
NCCDE3T
NCCDE4T
NCCDE5T
NCCDE6T
NCCDE7T
NCCDE8T
NCCDE9T
NCDDE0T
NCDDE1T
NCDDE2T
NCDDE3T
NCDDE4T
NCDDE5T
NCDDE6T
NCDDE7T
NCDDE8T
NCDDE9T
CA CONNECT/
DISCONNECT
N0N060
N0N07AV
N0N070
N0ND2A
N0ND1A
N0ND4A
N0ND3A
OC/STATION
SELECT DECODE
1132
N0CDE0T
N0CDE1T
N0CDE2T
N0CDE3T
N0CDE4T
N0CDE5T
N0CDE6T
N0CDE7T
N0CDE8T
N0CDE9T
N0DDE0T
N0DDE1T
N0DDE2T
N0DDE3T
N0DDE4T
N0DDE5T
N0DDE6T
N0DDE7T
N0DDE8T
N0DDE9T
OC CONNECT/
DISCONNECT
NMN060
NMTD5AV
NMTD50
NMTD2A
NMTD1A
NMTD4A
NMTD3A
1248
1247
MN/STATION
SELECT DECODE
1131
NMCDE0T
NMCDE1T
NMCDE2T
NMCDE3T
NMCDE4T
NMCDE5T
NMCDE6T
NMCDE7T
NMCDE8T
NMCDE9T
NMDDE0T
NMDDE1T
NMDDE2T
NMDDE3T
NMDDE4T
NMDDE5T
NMDDE6T
NMDDE7T
NMDDE8T
NMDDE9T
MN CONNECT /
DISCONNECT

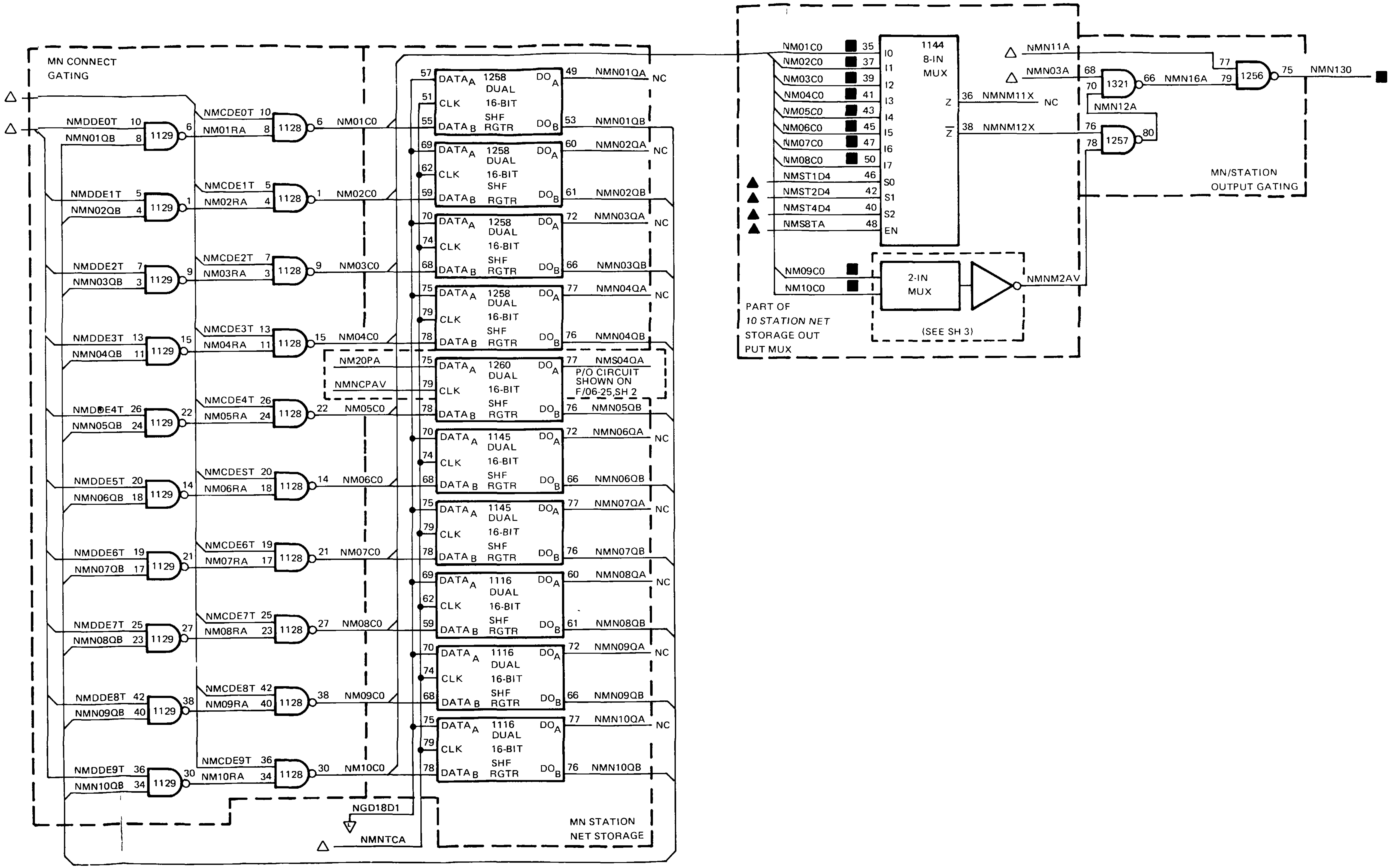
FO-21. 10-Station Net Storage, Logic Diagram (Sheet 2 of 4)

INPUTS	F/O SH	OUTPUTS	F/O SH
NTB2DAV	6-26-2	N001 CO	6-5-0
NTDS1D4	6-26-1	N002CO	6 5 0
NMST1D4	6-27-1	N003Co	6-5-0
NMST2D4	6-27 1	N004C0	6-5 0
NMST2D4	6-27-1	N005CO	6 5-0
NMS8TA	6-27 1	N006C0	6-5-0
NMS8T0	6 27 1	N007CO	6-5 0
N008C0	6 5 0		
OUTPUTS	F/O SH	N009CO	6 5-0
NCN130	6-8-0 6-10-2 6-24 1 6-22-0	N010CO	6 5 0
NCO1CO	6-5-0		
NC02CO	6-5-0		
NC03CO	6-5-0		
NC04CO	6-5 0		
NC05CO	6-5-0		
NC06CO	6-5-0		
NC07CO	6-5 0		
NC08CO	6-5 0		
NCO09CO	6-5-0		
NC10CO	6-5 0		
N0N130	6-8-0 6-10-2 6-23-1 6-22-0		


CA/OC CONNECT GATING
CA/OC STATION NET STORAGE
DATA A
CLK
DATA B
DUAL 16-BIT SHF RGTR
1145
1146
1147
1144 8-IN MUX
1144 2 IN MUX
C/A STATION OUTPUT GATING
FROM SH 1
P/0 OF CIRCUIT SHOWN ON SH 4
PART OF 10 STATION NET STORAGE OUTPUT MUX
NCN130
N0N130
NCNM11X
NCNM12X
NCNM2AV
NONM2AV
NMNM2AV
NC
NTB2DAV
NTDS1D4
NMNTCA
CLOCK GATING
1128
NMS8T0
NMST1D4
NMST2D4
NMST4D4
NMS8TA

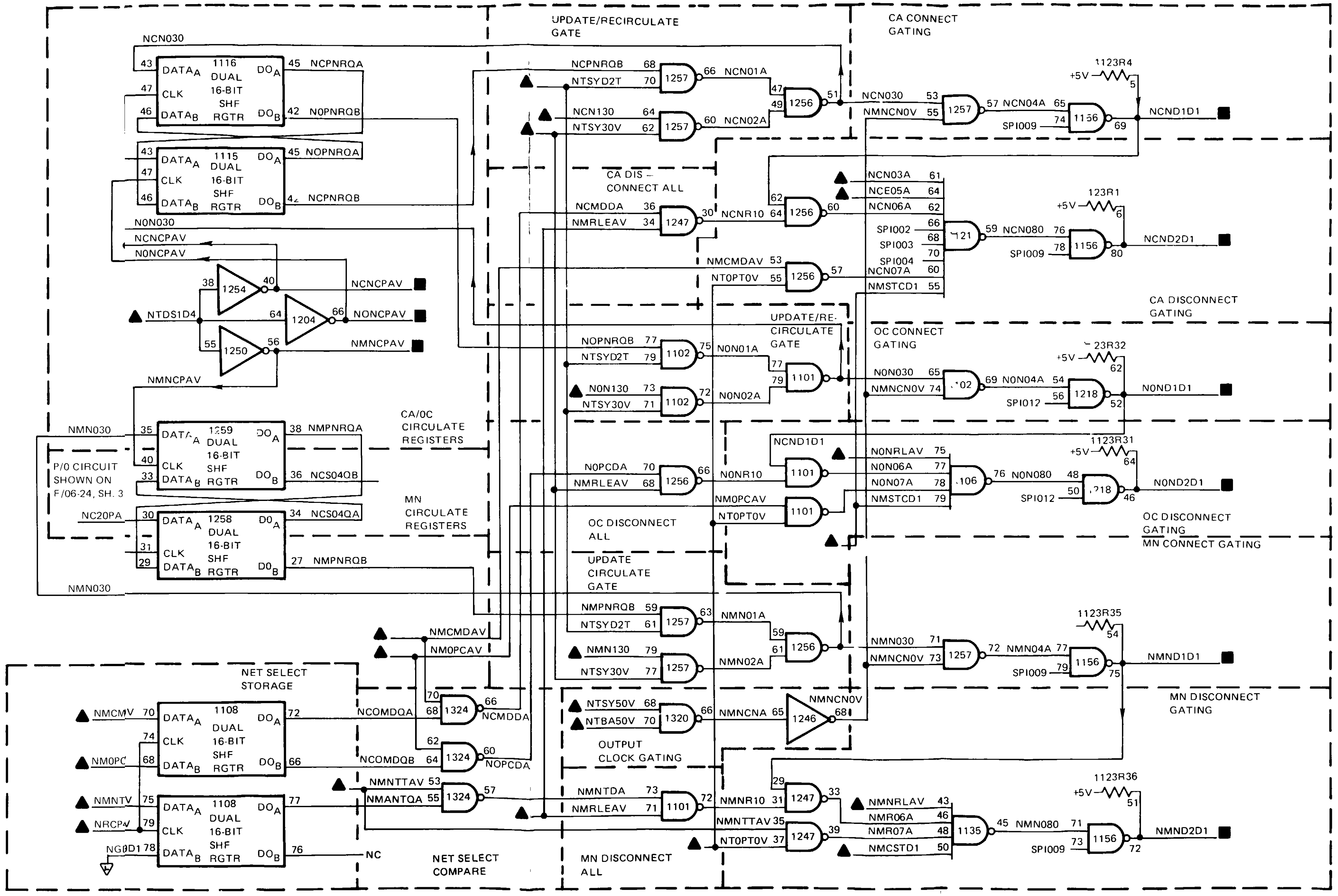
FO-21. 10-Station Net Storage, Logic Diagram (Sheet 3 of 4)

INPUTS	FO/-SH	OUTPUTS	F/O-SH
NMN130	6-8-0		
NMST1 D4	6-27-1		6-10-2
NMST2D4	6-27-1		6-25-1
NMST3D4	6-27-1		6-22-0
NMST4D4	6-27-1	NM01 CO	6-5-0
NMS8TA	6-27-1	NM02CO	6-5-0
		NM03CO	6-5-0
		NM04CO	6-5-0
		NM05CO	6-5-0
		NM06CO	6-5-0
		NM07CO	6-5-0
		NM08CO	6-5-0
		NM09CO	6-5-0
		NM10CO	6-5-0


MN CONNECT
GATING
NMDDE0T
NMN01QB
NMCDE0T
NM01RA
1129
1128
NM01C0
NMDDE1T
NMN02QB
NMCDE1T
NM02RA
NM02C0
NMDDE2T
NMN03QB
NMCDE2T
NM03RA
NM03C0
NMDDE3T
NMN04QB
NMCDE3T
NM04RA
NM04C0
NMDDE4T
NMN05QB
NMCDE4T
NM05RA
NM05C0
NMDDE5T
NMN06QB
NMCDE5T
NM06RA
NM06C0
NMDDE6T
NMN07QB
NMCDE6T
NM07RA
NM07C0
NMDDE7T
NMN08QB
NMCDE7T
NM08RA
NM08C0
NMDDE8T
NMN09QB
NMCDE8T
NM09RA
NM09C0
NMDDE9T
NMN10QB
NMCDE9T
NM10RA
NM10C0
NGD18D1
NMNTCA
DATA A
CLK
DATA B
DO A
DO B
1258
1260
1145
1116
DUAL
16-BIT
SHF
RGTR
NMN01QA
NMN01QB
NMN02QA
NMN02QB
NMN03QA
NMN03QB
NMN04QA
NMN04QB
NM20PA
NMNCPAV
NMS04QA
P/O CIRCUIT
SHOWN ON
F/06-25,SH 2
NMN05QB
NMN06QA
NMN06QB
NMN07QA
NMN07QB
NMN08QA
NMN08QB
NMN09QA
NMN09QB
NMN10QA
NMN10QB
NC
MN STATION
NET STORAGE
NM01C0
NM02C0
NM03C0
NM04C0
NM05C0
NM06C0
NM07C0
NM08C0
NMST1D4
NMST2D4
NMST3D4
NMST4D4
NMS8TA
1144
8-IN
MUX
I0 I1 I2 I3 I4 I5 I6 I7
S0 S1 S2 EN
Z
NMNM11X
NMNM12X
NM09C0
NM10C0
2-IN
MUX
(SEE SH 3)
NMNM2AV
PART OF
10 STATION NET
STORAGE OUT
PUT MUX
NMN11A
NMN03A
1321
NMN16A
NMN12A
1257
1256
NMN130
MN/STATION
OUTPUT GATING

FO-21. 10-Station Net Storage, Logic Diagram (Sheet 4 of 4)

INPUTS	F/O -SH	OUTPUTS	F/O - SH
NCE05A	-21-1	NCNCPAV	6 24-3
NCN03A	-21 1	NCND1D1	6-24-2
NCN130	21-3	NCND2D1	6-24-2
NMCMDAV	-11-3	NMNCPAV	6-25 3
NMCMDOV	-11-3		6-24-3
NMCSTD1	6-27 2	NMND1Dl	6-25-2
NMNTTAV	611-3	NMND2D1	6-25-2
NNNTTOV	6 11-3	NONCPAV	6-23-2
NMN130	6-21-4		6-23-3
NMOPCAV	6-11-3	NOND1Dl	6 23-2
NMOPCOV	6-11-3		6-23-3
NMNRLAV	6-21-1	N0ND2D1	6-23-2
NMRLEAV	6-11-2		6-23-3
NMSTCD1	6-27-2		
NRCP4AV	6-9-2		
NTDS1D4	6-26-1		
NTBASOV	6-26-1		
NTSYD2T	6-26-3		
NTSY30V	6-26-3		
NTSY50V	6-26-3		
NTOPTOV	6-26-3		
NONRLAV	6-21-1		
NON130	6-21-3		


UPDATE/RECIRCULATE GATE
CA CONNECT GATING
CA DIS – CONNECT ALL
CA DISCONNECT GATING
UPDATE/RE-CIRCULATE GATE
OC CONNECT GATING
OC DISCONNECT ALL
OC DISCONNECT GATING
MN CONNECT GATING
UPDATE CIRCULATE GATE
MN DISCONNECT GATING
OUTPUT CLOCK GATING
MN DISCONNECT ALL
NET SELECT STORAGE
NET SELECT COMPARE
CA/0C CIRCULATE REGISTERS
MN CIRCULATE REGISTERS
P/0 CIRCUIT SHOWN ON F/06-24, SH. 3
1116 DUAL 16-BIT SHF RGTR
1115 DUAL 16-BIT SHF RGTR
1259 DUAL 16-BIT SHF RGTR
1258 DUAL 16-BIT SHF RGTR
1108 DUAL 16-BIT SHF RGTR
1108 DUAL 16-BIT SHF RGTR
DATAA
CLK
DATAB
DOA
DOB
NCN030
NCPNRQA
N0PNRQB
NOPNRQA
NCPNRQB
N0N030
NCNCPAV
NONCPAV
NMNCPAV
NTDS1D4
1254
1204
1250
NMN030
NMPNRQA
NCS04QB
NC20PA
NCS04QA
NMPNRQB
NMCMDAV
NM0PCAV
NMCMV
NM0PC
NMNTV
NRCPV
NGD1
NC
NCOMDQA
NCOMDQB
NMNTTAV
NMANTQA
1324
NCMDDA
NOPCDA
NCPNRQB
NTSYD2T
NCN130
NTSY30V
1257
NCN01A
NCN02A
1256
NCN030
NMNCN0V
NCN04A
SPI009
1156
1123R4
+5V
NCND1D1
NCMDDA
NMRLEAV
1247
NCNR10
NCN03A
NCE05A
NCN06A
SPI002
SPI003
SPI004
NCN07A
NMSTCD1
121
NCN080
123R1
NCND2D1
NMCMDAV
NT0PT0V
NOPNRQB
1102
N0N01A
N0N130
N0N02A
1101
N0N030
N0N04A
SPI012
1218
23R32
N0ND1D1
NCND1D1
NONRLAV
N0N06A
N0N07A
106
N0N080
1123R31
N0ND2D1
NOPCDA
N0NR10
NM0PCAV
NMPNRQB
NMN01A
NMN130
NMN02A
NMN030
NMN04A
1123R35
NMND1D1
NTSY50V
NTBA50V
1320
NMNCNA
1246
NMNCN0V
NMNTDA
NMNR10
NMNTTAV
NT0PT0V
NMNRLAV
NMR06A
NMR07A
NMCSTD1
1135
NMN080
1123R36
NMND2D1

FO-22. Net Subscriber Storage Control Circuits, Logic Diagram

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

   ▲ INPUT FROM ANOTHER FIGURE

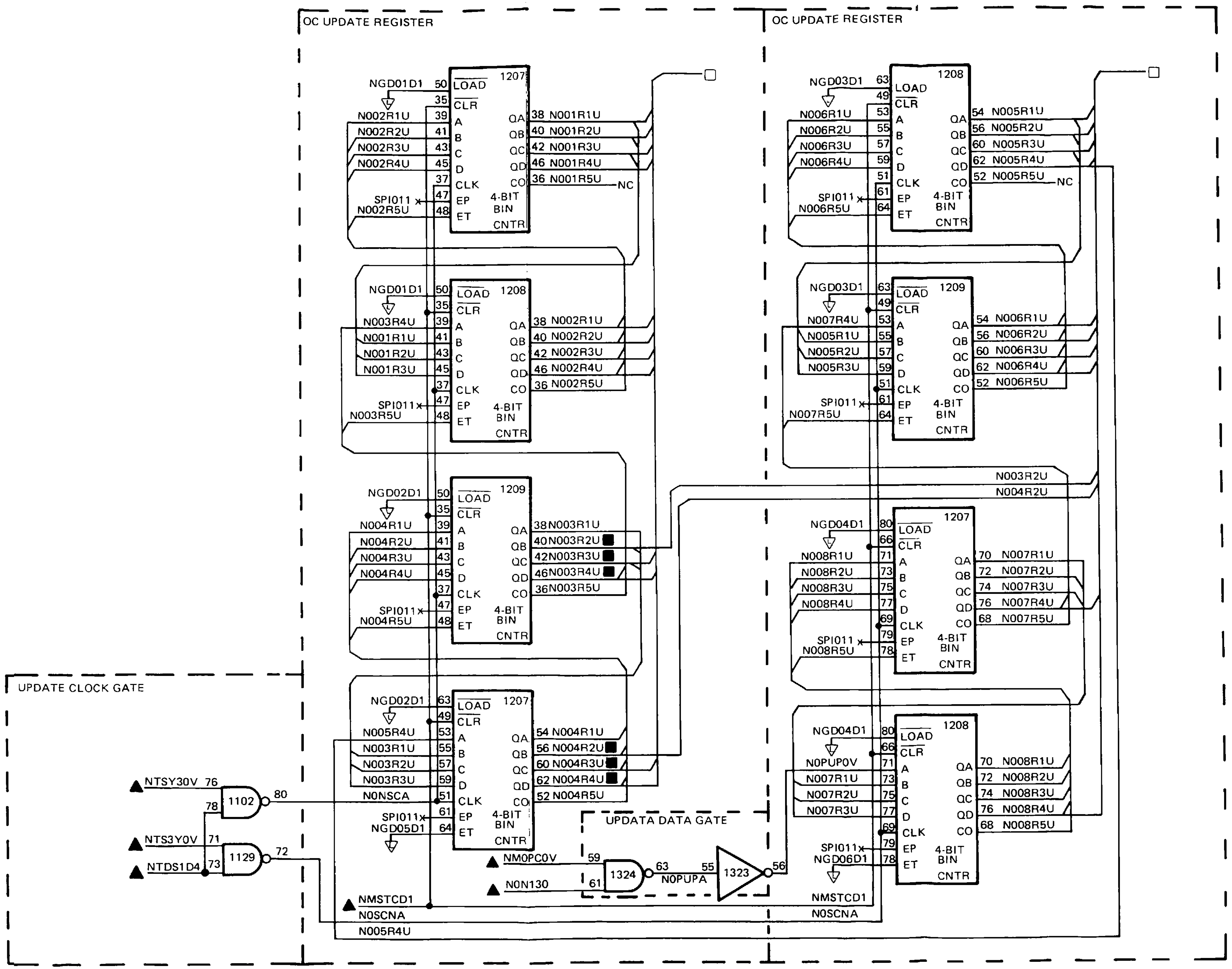
   △ INPUT FROM SAME FIGURE

   ■ OUTPUT TO ANOTHER FIGURE

   ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE

   □ OUTPUT TO SAME FIGURE
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ⏚ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

INPUTS	F/O - SH	OUTPUTS	F/O - SH
		N003R2U	6-16-2
NMSTCD1	6-27-2		
		NO03R3U	6-16-2
NMOPCOV	6-11-3		
		N003R4U	6 16-2
NTDS1D4	6-26-1	N004R2U	6-16-2
NTSY30V	6-26 3	N004R3U	6-16 2
NTS3Y0V	6-26-3	N004R4U	6 16-2
N0N130	6 21-3		


OC UPDATE REGISTER
OC UPDATE REGISTER
UPDATE CLOCK GATE
UPDATA DATA GATE
LOAD
CLR
A
B
C
D
CLK
EP
ET
QA
QB
QC
QD
CO
4-BIT BIN CNTR
1207
1208
1209
1102
1129
1324
1323
NGD01D1
NGD02D1
NGD03D1
NGD04D1
NGD05D1
NGD06D1
N001R1U
N001R2U
N001R3U
N001R4U
N001R5U
N002R1U
N002R2U
N002R3U
N002R4U
N002R5U
N003R1U
N003R2U
N003R3U
N003R4U
N003R5U
N004R1U
N004R2U
N004R3U
N004R4U
N004R5U
N005R1U
N005R2U
N005R3U
N005R4U
N005R5U
N006R1U
N006R2U
N006R3U
N006R4U
N006R5U
N007R1U
N007R2U
N007R3U
N007R4U
N007R5U
N008R1U
N008R2U
N008R3U
N008R4U
N008R5U
SPI011
NC
NTSY30V
NTS3Y0V
NTDS1D4
NONSCA
NMOPCOV
N0N130
NOPUPA
NOPUPOV
NMSTCD1
NOSCNA
N005R4U

FO-23. Operational Control Net Subscriber Storage, Logic Diagram (Sheet 1 of 3).

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.

2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.

3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲	INPUT FROM ANOTHER FIGURE
△	INPUT FROM SAME FIGURE
■	OUTPUT TO ANOTHER FIGURE
◪	OUTPUT TO BOTH SAME AND ANOTHER FIGURE
□	OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.

5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.

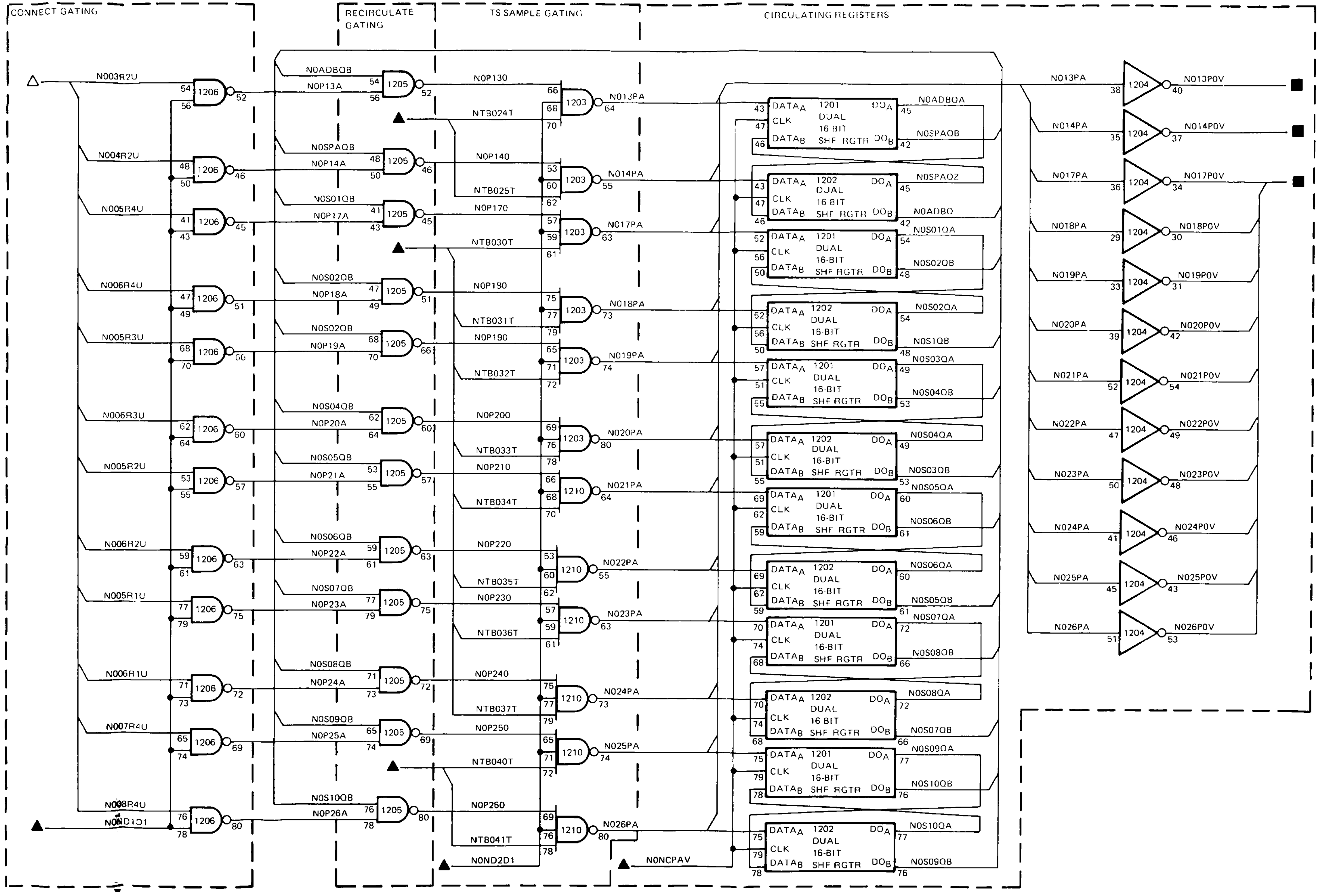
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.

8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.

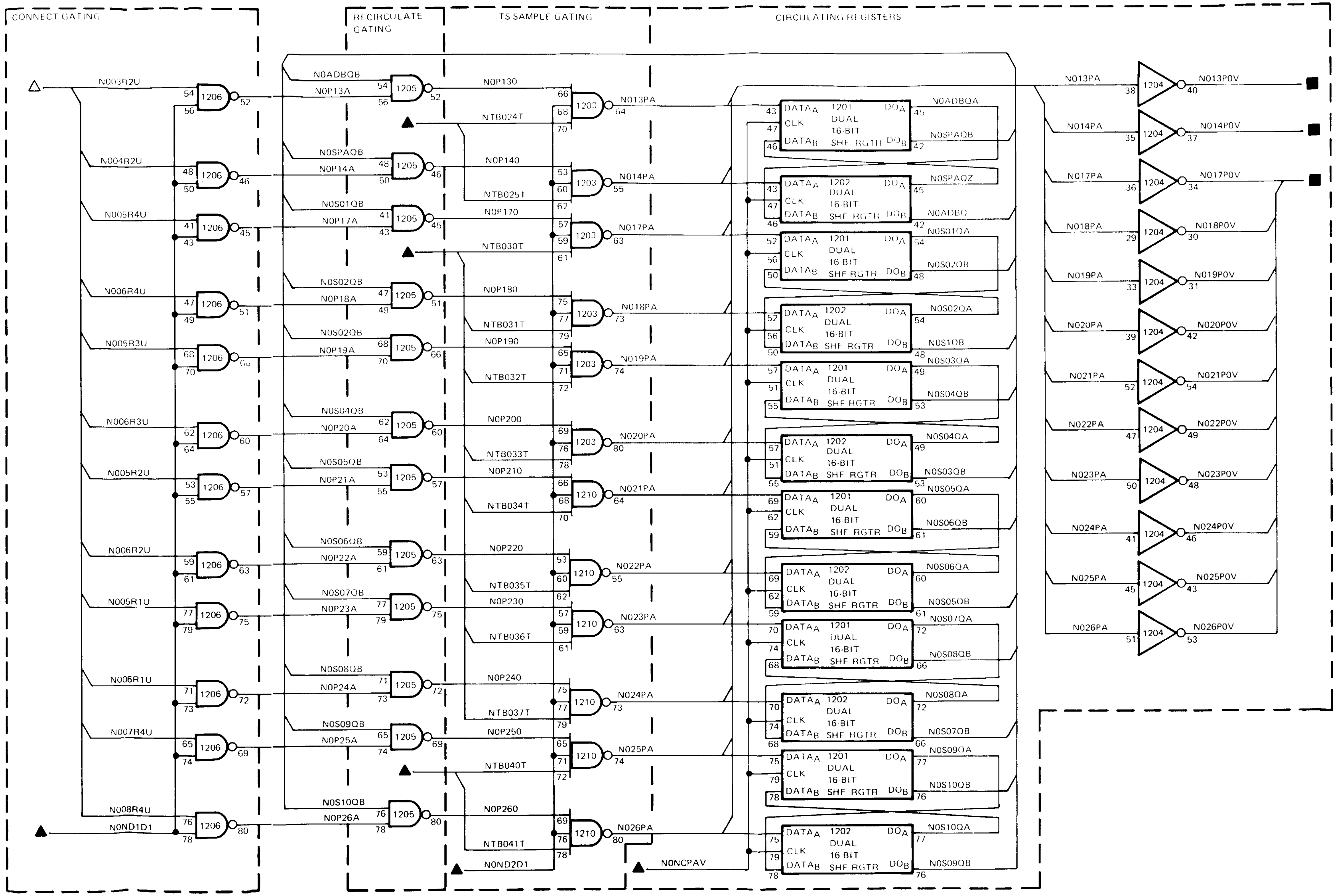
9. ▽ INDICATES AN ACTIVE LOGIC

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NTB011T	6-26-2	N001P0V	6-1-3
NTB012T	6-26-2	N002P0V	6-1-3
NTB013T	6-26-2	N003P0V	6-1-3
NTB014T	6-26-2	N004P0V	6-1-3
NTB015T	6-26-2	N005P0V	6-1 3
NTB016T	6-26-2	N006P0V	6-1-3
NTB017T	6-26-2	N007P0V	6-1-3
NTB020T	6-26-2	N008P0V	6-1-3
NTB021T	6-26-2	N009P0V	6-1-3
NTB022T	6-26-2	N010P0V	6-1-3
NTB023T	6-26-2	N011P0V	6-1-3
NT01PAV	6-26-2	N012P0V	6-1-3
N0NCPAV	6-22-0		
N0ND1D1	6-22-0		
N0ND2D1	6-22-0		


CONNECT GATING
RECIRCULATE GATING
TS SAMPLE GATING
CIRCULATING REGISTERS
N003R2U
N004R2U
N005R4U
N006R4U
N005R3U
N006R3U
N005R2U
N006R2U
N005R1U
N006R1U
N007R4U
N008R4U
N0ND1D1
1206
1205
1203
1210
1201
1202
1204
DATA A
CLK
DATA B
DUAL
16 BIT
SHF RGTR
DO A
DO B
N0ADBQB
N0P13A
N0SPAQB
N0P14A
N0S01QB
N0P17A
N0S02QB
N0P18A
N0P19A
N0S04QB
N0P20A
N0S05QB
N0P21A
N0S06QB
N0P22A
N0S07QB
N0P23A
N0S08QB
N0P24A
N0S09QB
N0P25A
N0S10QB
N0P26A
N0P130
NTB024T
N0P140
NTB025T
N0P170
NTB030T
N0P180
NTB031T
N0P190
NTB032T
N0P200
NTB033T
N0P210
NTB034T
N0P220
NTB035T
N0P230
NTB036T
N0P240
NTB037T
N0P250
NTB040T
N0P260
NTB041T
N0ND2D1
N0NCPAV
N013PA
N014PA
N017PA
N018PA
N019PA
N020PA
N021PA
N022PA
N023PA
N024PA
N025PA
N026PA
N0ADBQA
N0SPAQB
N0SPAQZ
N0ADBQ
N0S01QA
N0S02QB
N0S02QA
N0S1QB
N0S03QA
N0S04QB
N0S04QA
N0S03QB
N0S05QA
N0S06QB
N0S06QA
N0S05QB
N0S07QA
N0S08QB
N0S08QA
N0S07QB
N0S09QA
N0S10QB
N0S10QA
N0S09QB
N013P0V
N014P0V
N017P0V
N018P0V
N019P0V
N020P0V
N021P0V
N022P0V
N023P0V
N024P0V
N025P0V
N026P0V

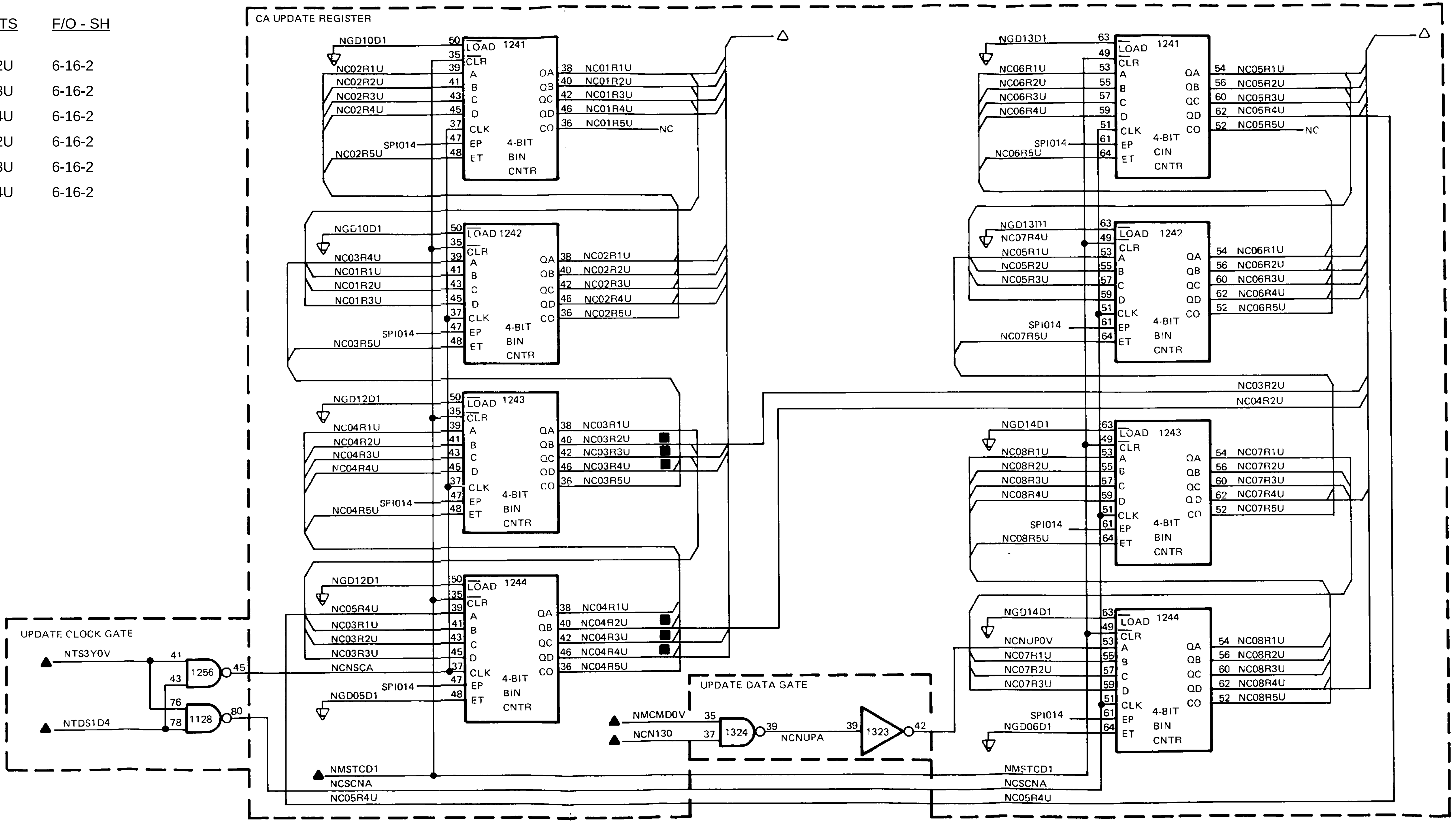
FO-23. Operational Control Net Subscriber Storage, Logic Diagram (Sheet 2 of 3).

INPUTS	F/O-SH	OUTPUTS	F/O-SH
N0NCPAV	6-22-0	N013P0V	6-1-3
N0ND1D1	6-22-0	N014P0V	6-1-3
N0ND2D1	6-22-0	N017P0V	6-5-0
NTB024T	6-26-2	N018P0V	6-5-0
NTB025T	6-26-2	N019P0V	6-5-0
NTB030T	6-26-2	N020P0V	6-5-0
NTB031T	6-26-2	N021P0V	6-5-0
NTB032T	6-26-2	N022P0V	6-5-0
NTB033T	6-26-2	N023P0V	6-5-0
NTB034T	6-26-2	N024P0V	6-5-0
NTB035T	6-26-2	N025P0V	6-5-0
NTB036T	6-26-2	N026P0V	6-5-0
NTB037T	6-26-2		
NTB040T	6-26-2		
NTB041T	6-26-2		


CONNECT GATING
RECIRCULATE GATING
TS SAMPLE GATING
CIRCULATING REGISTERS
N003R2U
N004R2U
N005R4U
N006R4U
N005R3U
N006R3U
N005R2U
N006R2U
N005R1U
N006R1U
N007R4U
N008R4U
N0ND1D1
N0ND2D1
N0NCPAV
N013PA
N014PA
N017PA
N018PA
N019PA
N020PA
N021PA
N022PA
N023PA
N024PA
N025PA
N026PA
N013P0V
N014P0V
N017P0V
N018P0V
N019P0V
N020P0V
N021P0V
N022P0V
N023P0V
N024P0V
N025P0V
N026P0V
NTB024T
NTB025T
NTB030T
NTB031T
NTB032T
NTB033T
NTB034T
NTB035T
NTB036T
NTB037T
NTB040T
NTB041T
1206
1205
1203
1210
1201
1202
1204
DATA A
CLK
DATA B
DUAL 16-BIT SHF RGTR
DO A
DO B

FO-23. Operational Control Net Subscriber Storage, Logic Diagram (Sheet 3 of 3).

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NCN130	6-21-3	NC03R2U	6-16-2
NMCMD0V	6-11-3	NC03R3U	6-16-2
NMSTCD1	6-27-2	NC03R4U	6-16-2
NTDS1D4	6-26-1	NC04R2U	6-16-2
NTS3Y0V	6-26-3	NC04R3U	6-16-2
		NC04R4U	6-16-2


CA UPDATE REGISTER
UPDATE CLOCK GATE
UPDATE DATA GATE
LOAD
CLR
A
B
C
D
CLK
EP
ET
QA
QB
QC
QD
CO
4-BIT BIN CNTR
1241
1242
1243
1244
1256
1128
1324
1323
NGD10D1
NGD12D1
NGD13D1
NGD14D1
NGD05D1
NGD06D1
SPI014
NC
NTS3Y0V
NTDS1D4
NMCMD0V
NCN130
NCNUPA
NMSTCD1
NCSCNA
NC05R4U
NCNSCA
NCNUP0V
NC01R1U
NC01R2U
NC01R3U
NC01R4U
NC01R5U
NC02R1U
NC02R2U
NC02R3U
NC02R4U
NC02R5U
NC03R1U
NC03R2U
NC03R3U
NC03R4U
NC03R5U
NC04R1U
NC04R2U
NC04R3U
NC04R4U
NC04R5U
NC05R1U
NC05R2U
NC05R3U
NC05R4U
NC05R5U
NC06R1U
NC06R2U
NC06R3U
NC06R4U
NC06R5U
NC07R1U
NC07R2U
NC07R3U
NC07R4U
NC07R5U
NC08R1U
NC08R2U
NC08R3U
NC08R4U
NC08R5U

FO-24. Operational Administration Net Subscriber Storage, Logic Diagram (Sheet 1 of 3).

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲ INPUT FROM ANOTHER FIGURE

△ INPUT FROM SAME FIGURE

■ OUTPUT TO ANOTHER FIGURE

◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE

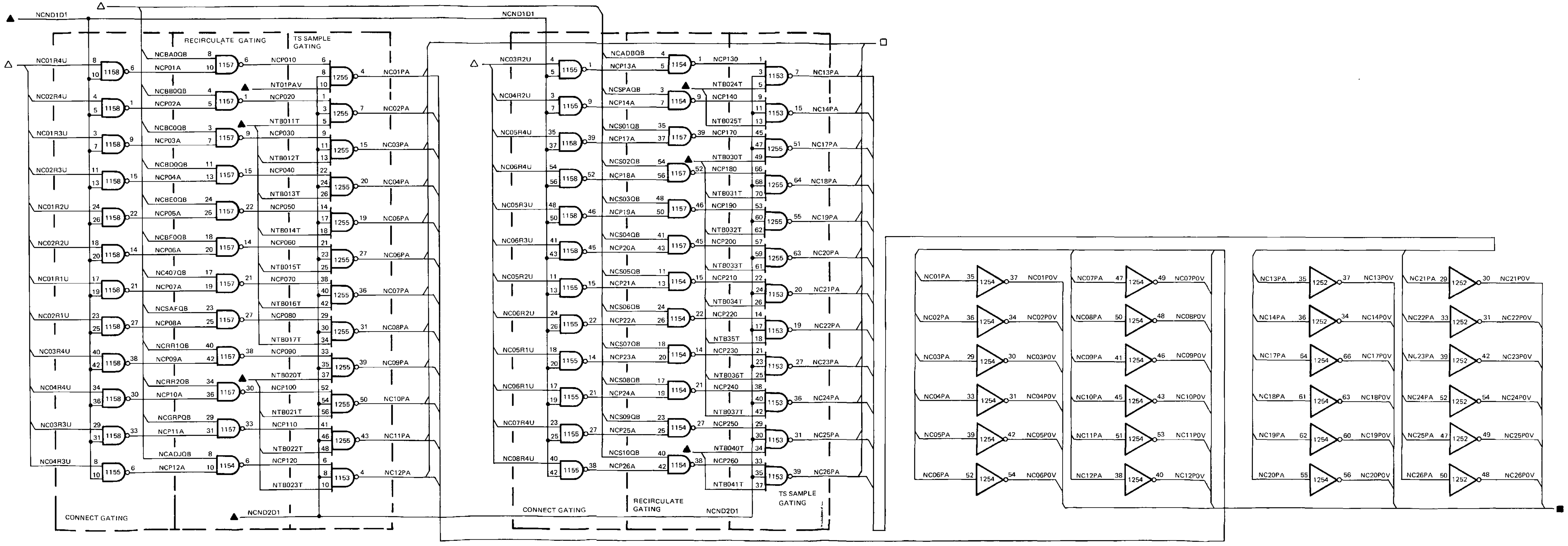
☐ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ⏚ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

INPUTS	F/O - SH
NCND1D1	6-22-0
NCN2D1	6-22-0
NTB011T	6-26-2
NTB012T	6-26-2
NTB013T	6-26-2
NTB014T	6-26-2
NTB015T	6-26-2
NTB016T	6-26-2
NTB017T	6-26-2
NTB020T	6-26-2
NTB021T	6-26-2
NTB022T	6-26-2
NTB023T	6-26-2
NTB024T	6-26-2
NTB025T	6-26-2
NTB030T	6-26-2
NTB031T	6-26-2
NTB032T	6-26-2
NTB033T	6-26-2
NTB034T	6-26-2
NTB035T	6-26-2
NTB036T	6-26-2
NTB037T	6-26-2
NTB040T	6-26-2

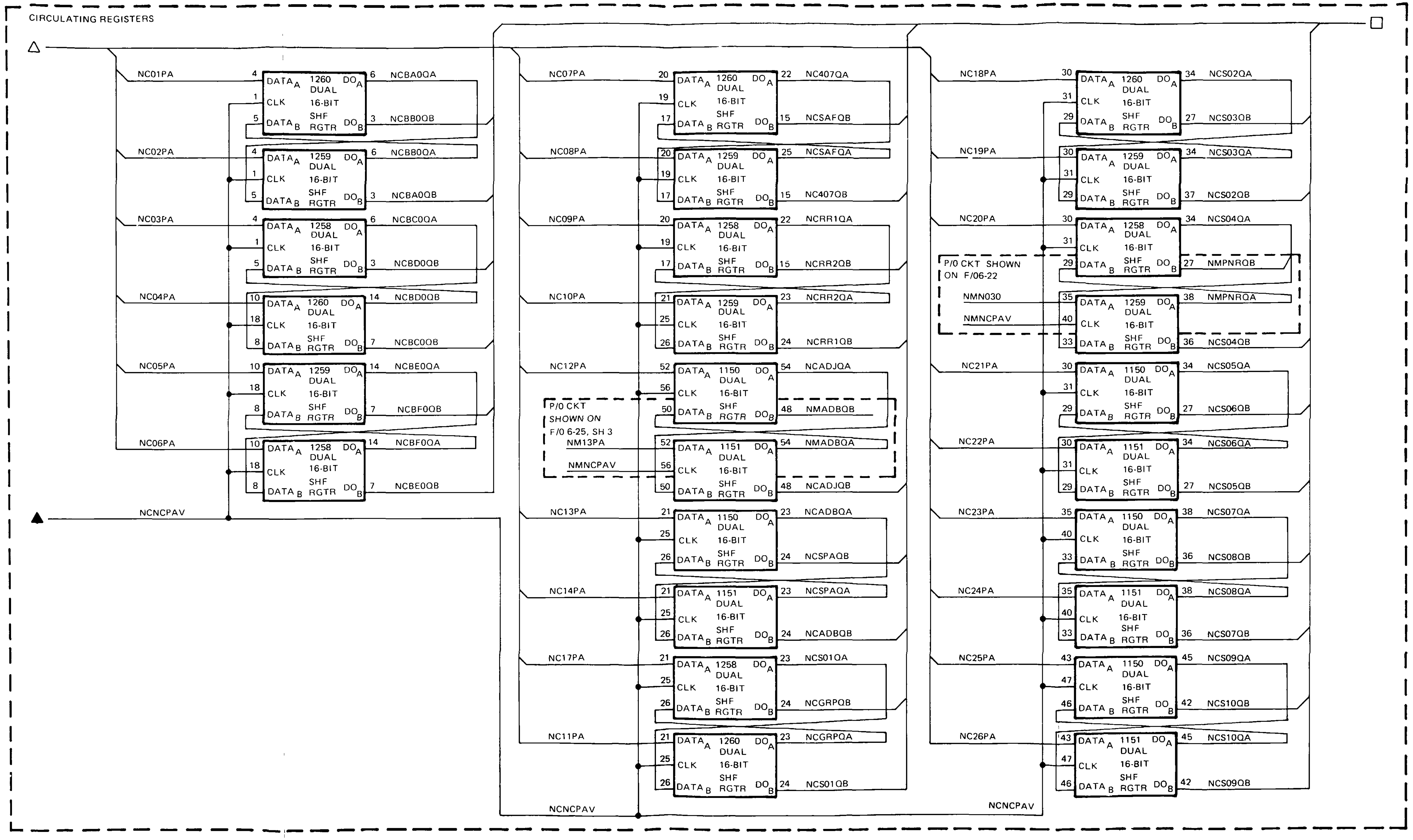
INPUTS	F/O - SH
NTB041T	6-26-2
NT01PAV	6-26-2

OUTPUTS	F/O - SH
NC01P0V	6-14-4
NC02P0V	6-14-4
NC03P0V	6-14-4
NC04P0V	6-14-4
NC05P0V	6-14-4
NC06P0V	6-14-4
NC07P0V	6-14-4
NC08P0V	6-2-3
NC09P0V	6-2-3
NC10P0V	6-2-3
NC11P0V	6-2-3
NC12P0V	6-2-3
NC13P0V	6-2-3
NC14P0V	6-2-3
NC17P0V	6-5-0
NC18P0V	6-5-0
NC19P0V	6-5-0
NC20P0V	6-5-0
NC21P0V	6-5-0
NC22P0V	6-5-0
NC23P0V	6-5-0
NC24P0V	6-5-0
NC25P0V	6-5-0
NC26P0V	6-5-0


NCND1D1
RECIRCULATE GATING
TS SAMPLE GATING
CONNECT GATING
NCND2D1
NT01PAV
NC01R4U
NC02R4U
NC01R3U
NC02R3U
NC01R2U
NC02R2U
NC01R1U
NC02R1U
NC03R4U
NC04R4U
NC03R3U
NC04R3U
NC03R2U
NC04R2U
NC05R4U
NC06R4U
NC05R3U
NC06R3U
NC05R2U
NC06R2U
NC05R1U
NC06R1U
NC07R4U
NC08R4U
1158
1157
1255
1155
1154
1153
1254
1252
NC01PA
NC02PA
NC03PA
NC04PA
NC05PA
NC06PA
NC07PA
NC08PA
NC09PA
NC10PA
NC11PA
NC12PA
NC13PA
NC14PA
NC17PA
NC18PA
NC19PA
NC20PA
NC21PA
NC22PA
NC23PA
NC24PA
NC25PA
NC26PA
NC01P0V
NC02P0V
NC03P0V
NC04P0V
NC05P0V
NC06P0V
NC07P0V
NC08P0V
NC09P0V
NC10P0V
NC11P0V
NC12P0V
NC13P0V
NC14P0V
NC17P0V
NC18P0V
NC19P0V
NC20P0V
NC21P0V
NC22P0V
NC23P0V
NC24P0V
NC25P0V
NC26P0V

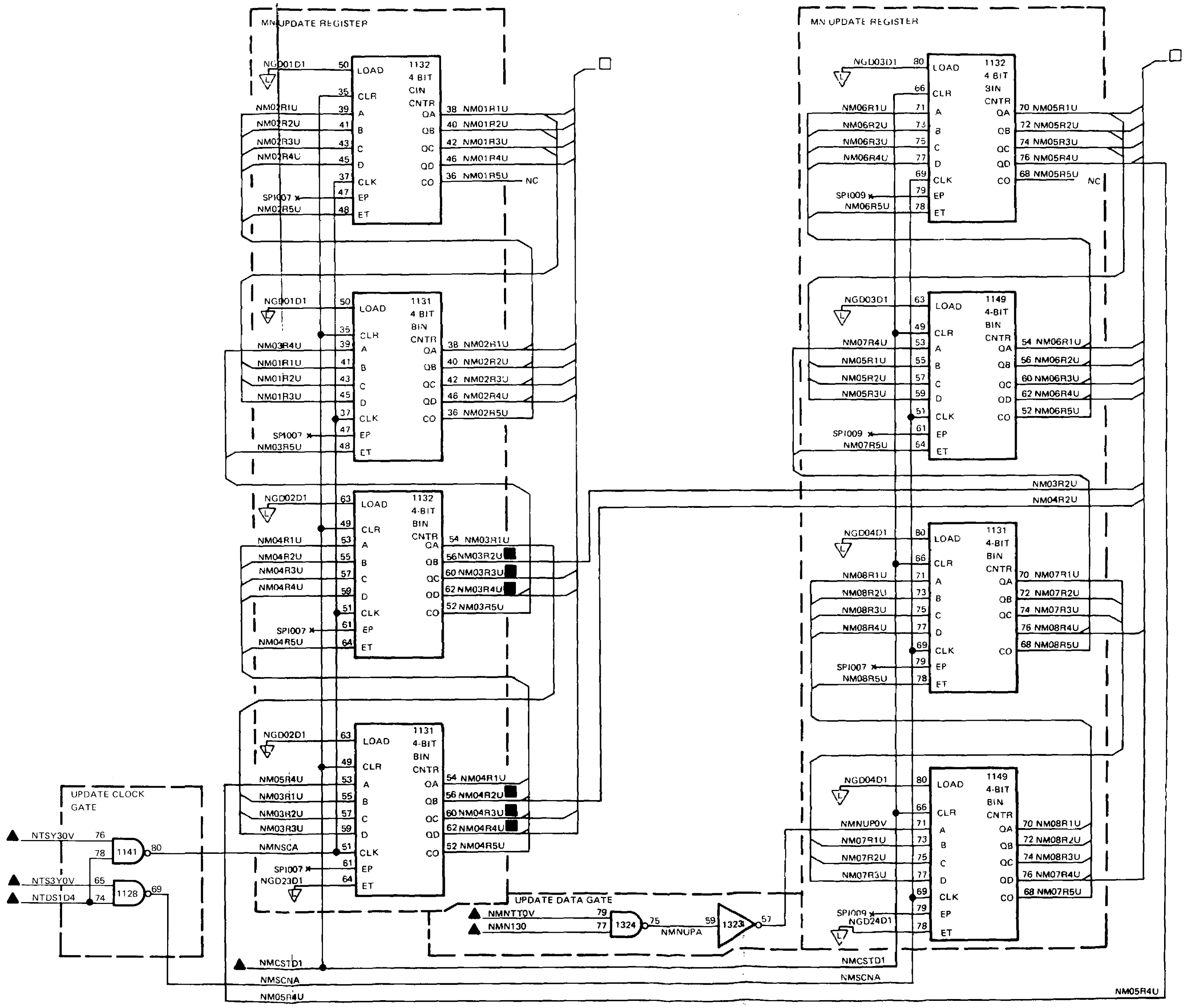
FO-24. Operational Administration Net Subscriber Storage, Logic Diagram (Sheet 2 of 3).

INPUTS	F/O - SH
NCNCPAV	6-22-0


CIRCULATING REGISTERS
NC01PA
4 DATA A 1260 DUAL 16-BIT SHF RGTR DO A 6 NCBA0QA
1 CLK
5 DATA B DO B 3 NCBB0QB
NC02PA
4 DATA A 1259 DUAL 16-BIT SHF RGTR DO A 6 NCBB0QA
1 CLK
5 DATA B DO B 3 NCBA0QB
NC03PA
4 DATA A 1258 DUAL 16-BIT SHF RGTR DO A 6 NCBC0QA
1 CLK
5 DATA B DO B 3 NCBD0QB
NC04PA
10 DATA A 1260 DUAL 16-BIT SHF RGTR DO A 14 NCBD0QB
18 CLK
8 DATA B DO B 7 NCBC0QB
NC05PA
10 DATA A 1259 DUAL 16-BIT SHF RGTR DO A 14 NCBE0QA
18 CLK
8 DATA B DO B 7 NCBF0QB
NC06PA
10 DATA A 1258 DUAL 16-BIT SHF RGTR DO A 14 NCBF0QA
18 CLK
8 DATA B DO B 7 NCBE0QB
NCNCPAV
NC07PA
20 DATA A 1260 DUAL 16-BIT SHF RGTR DO A 22 NC407QA
19 CLK
17 DATA B DO B 15 NCSAFQB
NC08PA
20 DATA A 1259 DUAL 16-BIT SHF RGTR DO A 25 NCSAFQA
19 CLK
17 DATA B DO B 15 NC407QB
NC09PA
20 DATA A 1258 DUAL 16-BIT SHF RGTR DO A 22 NCRR1QA
19 CLK
17 DATA B DO B 15 NCRR2QB
NC10PA
21 DATA A 1259 DUAL 16-BIT SHF RGTR DO A 23 NCRR2QA
25 CLK
26 DATA B DO B 24 NCRR1QB
NC12PA
52 DATA A 1150 DUAL 16-BIT SHF RGTR DO A 54 NCADJQA
56 CLK
50 DATA B DO B 48 NMADBQB
P/0 CKT SHOWN ON F/0 6-25, SH 3
NM13PA
NMNCPAV
52 DATA A 1151 DUAL 16-BIT SHF RGTR DO A 54 NMADBQA
56 CLK
50 DATA B DO B 48 NCADJQB
NC13PA
21 DATA A 1150 DUAL 16-BIT SHF RGTR DO A 23 NCADBQA
25 CLK
26 DATA B DO B 24 NCSPAQB
NC14PA
21 DATA A 1151 DUAL 16-BIT SHF RGTR DO A 23 NCSPAQA
25 CLK
26 DATA B DO B 24 NCADBQB
NC17PA
21 DATA A 1258 DUAL 16-BIT SHF RGTR DO A 23 NCS01QA
25 CLK
26 DATA B DO B 24 NCGRPQB
NC11PA
21 DATA A 1260 DUAL 16-BIT SHF RGTR DO A 23 NCGRPQA
25 CLK
26 DATA B DO B 24 NCS01QB
NCNCPAV
NC18PA
30 DATA A 1260 DUAL 16-BIT SHF RGTR DO A 34 NCS02QA
31 CLK
29 DATA B DO B 27 NCS03QB
NC19PA
30 DATA A 1259 DUAL 16-BIT SHF RGTR DO A 34 NCS03QA
31 CLK
29 DATA B DO B 37 NCS02QB
NC20PA
30 DATA A 1258 DUAL 16-BIT SHF RGTR DO A 34 NCS04QA
31 CLK
29 DATA B DO B 27 NMPNRQB
P/0 CKT SHOWN ON F/06-22
NMN030
NMNCPAV
35 DATA A 1259 DUAL 16-BIT SHF RGTR DO A 38 NMPNRQA
40 CLK
33 DATA B DO B 36 NCS04QB
NC21PA
30 DATA A 1150 DUAL 16-BIT SHF RGTR DO A 34 NCS05QA
31 CLK
29 DATA B DO B 27 NCS06QB
NC22PA
30 DATA A 1151 DUAL 16-BIT SHF RGTR DO A 34 NCS06QA
31 CLK
29 DATA B DO B 27 NCS05QB
NC23PA
35 DATA A 1150 DUAL 16-BIT SHF RGTR DO A 38 NCS07QA
40 CLK
33 DATA B DO B 36 NCS08QB
NC24PA
35 DATA A 1151 DUAL 16-BIT SHF RGTR DO A 38 NCS08QA
40 CLK
33 DATA B DO B 36 NCS07QB
NC25PA
43 DATA A 1150 DUAL 16-BIT SHF RGTR DO A 45 NCS09QA
47 CLK
46 DATA B DO B 42 NCS10QB
NC26PA
43 DATA A 1151 DUAL 16-BIT SHF RGTR DO A 45 NCS10QA
47 CLK
46 DATA B DO B 42 NCS09QB
NCNCPAV

FO-24. Command Administration Net Subscriber Storage, Logic Diagram (Sheet 3 of 3)

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NMCSTD1	6 27 2	NM03R2U	6-16-2
NMNTTOV	6-11-3	NM03R3U	6-16-2
NMN130	6-21-4	NM03R4U	6-16-2
NTDS1D4	6-26-1	NM04R2U	6-16-2
NTSY30V	6-26-3	NM04R3U	6-16-2
NTS3YOV	6-26-3	NM04R4U	6-16-2


MN UPDATE REGISTER
NGD01D1
50 LOAD
1132 4 BIT CIN CNTR
35 CLR
NM02R1U 39 A
NM02R2U 41 B
NM02R3U 43 C
NM02R4U 45 D
37 CLK
SPI007 47 EP
NM02R5U 48 ET
QA 38 NM01R1U
QB 40 NM01R2U
QC 42 NM01R3U
QD 46 NM01R4U
CO 36 NM01R5U NC
NGD01D1
1131 4 BIT BIN CNTR
NM03R4U
NM01R1U
NM01R2U
NM01R3U
SPI007
NM03R5U
38 NM02R1U
40 NM02R2U
42 NM02R3U
46 NM02R4U
36 NM02R5U
NGD02D1
1132 4-BIT BIN CNTR
NM04R1U
NM04R2U
NM04R3U
NM04R4U
SPI007
NM04R5U
54 NM03R1U
56 NM03R2U
60 NM03R3U
62 NM03R4U
52 NM03R5U
NGD02D1
1131 4-BIT BIN CNTR
NM05R4U
NM03R1U
NM03R2U
NM03R3U
NMNSCA
SPI007
NGD23D1
54 NM04R1U
56 NM04R2U
60 NM04R3U
62 NM04R4U
52 NM04R5U
UPDATE CLOCK GATE
NTSY30V 76
78 1141 80
NTS3Y0V 65
NTDS1D4 74
1128 69
UPDATE DATA GATE
NMNTT0V 79
NMN130 77
1324 75
NMNUPA
59 1323 57
NMCSTD1
NMSCNA
NM05R4U
MN UPDATE REGISTER
NGD03D1
1132 4 BIT BIN CNTR
NM06R1U
NM06R2U
NM06R3U
NM06R4U
SPI009
NM06R5U
70 NM05R1U
72 NM05R2U
74 NM05R3U
76 NM05R4U
68 NM05R5U NC
NGD03D1
1149 4-BIT BIN CNTR
NM07R4U
NM05R1U
NM05R2U
NM05R3U
SPI009
NM07R5U
54 NM06R1U
56 NM06R2U
60 NM06R3U
62 NM06R4U
52 NM06R5U
NM03R2U
NM04R2U
NGD04D1
1131 4-BIT BIN CNTR
NM08R1U
NM08R2U
NM08R3U
NM08R4U
SPI007
NM08R5U
70 NM07R1U
72 NM07R2U
74 NM07R3U
76 NM08R4U
68 NM08R5U
NGD04D1
1149 4-BIT BIN CNTR
NMNUP0V
NM07R1U
NM07R2U
NM07R3U
SPI009
NGD24D1
70 NM08R1U
72 NM08R2U
74 NM08R3U
76 NM07R4U
68 NM07R5U
NMCSTD1
NMSCNA
NM05R4U

FO-25. Maintenance Test Net Subscriber Storage, Logic Diagram (Sheet 1 of 3).

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

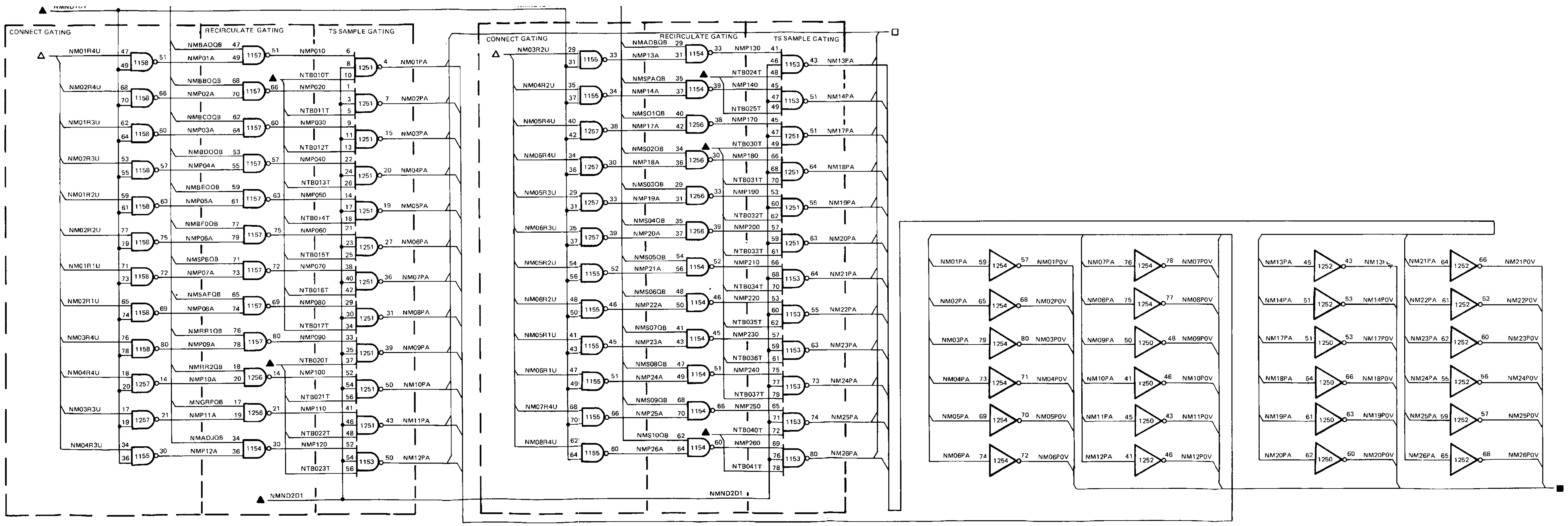
▲	INPUT FROM ANOTHER FIGURE
△	INPUT FROM SAME FIGURE
■	OUTPUT TO ANOTHER FIGURE
◩	OUTPUT TO BOTH SAME AND ANOTHER FIGURE
□	OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ▽ INDICATES AN ACTIVE LOGIC OR ZERO

INPUTS	F/O - SH
NMND1D1	622-0
NMND2D1	6-22-0
NTBO10T	6-26-2
NTB011T	6-26-2
NTB012T	2626-2
NTB013T	6-26-2
NTB014T	6-26-2
NTR015T	6-26-2
NTBO16T	6-26-2
NTB017T	6-26-2
NTBO20T	6-26-2
NTB021T	6-26-2
NTB022T	6-26-2
NTB023T	6-26-2
NTBO24T	6-26-2
NTBO25T	6-96-2
NTBO30T	6-26-2
NTB031T	6-26-2
NTBO32T	6-26-2
NTBO33T	6-26-2
NTB034T	6-26-2
NTB035T	6-26-2
NTBO36T	6-26-2
NTBO037T	6-26-2

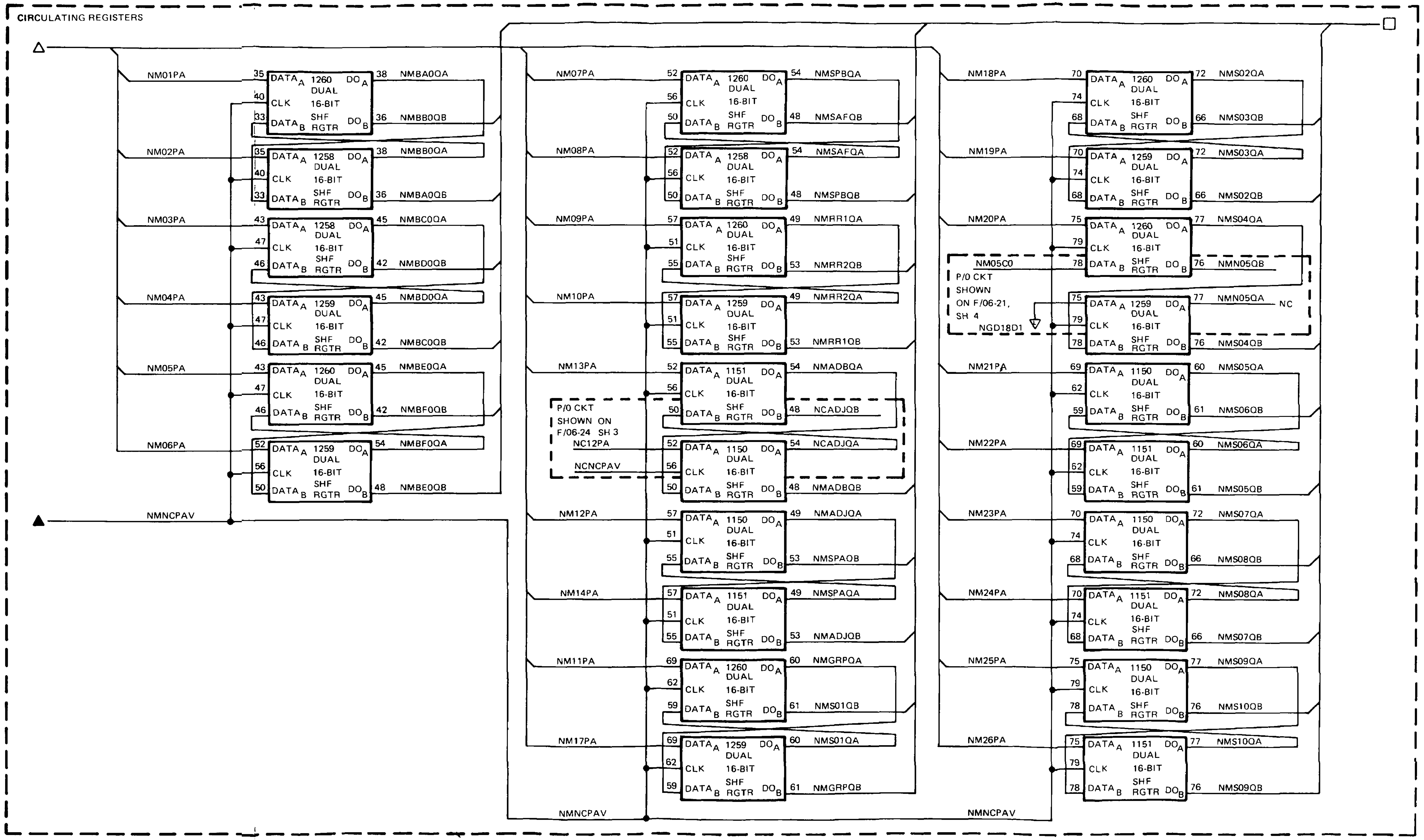
INPUTS	F/O - SH
NTB040T	6-26-2
NTBO41T	6-26-2

OUTPUTS	F/O - SH
NM01POV	6-3-3
NM02POV	6-3-3
NM03POV	6-3-3
NM04POV	6-3-3
NM05POV	6-3-3
NM05POV	6-3-3
NM07POV	6-3-3
NM08POV	6-3 3
NMO9POV	6-3-3
NM1OPOV	6-3-3
NM1 POV	6-3-3
NM12POV	6-3-3
NM13POV	6-3-3
NM14POV	6-3-3
NM17POV	6-5-0
NM18POV	6-5-0
NM19POV	6-5-0
NM20POV	6-5-0
NM21POV	6-5-0
NM22POV	6-5-0
NM23POV	6-5-0
NM24POV	6-5-0
NM25POV	6-5-0
NM26POV	6-5-0


CONNECT GATING
RECIRCULATE GATING
TS SAMPLE GATING
CONNECT GATING
RECIRCULATE GATING
TS SAMPLE GATING
NMND2D1
NMND2D1

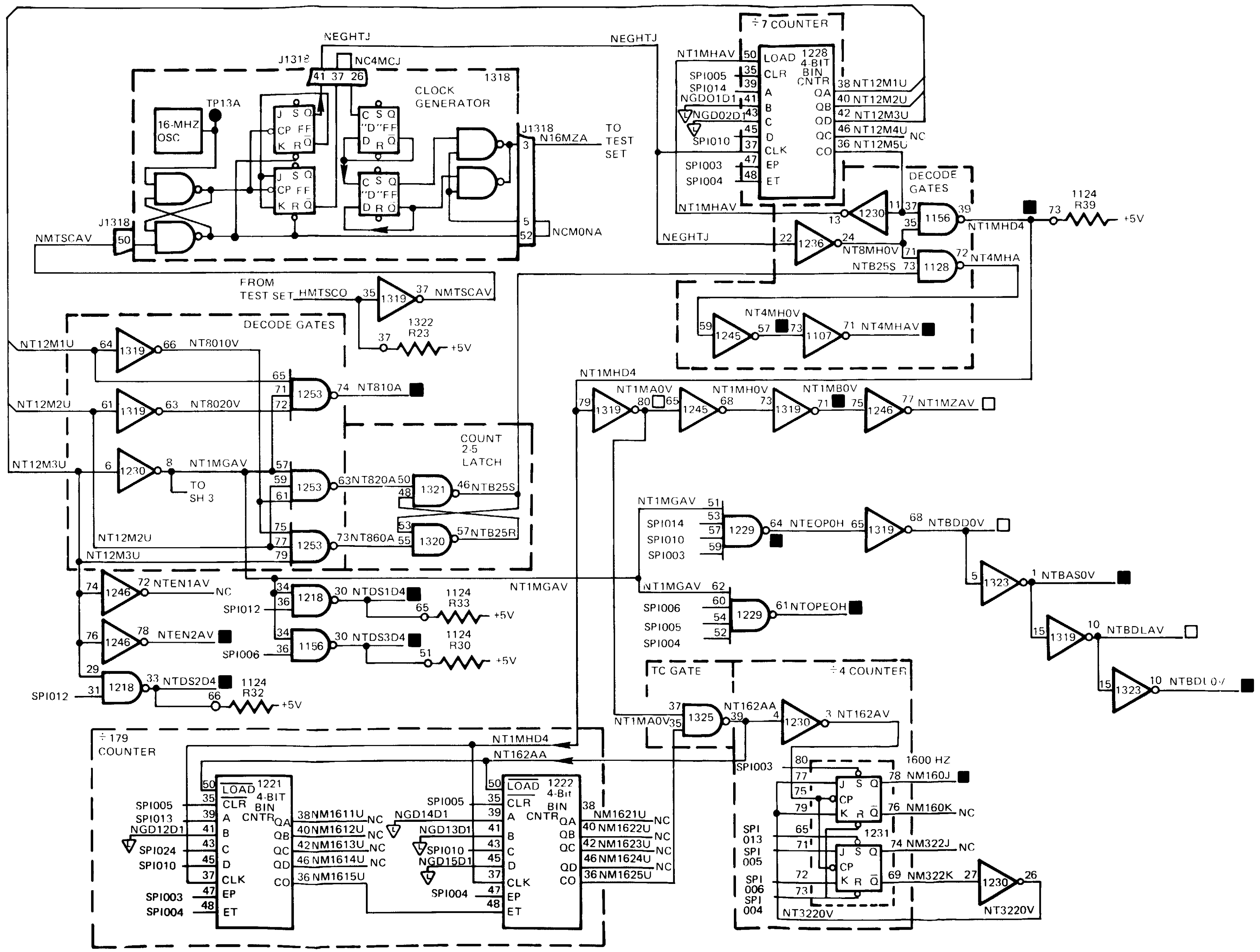
FO-25. Maintenance Test Net Subscriber Storage, Logic Diagram (Sheet 2 of 3)

OUTPUTS	F/O-SH
NMNCPAV	6-22-0


CIRCULATING REGISTERS
NM01PA
NM02PA
NM03PA
NM04PA
NM05PA
NM06PA
NMNCPAV
1260 DUAL 16-BIT SHF RGTR
1258 DUAL 16-BIT SHF RGTR
1259 DUAL 16-BIT SHF RGTR
1150 DUAL 16-BIT SHF RGTR
1151 DUAL 16-BIT SHF RGTR
DATA A
CLK
DATA B
DO A
DO B
NMBA0QA
NMBB0QB
NMBB0QA
NMBA0QB
NMBC0QA
NMBD0QB
NMBD0QA
NMBC0QB
NMBE0QA
NMBF0QB
NMBF0QA
NMBE0QB
NM07PA
NM08PA
NM09PA
NM10PA
NM13PA
NM12PA
NM14PA
NM11PA
NM17PA
NMSPBQA
NMSAFQB
NMSAFQA
NMSPBQB
NMRR1QA
NMRR2QB
NMRR2QA
NMRR1QB
NMADBQA
NCADJQB
NCADJQA
NMADBQB
NMADJQA
NMSPAQB
NMSPAQA
NMADJQB
NMGRPQA
NMS01QB
NMS01QA
NMGRPQB
P/0 CKT SHOWN ON F/06-24 SH 3
NC12PA
NCNCPAV
NM18PA
NM19PA
NM20PA
NM21PA
NM22PA
NM23PA
NM24PA
NM25PA
NM26PA
NMS02QA
NMS03QB
NMS03QA
NMS02QB
NMS04QA
NMN05QB
NMN05QA
NMS04QB
NMS05QA
NMS06QB
NMS06QA
NMS05QB
NMS07QA
NMS08QB
NMS08QA
NMS07QB
NMS09QA
NMS10QB
NMS10QA
NMS09QB
NM05C0
P/0 CKT SHOWN ON F/06-21, SH 4
NGD18D1
NC

FO-25. Maintenance Test Net Subscriber Storage, Logic Diagram (Sheet 3 of 3)

OUTPUTS	F/O-SH
NM160J	6-28-2
NTBASOV	6-14-1 6-20-1 6-220
NTBDLOV	6-16-1
NTDS1D4	6-8-0 6-10-2 6-23-1 6-220 6-20-1 6-190 6-24-1 6-25-1 6-11-2 6-10-1 6-21-3
NTDS2D4	6-10-2 6-14-1
NTDS3D4	6-17-1 6-19-0
NTEN2AV	6-1-3 6-2-3 6-3-3 6-7-2
NTEOPOH	6-5-0
NTOPEOH	6-5-0
NT1MBOV	6-16-1
NT1MHD4	6-18-0 6-19-0 6-17 1
NT4MHAV NT4MHOV	6-11-2 6 11-2
NT810A	6-21-1



NEGHTJ
J1318
NC4MCJ
41 37 26
1318
CLOCK GENERATOR
TP13A
16-MHZ OSC
"D"FF
J1318
N16MZA
TO TEST SET
NCMONA
NMTSCAV
FROM TEST SET
HMTSCO
NMTSCAV
1322 R23
+5V
DECODE GATES
NT12M1U
NT8010V
NT12M2U
NT8020V
NT12M3U
NT1MGAV
TO SH 3
NT810A
COUNT 2.5 LATCH
NT820A
NTB25S
NT860A
NT8Z5R
NTEN1AV
NC
NTEN2AV
NTDS1D4
1124 R33
SPI012
NTDS3D4
1124 R30
SPI006
NTDS2D4
1124 R32
÷179 COUNTER
NT1MHD4
NT162AA
LOAD
CLR
4-BIT BIN CNTR
SPI005
SPI013
NGD12D1
SPI024
SPI010
SPI003
SPI004
NM1611U
NM1612U
NM1613U
NM1614U
NM1615U
NGD14D1
NGD13D1
NGD15D1
NM1621U
NM1622U
NM1623U
NM1624U
NM1625U
÷7 COUNTER
NT1MHAV
SPI014
NGD01D1
NGD02D1
NT12M1U
NT12M2U
NT12M3U
NT12M4U
NT12M5U
DECODE GATES
NT8MHOV
NTB25S
NT1MHD4
1124 R39
NT4MHA
NT4MHOV
NT4MHAV
NT1MAOV
NT1MHOV
NT1MBOV
NT1MZAV
NTEOPOH
NTBDOOV
NTBASOV
NTBDLAV
NTBDLOV
NTOPEOH
TC GATE
÷4 COUNTER
NT162AV
1600 HZ
NM160J
NM160K
NM322J
NM322K
NT3220V

FO-26. Voice Comm Central Timing, Logic Diagram (Sheet 1 of 3)

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲	INPUT FROM ANOTHER FIGURE
△	INPUT FROM SAME FIGURE
■	OUTPUT TO ANOTHER FIGURE
◪	OUTPUT TO BOTH SAME AND ANOTHER FIGURE
□	OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. L INDICATES AN ACTIVE LOGIC LOW OR ZERO.

OUTPUTS	F/O-SH
NFRSTA	6-11-2
NFRST0	6-16-2
NTA2PC0V	6-11-2
NTBC11U	6-16-1
NTBC14U	6-16-1
NTBC20V	6-16-1 6-18-0 6-17-1
NTBC21U	6-20-1
NTB010T	6-16-1 6-14-2 6-14-3 6-25-2
NTB011T	6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2
NTB012T	6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2
NTB013T	6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2

OUTPUTS	F/O-SH
NTB014T	6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2
NTB1015T	6-1-3 6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2
NTB016T	6-1-3 6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2
NTB017T	6-1-3 6-3-3 6-10-1 6-16-1 6-20-3 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2
NTB020T	6-1-3 6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2
NTB021T	6-16-1 6-20-3 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2
NTB022T	6-1-3 6-3-3 6-16-1 6-19-0 6-20-4 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2
NTB023T	6-1-3 6-3-3 6-16-1 6-19-0 6-20-4 6-14-2 6-14-3 6-23-2 6-24-2 6-25-2

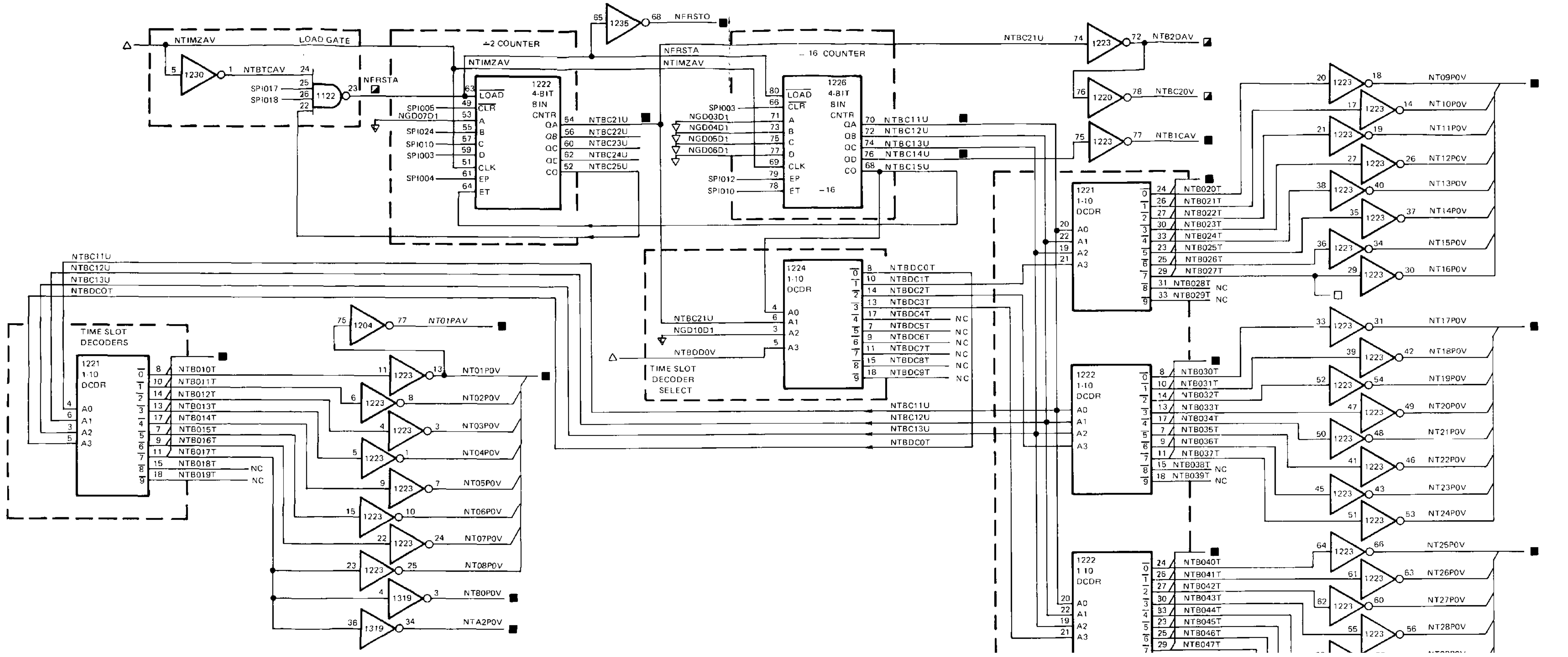
OUTPUTS	F/O-SH
NT3024T	6-1-3 6-3-3 6-16-1 6-19-0 6-20-4 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB025T	6-1-3 6-3-3 6-16-1 6-20-4 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB026T	6-16-1 6-14-2 6-14-3
NTB027T	6-1-3 6-3-3 6-16-1 6-14-2 6-14-3
NTB030T	6-1-3 6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB031T	6-1-3 6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB032T	6-1-3 6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB033T	6-16-1 6-20-3 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB034T	6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB035T	6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-3 6-24-2

OUTPUTS	F/O-SH
NTS036T	6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB037T	6-3-3 6-16-1 6-20-3 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB040T	6-16-1 6-20-3 6-14-2 6-14-3 6-23-3 6-24-2 6-25-2
NTB6041T	6-16-1 6-20-3 6-14-2 6-143 6-23-3 6-24-2 6-25-2
NTB042T	6-1-3 6-3-3 6-16-1 6-20-4 6-14-2 6-14-3
NTB043T	6-7-3 6-3-3 6-16-1 6-20-4 6-14-2 6-14-3
NTB044T	6-1-3 6-3-3 6-16-1 6-19-0 6-20-4 6-14-2 6-14-3
NTB045T	6-16-1 6-19-0 6-20-4 6-14-2 6-14-3
NTB046T	6-16-1 6-19-0 6-20-4 6-14.2 6-14-3
NTB047T	6-14-2 6-14-3
NTB1CAV	6-11-2
NTB2DAV	6-10-1 6-10-2 6-21-3 6-19-0 6-20-1 6-27-1
NT01PAV	6-1-3 6-3-3 6-16-1 6-20-3p 6-24-2

OUTPUTS	F/O-SH
NT01P0V	6-1-4 6-2-4 6-3-4 6-4-1 6-4-2 6-7-2 6-14-2 6-14-3 6-14-4
NT02P0V	6-14 6-2-4 6-3-4 6-4-2 6-7-2 6-14-4
NT03P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2 6-14-4
NT04P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2 6-14-4
NT05P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2 6-14-2 6-14-3 6-14-4
NT06P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2 6-14-4
NT07P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2 6-14-4
NT08P0V	6-1-4 6-2-4 6-3-4 6-5-0 6-7-2 6-14-1
NT09P0V	6-14-2 6-2-4 6-3-4 6-4-2 6-7-2
NT10P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2
NT11P0V	6-1-4 6-2-4 6-3-4 6-7-2
NT12P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2

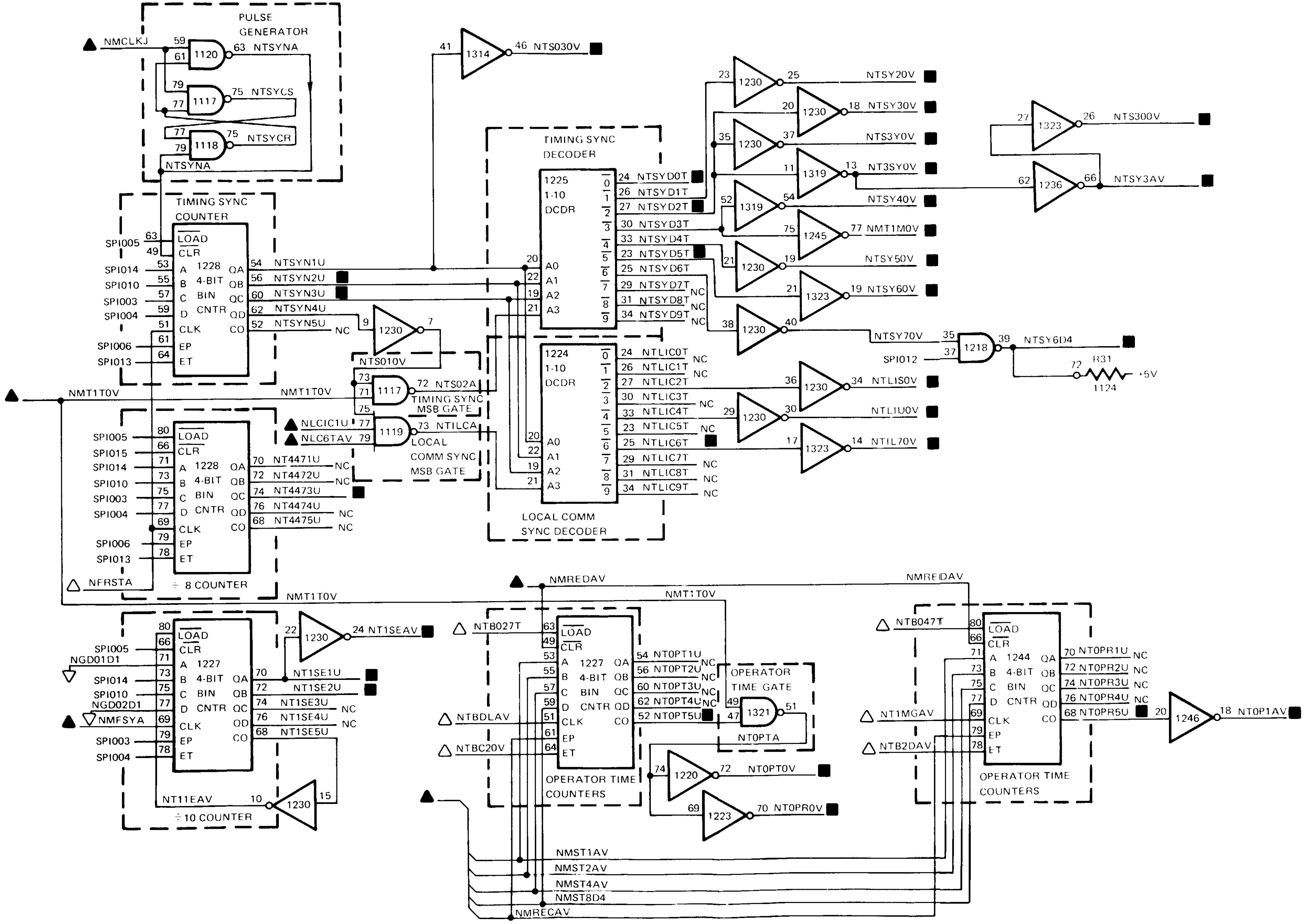
OUTPUTS	F/O-SH
NT13P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2 6-14-2 6-14-3
NT14P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2 6-19-0
NT1SP0V	6-1-4 6-3-4 6-4-2
NT16P0V	6-1-4 6-2-4 6-3-4 6-4-2 6-7-2 6-21-1
NT7P0V	6-1-4 6-3-4 6-4-1 6-4-2 6-5-0 6-7-2 6-14-2 6-14-3
NT18P0V	6-1-4 6-3-4 6-4-2 6-5-0 6-7-2
NT19P0V	6-1-4 6-3-4 6-4-2 6-5-0 6-5-0 6-7-2
NT20P0V	6-1-4 6-3-4 6-4-2 6-5-0 6-7-2
NT20P0V	6-1-4 6-3-4 6-4-2 6-5-0 6-7-2 6-14-2 6-14-3
NT21P0V	6-1-4 6-3-4 6-4-2 6-5-0 6-7-2 6-14-2 6-14-3
NT22P()V	6-1-4 6-3-4 6-4-2 6-5-0 6-7-2
NT23P0V	6-1-4 6-3-4 6-4-2

OUTPUTS	F/O-SH
NT24P0V	6-1-4 6-3-4 6-4-2 6-5-0 6-6-4 6-7-2
NT25P0V	6-1-4 6-3-4 6-4-2 6-5-0 6-7-2 6-14-2 6-14-3
NT26P0V	6-1-4 6-3-4 6-4-2 6-5-0 6-7-2
NT27P0V	6-1-4 6-3-4 6-4-2 6-7-2 6-19-0
NT28P0V	6-1-4 6-3-4 6-4-2 6-7-2 6-19-0
NT29P0V	6-1-4 6-3-4 6-4-2 6-7-2 6-19-0
NT30P0V	6-1-4 6-3-4 6-4-2 6-7-2
NT31P0V	6-42 6-7-2
NT32P0V	6-4-2
NT80P0V	6-11-2 6-19-0 6-5--0
	6-5-0


NTIMZAV
LOAD GATE
1230
NTBTCAV
SPI017
SPI018
1122
NFRSTA
÷2 COUNTER
1222
4-BIT
BIN
CNTR
LOAD
CLR
SPI005
NGD07D1
SPI024
SPI010
SPI003
SPI004
CLK
EP
ET
QA
QB
QC
QD
CO
NTBC21U
NTBC22U
NTBC23U
NTBC24U
NTBC25U
1235
NFRSTO
÷16 COUNTER
1226
NGD03D1
NGD04D1
NGD05D1
NGD06D1
SPI012
NTBC11U
NTBC12U
NTBC13U
NTBC14U
NTBC15U
1223
NTB2DAV
1220
NTBC20V
NTB1CAV
1224
1-10
DCDR
NGD10D1
NTBDD0V
TIME SLOT
DECODER
SELECT
NTBDC0T
NTBDC1T
NTBDC2T
NTBDC3T
NTBDC4T
NTBDC5T
NTBDC6T
NTBDC7T
NTBDC8T
NTBDC9T
NC
TIME SLOT
DECODERS
1221
A0
A1
A2
A3
NTB010T
NTB011T
NTB012T
NTB013T
NTB014T
NTB015T
NTB016T
NTB017T
NTB018T
NTB019T
1204
NT01PAV
NT01P0V
NT02P0V
NT03P0V
NT04P0V
NT05P0V
NT06P0V
NT07P0V
NT08P0V
1319
NT80P0V
NTA2P0V
NTB020T
NTB021T
NTB022T
NTB023T
NTB024T
NTB025T
NTB026T
NTB027T
NTB028T
NTB029T
NT09P0V
NT10P0V
NT11P0V
NT12P0V
NT13P0V
NT14P0V
NT15P0V
NT16P0V
NTB030T
NTB031T
NTB032T
NTB033T
NTB034T
NTB035T
NTB036T
NTB037T
NTB038T
NTB039T
NT17P0V
NT18P0V
NT19P0V
NT20P0V
NT21P0V
NT22P0V
NT23P0V
NT24P0V
NTB040T
NTB041T
NTB042T
NTB043T
NTB044T
NTB045T
NTB046T
NTB047T
NT25P0V
NT26P0V
NT27P0V
NT28P0V

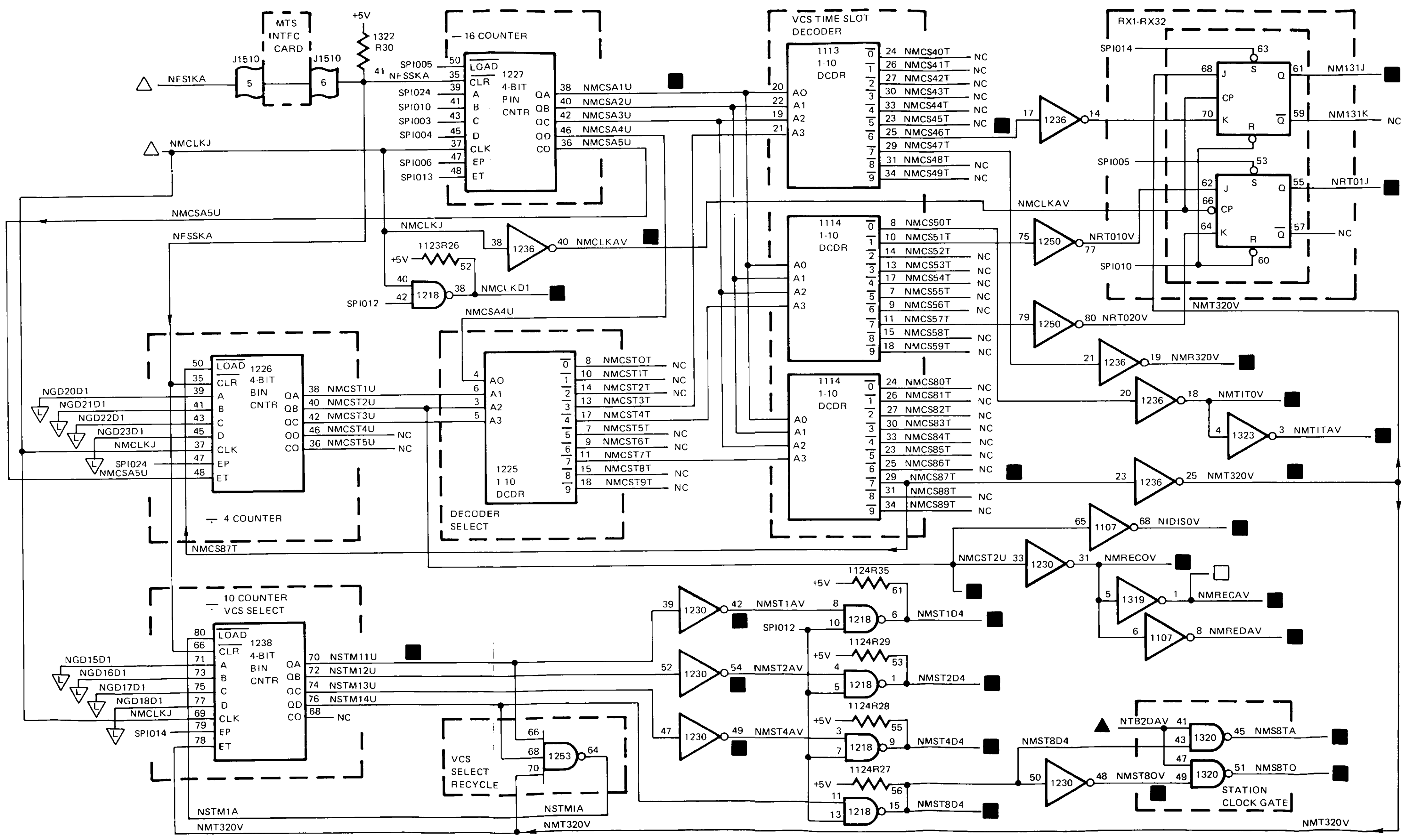
FO-26. Voice Comm Central Timing, Logic Diagram (Sheet 2 of 3)

INPUTS	F/O-SH	OUTPUTS	F/O-SH	OUTPUTS	F/O-SH
NLCIC1U	6-19-0	NMT1M0V	6-10-1	NTSY60V	6-28-2
			6-21-1		
NLC6TAV	6-190			NTS030V	6-11-2
		NT1L70V	6-19-0		
NMCLKJ	6-27-3			NTS3Y0V	6-11-2
		NTL1C6T	6-17-1		6-19-0
NMFSYA	6-27-3				6-10-2
		NTL1S0V	6-20-1		6-21-1
NMRECAV	6-27-1		6-19-1		6-23-1
			6-26-3		6-24-1
NMREDAV	6-27-1				6-25-1
		NTL1U0V	6-17-1		6-17-1
NMT1T0V	6-27-1		6-19-0		
			6-20-1	NTS300V	6-11-2
NMST1AV	6-27-1				
		NTSYD0T	6-10-1		
				NT0PR0V	6-8-1
NMST2AV	6-27-1				
		NTSYD2T	6-22-0		6-17-1
NMST4AV	6-27-1				
		NTSYD5TA	6-21-1	NT0PR5U	6-17-1
NMST8D4	6-27-1				
		NTSYN2U	6-19-0	NT0PT0V	6-21-1
		NTSYN2U	6-19-0		
			6-11-2		6-22-0
					6-19-0
		NTSYN3U	6-19-0		
				NT0PT5U	6-190
		NTSY3AV	6-14-1		6-20-1
		NTSY20V	6-18-0	NT0P1AV	6-17-1
			6-12-1		
			6-11-2	NT1SEAV	6-28-2
					6-9-3
		NTSY30V	6-26-3		
			6-21-1	NT1SE1U	6-11-1
			6-17-1		6-27-2
			6-18-0		
			6-22-0	NT1SE2U	6-10-2
			6-25-1		
				NT3SY0V	6-11-2
		NTSY40V	6-8-0		6-12-1
			6-17-1	NT4473U	6-28-2
			6-11-2		
		NTSY50V	6-11-1		
			6-12-1		
			6-130		
			6-16-2		
			6-22-0		
			6-10-1		
		NTSY6D4	6-17-1		
			6-19-0		


PULSE GENERATOR
NMCLKJ
1120
NTSYNA
1117
NTSYCS
1118
NTSYCR
TIMING SYNC COUNTER
LOAD
CLR
1228 4-BIT BIN CNTR
SPI005
SPI014
SPI010
SPI003
SPI004
SPI006
SPI013
NTSYN1U
NTSYN2U
NTSYN3U
NTSYN4U
NTSYN5U
NC
1314
NTS030V
1230
NTS010V
NMT1T0V
1117
NTS02A
TIMING SYNC MSB GATE
NLCIC1U
NLC6TAV
1119
NTLICA
LOCAL COMM SYNC MSB GATE
÷ 8 COUNTER
NT4471U
NT4472U
NT4473U
NT4474U
NT4475U
SPI015
NFRSTA
TIMING SYNC DECODER
1225 1-10 DCDR
NTSYD0T
NTSYD1T
NTSYD2T
NTSYD3T
NTSYD4T
NTSYD5T
NTSYD6T
NTSYD7T
NTSYD8T
NTSYD9T
LOCAL COMM SYNC DECODER
1224 1-10 DCDR
NTLIC0T
NTLIC1T
NTLIC2T
NTLIC3T
NTLIC4T
NTLIC5T
NTLIC6T
NTLIC7T
NTLIC8T
NTLIC9T
NTSY20V
NTSY30V
NTS3Y0V
1319
NT3SY0V
NTSY40V
1245
NTMT1M0V
NTSY50V
1323
NTSY60V
NTSY70V
1218
NTSY6D4
SPI012
R31
1124
+5V
NTS300V
1236
NTSY3AV
NTLIS0V
NTLIU0V
NTIL70V
÷ 10 COUNTER
1227
NGD01D1
NGD02D1
NMFSYA
NT1SEAV
NT1SE1U
NT1SE2U
NT1SE3U
NT1SE4U
NT1SE5U
NT11EAV
NMREDAV
NTB027T
NTBDLAV
NTBC20V
OPERATOR TIME COUNTERS
NT0PT1U
NT0PT2U
NT0PT3U
NT0PT4U
NT0PT5U
OPERATOR TIME GATE
1321
NT0PTA
1220
NT0PT0V
1223
NT0PR0V
NTB047T
NT1MGAV
NTB2DAV
1244
NT0PR1U
NT0PR2U
NT0PR3U
NT0PR4U
NT0PR5U
1246
NT0P1AV
NMST1AV
NMST2AV
NMST4AV
NMST8D4
NMRECAV

FO-26. Voice Comm Central Timing, Logic Diagram (sheet 3 of 3)

INPUTS	F/O-SH	OUTPUTS	F/O-SH	OUTPUTS	F/O-SH
NTB2DAV	6-26-2	NIDIS0V	6-17-1	NMST4AV	6-10-2
			6-19-0		6-11-1
					6-21-2
		NMCLKAV	6-9-2		6-26-3
			6-16-2		
			6-8-0	NMST1D4	6-9-1
					6-10-2
		NMCLKD1	6-9-2		6-11-1
			6-8-0		6-21-2
			6-11-1		6-21-3
			6-11-2		6-21-4
			6-15-0		6-18-0
		NMCSA1U	6-19-0	NMST2D4	6-9-1
					6-10-2
		NMCST2U	6-8-0		6-11-1
			6-19-0		6-21-2
					6-21-3
		NMCS46T	6-11-2		6-21-4
		NMCS87T	6-11-1	NMST4D4	6-9-1
			6-8-0		6-21-3
					6-21-4
		NMREC0V	6-11-1		
			6-11-2	NMST8D4	6-10-2
		NMRECAV	6-9-2		6-26-3
			6-26-3		6-11-1
			6-15-0		6-21-2
			6-11-2		
			6-19-0		
			6-8-0	NMST80V	6-9-1
		NMREDAV	6-26-3	NMS8TA	6-21-3
					6-21-4
		NMR320V	6-11-1	NMS8T0	6-21-3
			6-28-2		
			6-18-0	NMT1T0V	6-15-0
			6-11-2		6-11-2
					6-26-3
		NMST1AV	6-26-3		
			6-15-0	NMT1TAV	6-8-0
		NMST2AV	6-26-3	NMT320V	6-9-2
					6-8-0
					6-13-0
					6-28-3
					6-16-2
				NM131J	6-11-1
				NRT01J	6-9-2
				NSTM11U	6-9-1



MTS INTFC CARD
J1510
NFS1KA
NMCLKJ
+5V
1322 R30
÷ 16 COUNTER
LOAD
CLR
1227 4-BIT PIN CNTR
SPI005
NFSSKA
SPI024
SPI010
SPI003
SPI004
SPI006
SPI013
NMCSA1U
NMCSA2U
NMCSA3U
NMCSA4U
NMCSA5U
VCS TIME SLOT DECODER
1113 1-10 DCDR
1114 1-10 DCDR
RX1-RX32
NMCLKAV
NMCLKD1
1123R26
NMCSA4U
1226 4-BIT BIN CNTR
÷ 4 COUNTER
1225 1 10 DCDR
DECODER SELECT
NMCS87T
÷ 10 COUNTER VCS SELECT
1238 4-BIT BIN CNTR
NGD20D1
NGD21D1
NGD22D1
NGD23D1
NGD15D1
NGD16D1
NGD17D1
NGD18D1
VCS SELECT RECYCLE
NSTM1A
NMT320V
NRT010V
NRT020V
NMR320V
NMT1T0V
NMT1TAV
NMT320V
NIDIS0V
NMRECOV
NMRECAV
NMREDAV
NMST1AV
NMST2AV
NMST4AV
NMST1D4
NMST2D4
NMST4D4
NMST8D4
NMST8OV
NMS8TA
NMS8TO
NTB2DAV
STATION CLOCK GATE
NM131J
NM131K
NRT01J

NOTES: UNLESS OTHERWISE SPECIFIED

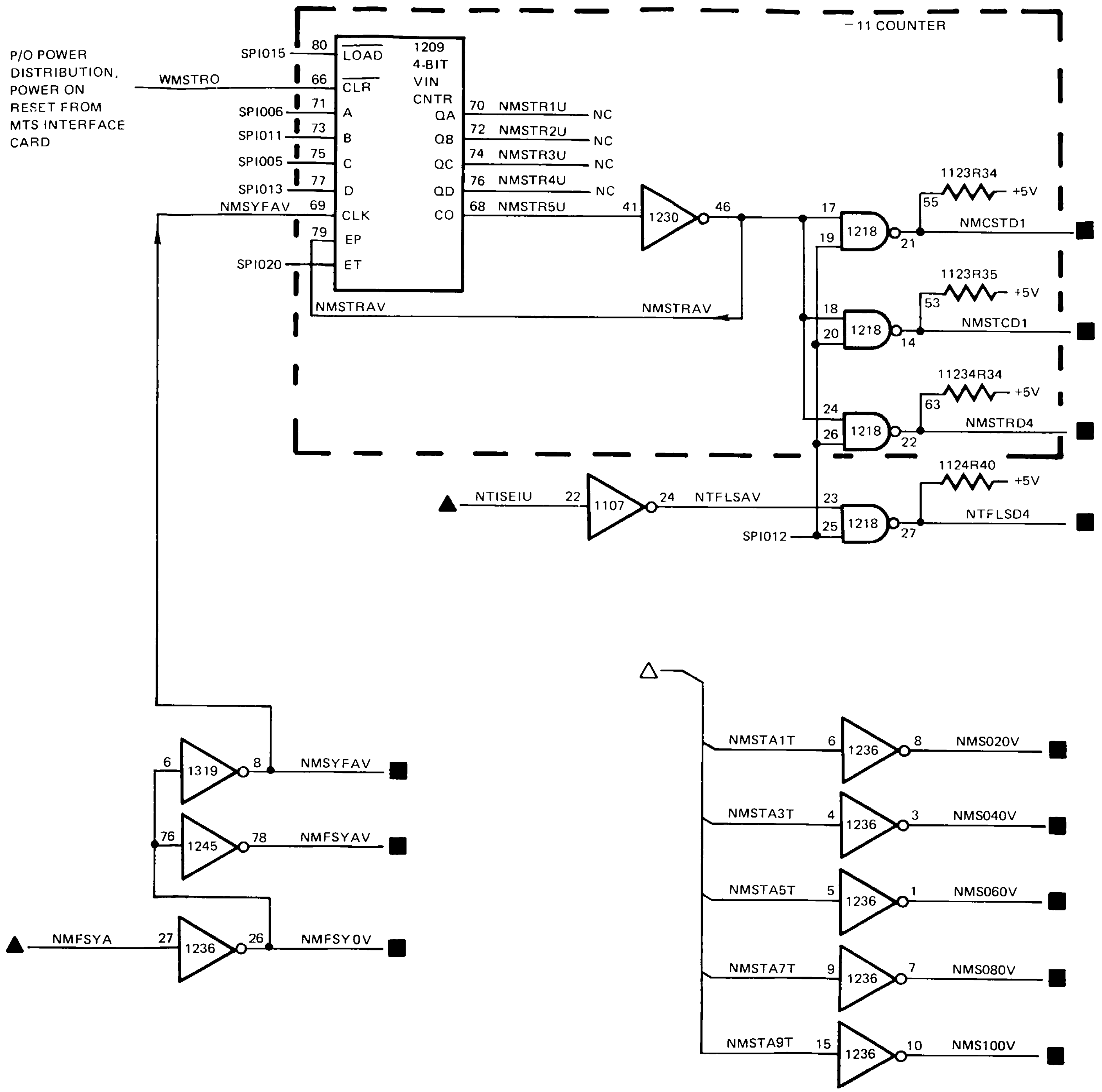
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

   ▲ INPUT FROM ANOTHER FIGURE
   △ INPUT FROM SAME FIGURE
   ■ OUTPUT TO ANOTHER FIGURE
   ◩ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   □ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ▽ INDICATES AN ACTIVE LOGIC LOW OR ZERO.

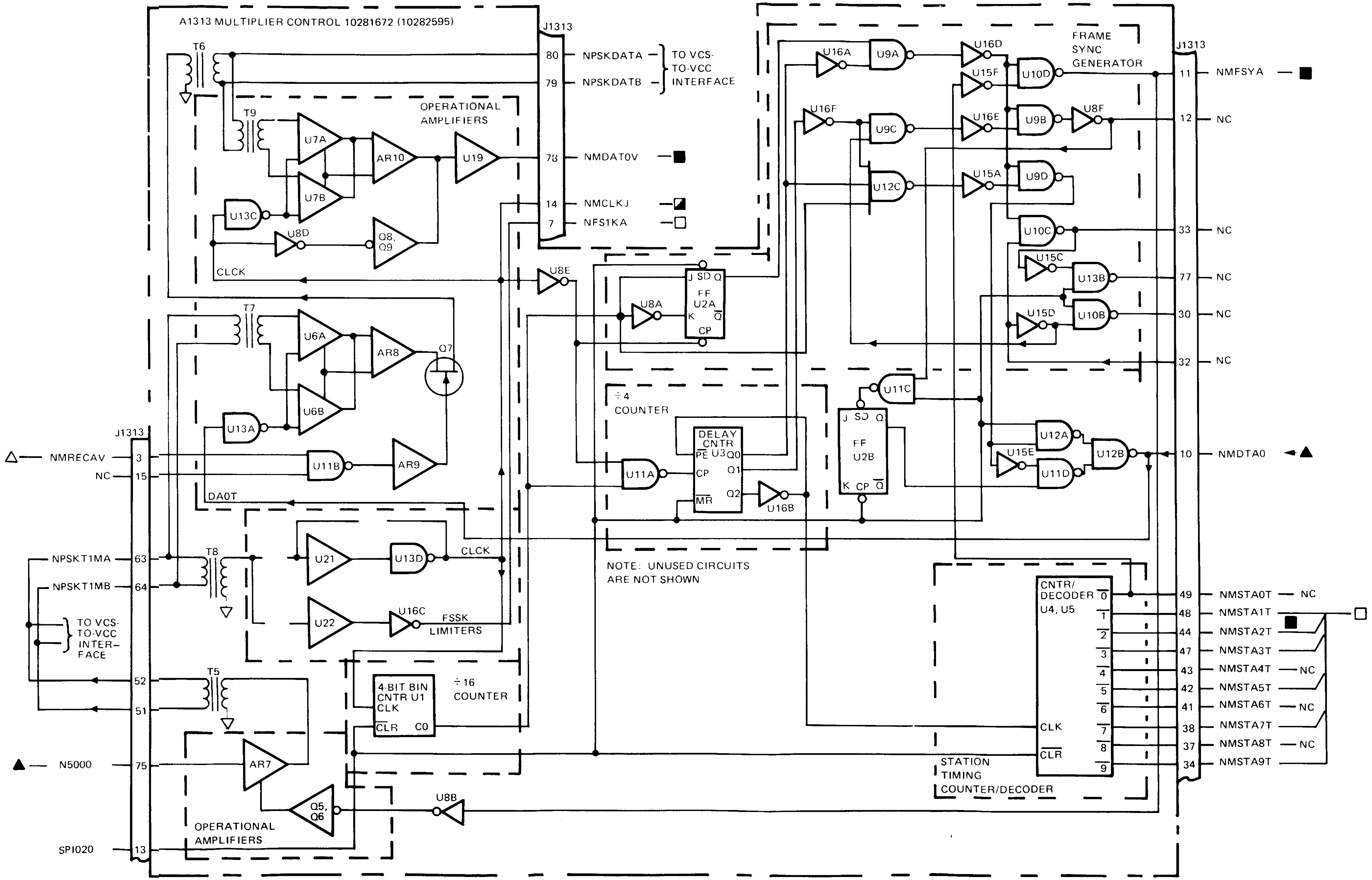
FO-27. Central-to-Station Multiplex Timing, Logic Diagram (Sheet 1 of 3)

INPUTS	F/O-SH	OUTPUTS	F/O-SH
NMFSYA	6-26-3	NMS080V	6-15-0
NT1SE1U	6-26-3	NMS100V	6-15-0
			6-16-2
			6-9-2
0UTPUTS	F/0-SH		6-13-0
			6-28-2
NMFSYAV	6-12-1	NTFLSD4	6-9-3
	6-21-1		6-17-2
	6-28-2		6-17-1
	6-13-0		
NMFSY0V	6-11-1		6-9-2
	6-16-2		
	6-8-0		
NMCSTD1	6-8-0		
	6-15-0		
	6-25-1		
	6-20-1		
	6-28-2		
	6-22-0		
NMSTCD1	6-17-1		
	6-21-1		
	6-22-0		
	6-23-1		
	6-24-1		
NMSTRD4	6-10-2		
	6-20-2		
	6-14-1		
	6-15-0		
	6-9-2		
	6-18-0		
	6-17-1		
NMSYFAV	6-18-0		
NMS020V	6-15-0		
NMS040V	6-15-0		
	6-18-0		
NMS060V	6-15-0		


÷11 COUNTER
P/O POWER DISTRIBUTION, POWER ON RESET FROM MTS INTERFACE CARD
SPI015
80
LOAD
1209
4-BIT
VIN
CNTR
WMSTRO
66
CLR
SPI006
71
A
SPI011
73
B
SPI005
75
C
SPI013
77
D
NMSYFAV
69
CLK
79
EP
SPI020
ET
70
NMSTR1U
QA
NC
72
NMSTR2U
QB
NC
74
NMSTR3U
QC
NC
76
NMSTR4U
QD
NC
68
NMSTR5U
CO
41
1230
46
NMSTRAV
NMSTRAV
17
19
1218
21
1123R34
55
+5V
NMCSTD1
18
20
1218
14
1123R35
53
+5V
NMSTCD1
24
26
1218
22
11234R34
63
+5V
NMSTRD4
NTISEIU
22
1107
24
NTFLSAV
23
25
1218
27
SPI012
1124R40
+5V
NTFLSD4
6
1319
8
NMSYFAV
76
1245
78
NMFSYAV
NMFSYA
27
1236
26
NMFSY0V
NMSTA1T
6
1236
8
NMS020V
NMSTA3T
4
1236
3
NMS040V
NMSTA5T
5
1236
1
NMS060V
NMSTA7T
9
1236
7
NMS080V
NMSTA9T
15
1236
10
NMS100V

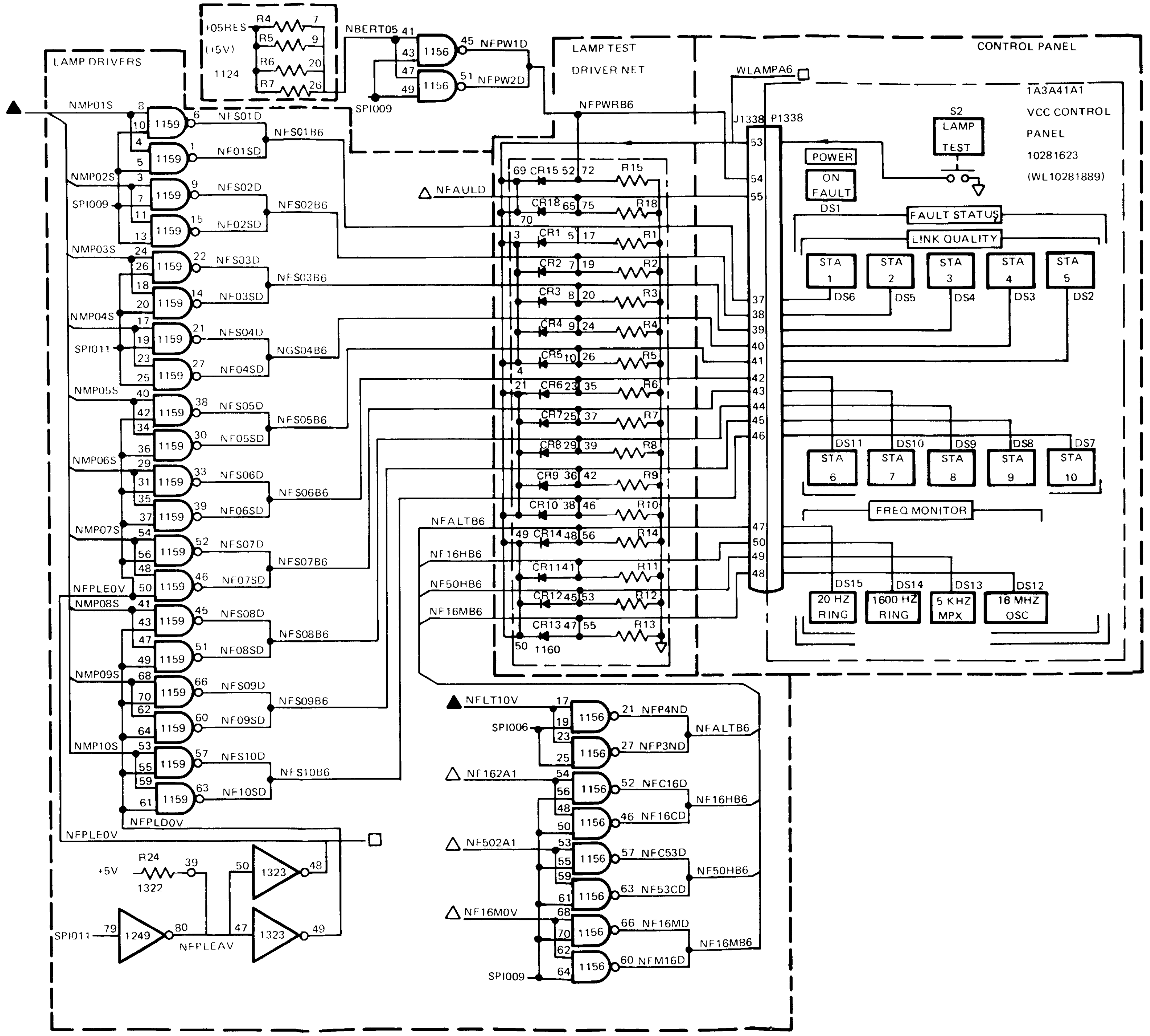
FO-27. Central-to-Station Multiplex Timing, Logic Diagram (Sheet 2 of 3)

INPUTS	F/O-SH	OUTPUTS	F/O-SH
NMDTAO	6-8-0	NMCLKJ	6-26-3
N5000	6-28 2	NMDATOV	6-11 1 6-11-2
		NMFSYA	6 26 3
		NMSTA2T	6-18-0


A1313 MULTIPLIER CONTROL 10281672 (10282595)
J1313
T6
T9
T7
T8
T5
OPERATIONAL AMPLIFIERS
U7A
U7B
AR10
U19
U13C
U8D
Q8, Q9
CLCK
U6A
U6B
AR8
Q7
U13A
U11B
AR9
DA0T
U21
U13D
U22
U16C
CLCK
FSSK LIMITERS
4-BIT BIN CNTR U1 CLK
CLR
C0
÷16 COUNTER
AR7
Q5, Q6
U8B
OPERATIONAL AMPLIFIERS
NMRECAV
NC
NPSKT1MA
NPSKT1MB
TO VCS-TO-VCC INTER-FACE
N5000
SPI020
3
15
63
64
52
51
75
13
80
79
78
14
7
NPSKDATA
NPSKDATB
TO VCS-TO-VCC INTERFACE
NMDAT0V
NMCLKJ
NFS1KA
U8E
U8A
J SD Q
FF U2A
K Q̅
CP
÷4 COUNTER
U11A
DELAY CNTR
PE U3 Q0
CP Q1
MR Q2
U16B
NOTE: UNUSED CIRCUITS ARE NOT SHOWN
U16A
U16F
U9A
U9C
U12C
U16D
U15F
U16E
U15A
U10D
U9B
U9D
U8F
U10C
U15C
U13B
U15D
U10B
FRAME SYNC GENERATOR
U11C
J SD Q
FF U2B
K CP Q̅
U12A
U15E
U11D
U12B
CNTR/DECODER U4, U5
0
1
2
3
4
5
6
7
8
9
CLK
CLR
STATION TIMING COUNTER/DECODER
11
12
33
77
30
32
10
49
48
44
47
43
42
41
38
37
34
NMFSYA
NC
NMDTA0
NMSTA0T
NMSTA1T
NMSTA2T
NMSTA3T
NMSTA4T
NMSTA5T
NMSTA6T
NMSTA7T
NMSTA8T
NMSTA9T

FO-27. Central-to-Station Multiplex Timing, Logic Diagram (Sheet 3 of 3)

INPUTS	F/O - SH
NMP01S	6-11-1
NMP02S	6-11-1
NMP03S	6-11-1
NMP04S	6-11-1
NMP05S	6-11-1
NMP06S	6 11-1
NMP07S	6-11-1
NMP08S	6-11-1
NMP09S	6-11-1
NMP10S	6-11-1
NFLT10V	6-18-0


LAMP DRIVERS
+05RES
(+5V)
1124
R4
R5
R6
R7
NBERT05
1156
NFPW1D
NFPW2D
SPI009
LAMP TEST
DRIVER NET
NFPWRB6
CONTROL PANEL
WLAMPA6
J1338
P1338
1A3A41A1
VCC CONTROL
PANEL
10281623
(WL10281889)
S2
LAMP
TEST
POWER
ON
FAULT
DS1
FAULT STATUS
LINK QUALITY
STA 1
STA 2
STA 3
STA 4
STA 5
DS6
DS5
DS4
DS3
DS2
STA 6
STA 7
STA 8
STA 9
STA 10
DS11
DS10
DS9
DS8
DS7
FREQ MONITOR
20 HZ RING
1600 HZ RING
5 KHZ MPX
18 MHZ OSC
DS15
DS14
DS13
DS12
NMP01S
NMP02S
NMP03S
NMP04S
NMP05S
NMP06S
NMP07S
NMP08S
NMP09S
NMP10S
SPI009
SPI011
NFPLE0V
NFPLD0V
1159
NFS01D
NFS01SD
NFS01B6
NFS02D
NFS02SD
NFS02B6
NFS03D
NFS03SD
NFS03B6
NFS04D
NFS04SD
NGS04B6
NFS05D
NFS05SD
NFS05B6
NFS06D
NFS06SD
NFS06B6
NFS07D
NFS07SD
NFS07B6
NFS08D
NFS08SD
NFS08B6
NFS09D
NFS09SD
NFS09B6
NFS10D
NFS10SD
NFS10B6
NFAULD
NFALTB6
NF16HB6
NF50HB6
NF16MB6
CR1–CR15, CR18
R1–R15, R18
1160
R24
+5V
1322
1323
1249
NFPLEAV
SPI011
NFLT10V
SPI006
NF162A1
NF502A1
NF16M0V
SPI009
NFP4ND
NFP3ND
NFC16D
NF16CD
NFC53D
NF53CD
NF16MD
NFM16D

FO-28. VCC Front Panel and Fault Isolation, Logic Diagram (Sheet 1 of 4)

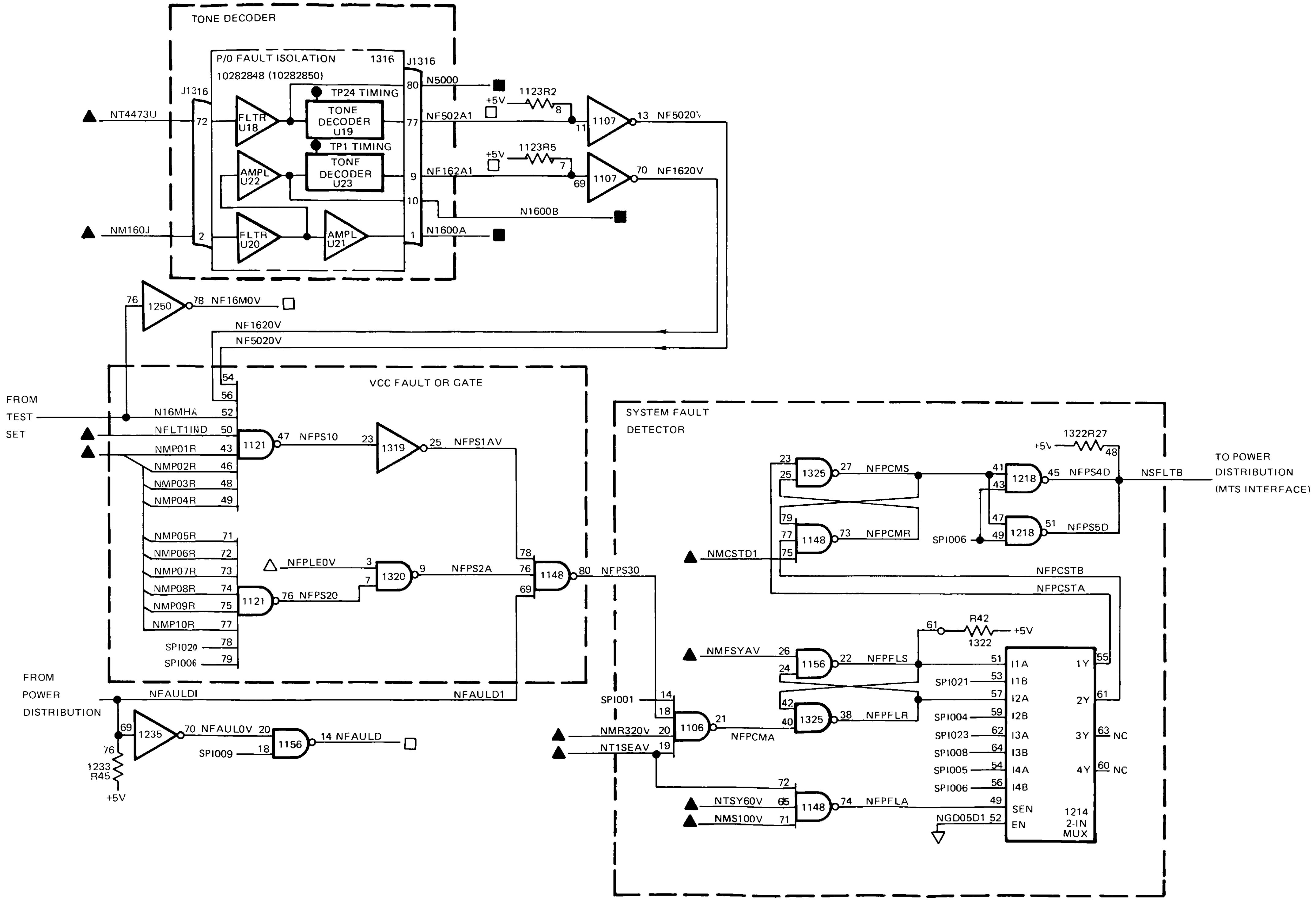
NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED ON CARD CAGE A3A41A2.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

   ▲ INPUT FROM ANOTHER FIGURE
   △ INPUT FROM SAME FIGURE
   ■ OUTPUT TO ANOTHER FIGURE
   ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE
   □ OUTPUT TO SAME FIGURE

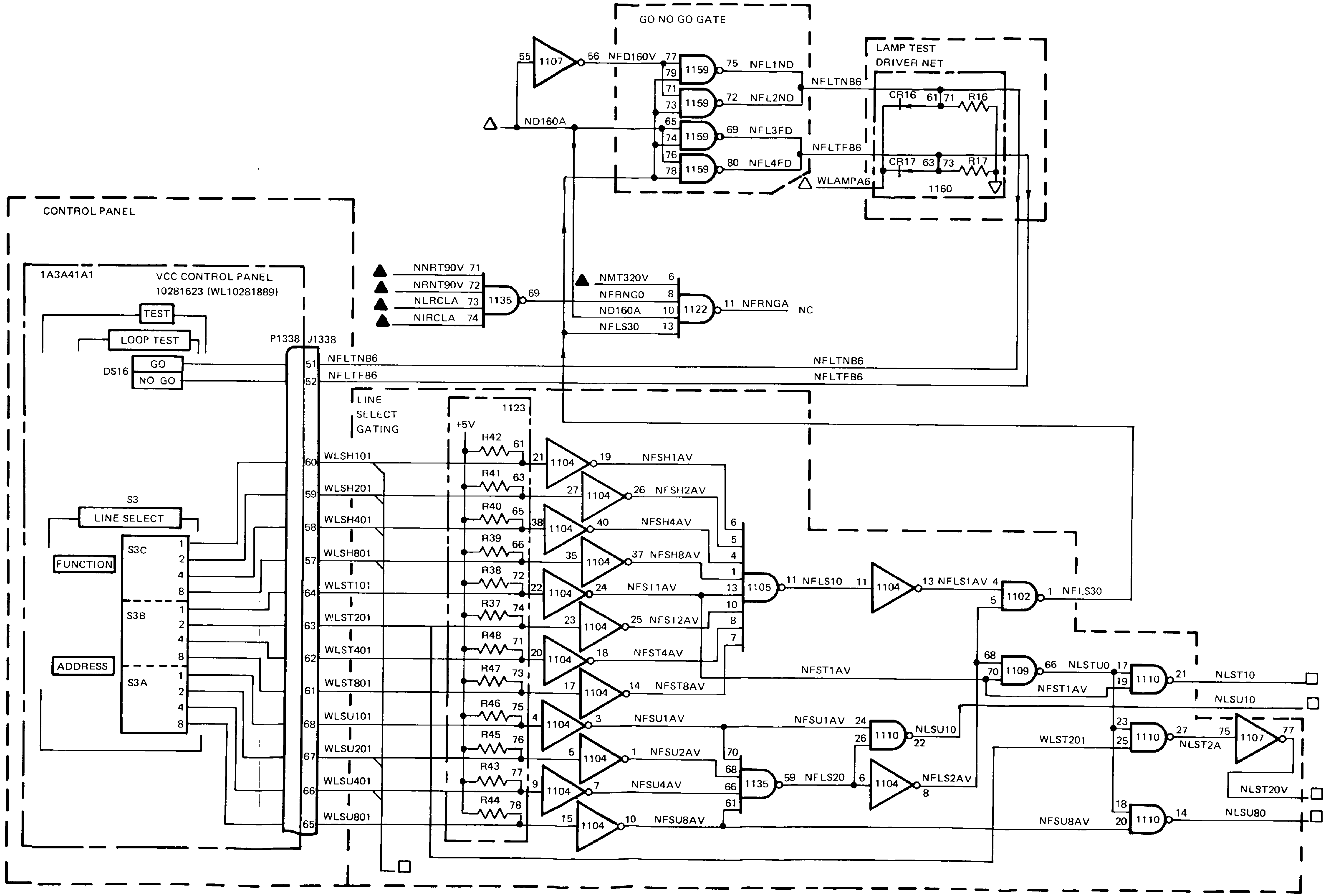
4. REFER TO TABLE 6-2 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO TABLE 6-4 FOR COMPLETE SIGNAL LOOK UP AND CIRCUIT CARD TEST POINTS.
6. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
7. CIRCUIT SYMBOLS INCLUDE CARD LOCATION AND CIRCUIT CARD PIN NUMBERS.
8. SPIXXX INDICATES +5V PULL UP THROUGH RESISTOR CARDS; REFER TO TABLE 6-4 FOR COMMON LISTING.
9. ▽ INDICATES AN ACTIVE LOGIC LOW OR ZERO.
10. ▭ INDICATES EQUIPMENT MARKINGS.

INPUTS	F/O - SH	OUTPUTS	F/O - SH
NFLT11ND	6-18 0	N1600A	6-5-0 6-28-2 6-3-1 6-1-1 6-1-2 6-7-3 6-7-2 6-6-0 6-2-2 6-2 1 6-3-2
NMCSTD1	6-27-2		
NMFSYAV	6-27-2		
NMP01R	6-11-1		
NMP02R	6-11-1		
NMP03R	6-11-1		
NMP04R	6 11-1	N1600B	6-1-4 6-2-4 6-3-4
NMP05R	6 11 1		
NMP06R	6-11-1	N5000	6-27-3
NMP07R	6-11-1		
NMP08R	6-11-1		
NMP09R	6-11-1		
NMP10R	6-11-1		
NMR320V	6-27-1		
NMS100V	6-27-2		
NM160J	6-26-1		
NTSY60V	6-26-3		
NT1SEAV	6-26-3		
NT4473U	6-26-3		
N16MHA	6-26-1		


TONE DECODER
P/O FAULT ISOLATION
10282848 (10282850)
J1316
1316
NT4473U
NM160J
FLTR U18
AMPL U22
FLTR U20
AMPL U21
TP24 TIMING
TONE DECODER U19
TP1 TIMING
TONE DECODER U23
N5000
NF502A1
NF162A1
N1600B
N1600A
+5V
1123R2
1123R5
1107
NF5020V
NF1620V
1250
NF16M0V
VCC FAULT OR GATE
FROM TEST SET
N16MHA
NFLT11ND
NMP01R
NMP02R
NMP03R
NMP04R
NMP05R
NMP06R
NMP07R
NMP08R
NMP09R
NMP10R
SPI020
SPI006
1121
NFPS10
1319
NFPS1AV
NFPLE0V
1320
NFPS2A
NFPS20
1148
NFPS30
FROM POWER DISTRIBUTION
NFAULDI
NFAULD1
1235
NFAUL0V
1156
SPI009
NFAULD
1233 R45
+5V
SYSTEM FAULT DETECTOR
1325
NFPCMS
1218
NFPS4D
NSFLTB
1322R27
TO POWER DISTRIBUTION (MTS INTERFACE)
NMCSTD1
1148
NFPCMR
SPI006
NFPS5D
NFPCSTB
NFPCSTA
R42 1322
NMFSYAV
1156
NFPLS
1325
NFPLR
SPI001
NMR320V
NT1SEAV
1106
NFPCMA
NTSY60V
NMS100V
NFPLA
SPI021
SPI004
SPI023
SPI008
SPI005
SPI006
NGD05D1
I1A
I1B
I2A
I2B
I3A
I3B
I4A
I4B
SEN
EN
1Y
2Y
3Y
4Y
NC
1214 2-IN MUX

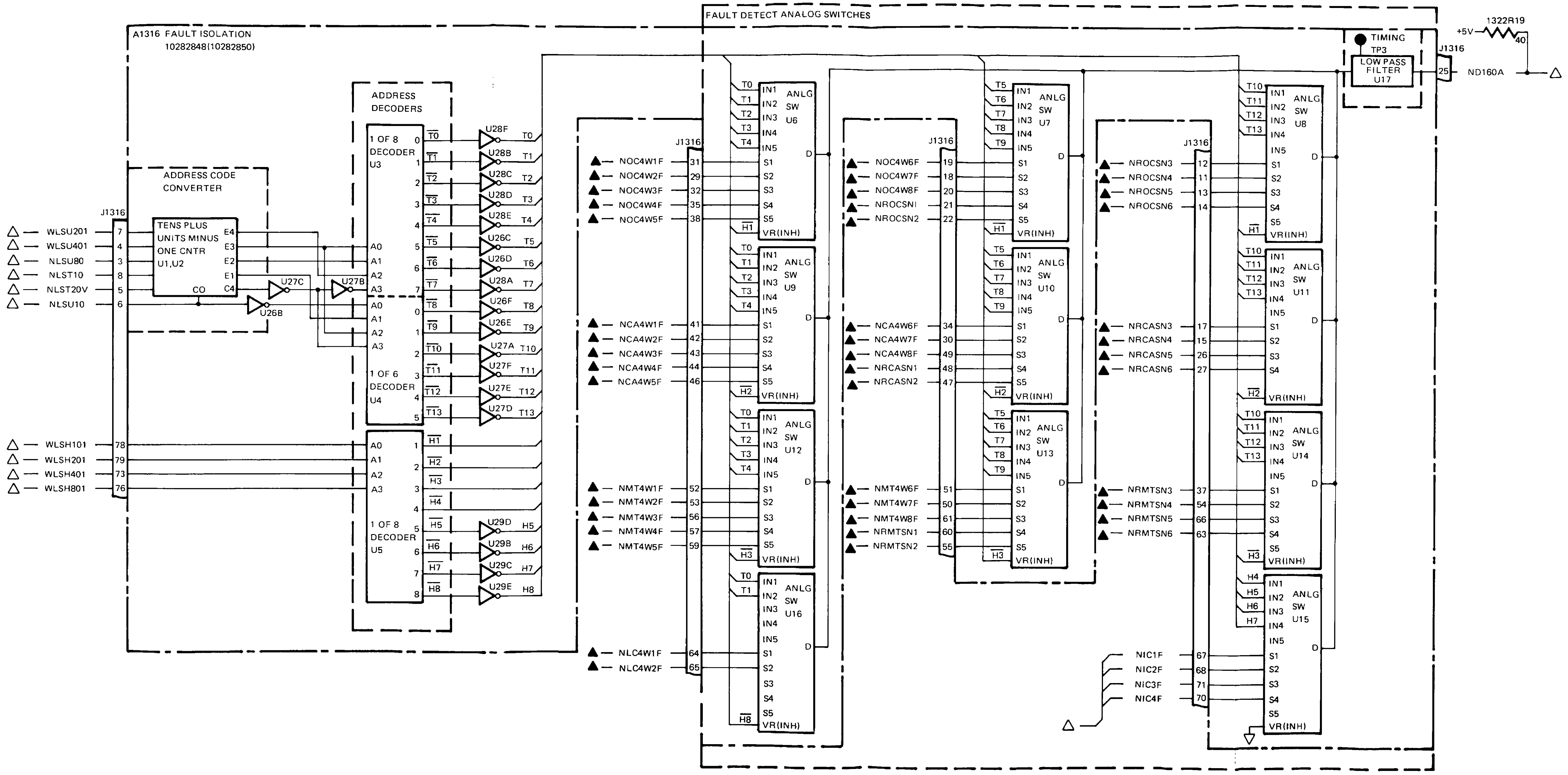
FO-28. VCC Front Panel and Fault Isolation, Logic Diagram (Sheet 2 of 4)

INPUTS	F/O-SH
NIRCLA	6-18-0
NLRCLA	6-18-0
NMT320V	6-27-1
NNRT90V	6-12-1
NRNT90V	6-12-1


GO NO GO GATE
LAMP TEST
DRIVER NET
CONTROL PANEL
1A3A41A1
VCC CONTROL PANEL
10281623 (WL10281889)
TEST
LOOP TEST
DS16
GO
NO GO
P1338
J1338
S3
LINE SELECT
FUNCTION
ADDRESS
S3C
S3B
S3A
LINE
SELECT
GATING
1123
+5V
1107
1159
1160
1135
1122
1104
1105
1102
1109
1110
CR16
CR17
R16
R17
R42
R41
R40
R39
R38
R37
R48
R47
R46
R45
R43
R44
ND160A
NFD160V
NFL1ND
NFL2ND
NFL3FD
NFL4FD
NFLTNB6
NFLTFB6
WLAMPA6
NNRT90V
NRNT90V
NLRCLA
NIRCLA
NMT320V
NFRNG0
NFLS30
NFRNGA
NC
WLSH101
WLSH201
WLSH401
WLSH801
WLST101
WLST201
WLST401
WLST801
WLSU101
WLSU201
WLSU401
WLSU801
NFSH1AV
NFSH2AV
NFSH4AV
NFSH8AV
NFST1AV
NFST2AV
NFST4AV
NFST8AV
NFSU1AV
NFSU2AV
NFSU4AV
NFSU8AV
NFLS10
NFLS1AV
NFLS20
NFLS2AV
NLSU10
NLSTU0
NLST10
NLST2A
NLST20V
NLSU80

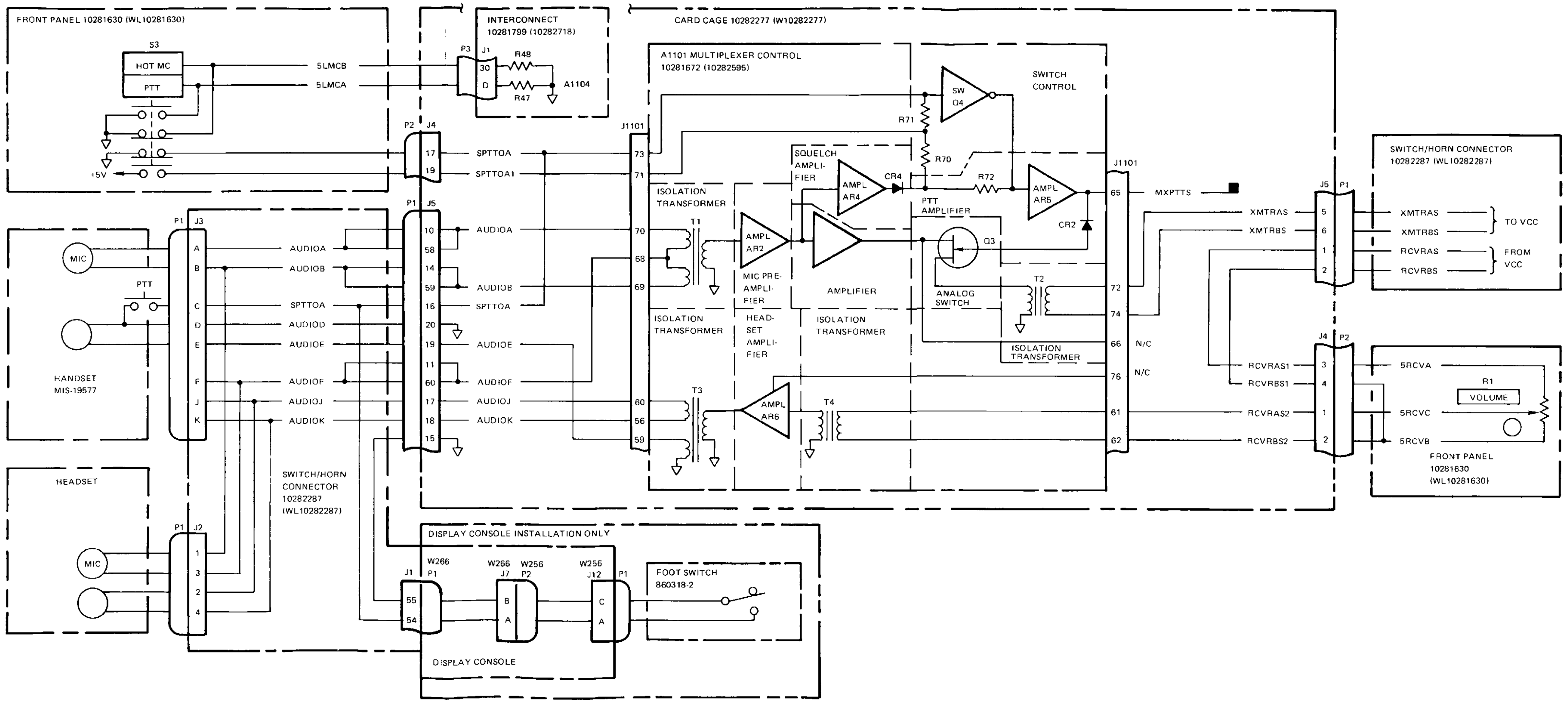
FO-28. VCC Front Panel and Fault Location, Logic Diagram (Sheet 3 of 4)

INPUTS	F/O-SH	INPUTS	F/O-SH
NCA4W1 F	6-2-1	NOC4W2F	6-1-1
NCA4W2F	6-2-1	NOC4W3F	6-1-1
NCA4W3F	6-2-1	NOC4W4F	6-1-2
NCA4W4F	6-2-2	NOC4W5F	6-1-2
NCA4W5 F	6-2-2	NOC4W6F	6-1-2
NCA4W6F	6-2-2	NOC4W7F	6-1-2
NCA4W7F	6-2-2	NOC4WSF	6-1-2
NCA4W8F	6-2-2	NRCASN1	6-2-3
NIC1F	6-6-0	NRCASN2	6-2-3
NIC2F	6-6-0	NRCASN3	6-2-3
NIC3F	6-60	NRCASN4	6-2-3
NIC4F	6-60	NRCASN5	6-2-3
NLC4W1F	6-7-3	NRCASN6	6-2-3
NLC4W2F	6-7-3	NRMTSN1	6-3-3
NMT4W1F	6-3-1	NRMTSN2	6-3-3
NMT4W2F	6-3-1	NRMTSN3	6-3-3
NMT4W3F	6-3-1	NRMTSN4	6-3-3
NMT4W4F	6-3-2	NRMTSN5	6-3-3
NMT4W5F	6-3-2	NRMTSN6	6-3-3
NMT4W6F	6-3-2	NROCSN1	6-1-3
NMT4W7F	6-3-2	NROCSN2	6-1-3
NMT4W8F	6-3-2	NROCSN3	6-1-3
NOC4W1F	6-1-1	NROCSN4	6-1-3
NROCSN5	6-1-3		
NROCSN6	6-1-3		


FAULT DETECT ANALOG SWITCHES
A1316 FAULT ISOLATION
10282848(10282850)
ADDRESS DECODERS
ADDRESS CODE CONVERTER
TENS PLUS UNITS MINUS ONE CNTR U1,U2
E4
E3
E2
E1
C4
CO
U27C
U27B
U26B
J1316
WLSU201
WLSU401
NLSU80
NLST10
NLST20V
NLSU10
WLSH101
WLSH201
WLSH401
WLSH801
1 OF 8 DECODER U3
1 OF 6 DECODER U4
1 OF 8 DECODER U5
A0
A1
A2
A3
U28F
U28B
U28C
U28D
U28E
U26C
U26D
U28A
U26F
U26E
U27A
U27F
U27E
U27D
U29D
U29B
U29C
U29E
T0
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
T13
H1
H2
H3
H4
H5
H6
H7
H8
ANLG SW U6
ANLG SW U7
ANLG SW U8
ANLG SW U9
ANLG SW U10
ANLG SW U11
ANLG SW U12
ANLG SW U13
ANLG SW U14
ANLG SW U15
ANLG SW U16
IN1
IN2
IN3
IN4
IN5
S1
S2
S3
S4
S5
D
VR(INH)
NOC4W1F
NOC4W2F
NOC4W3F
NOC4W4F
NOC4W5F
NOC4W6F
NOC4W7F
NOC4W8F
NROCSN1
NROCSN2
NROCSN3
NROCSN4
NROCSN5
NROCSN6
NCA4W1F
NCA4W2F
NCA4W3F
NCA4W4F
NCA4W5F
NCA4W6F
NCA4W7F
NCA4W8F
NRCASN1
NRCASN2
NRCASN3
NRCASN4
NRCASN5
NRCASN6
NMT4W1F
NMT4W2F
NMT4W3F
NMT4W4F
NMT4W5F
NMT4W6F
NMT4W7F
NMT4W8F
NRMTSN1
NRMTSN2
NRMTSN3
NRMTSN4
NRMTSN5
NRMTSN6
NLC4W1F
NLC4W2F
NIC1F
NIC2F
NIC3F
NIC4F
TIMING TP3
LOW PASS FILTER U17
+5V
1322R19
40
25
ND160A

FO-28. VCC Front Panel and Fault Isolation, Logic Diagram (Sheet 4 of 4)

OUTPUTS	F O - SH
MXPTTS	6-30-2


FRONT PANEL 10281630 (WL10281630)
S3
HOT MC
PTT
5LMCB
5LMCA
+5V
INTERCONNECT
10281799 (10282718)
P3
J1
30
D
R48
R47
A1104
P2
J4
17
19
SPTTOA
SPTTOA1
P1
J5
10
58
14
59
16
20
19
11
60
17
18
15
AUDIOA
AUDIOB
SPTTOA
AUDIOE
AUDIOF
AUDIOJ
AUDIOK
P1
J3
A
B
C
D
E
F
J
K
AUDIOA
AUDIOB
SPTTOA
AUDIOD
AUDIOE
AUDIOF
AUDIOJ
AUDIOK
MIC
PTT
HANDSET
MIS-19577
HEADSET
MIC
P1
J2
1
3
2
4
SWITCH/HORN
CONNECTOR
10282287
(WL10282287)
CARD CAGE 10282277 (W10282277)
A1101 MULTIPLEXER CONTROL
10281672 (10282595)
J1101
73
71
70
68
69
60
56
59
ISOLATION
TRANSFORMER
T1
AMPL
AR2
MIC PRE-
AMPLI-
FIER
SQUELCH
AMPLI-
FIER
AMPL
AR4
CR4
AMPLIFIER
SW
Q4
SWITCH
CONTROL
R71
R70
R72
PTT
AMPLIFIER
AMPL
AR5
CR2
Q3
ANALOG
SWITCH
T2
ISOLATION
TRANSFORMER
HEAD-
SET
AMPLI-
FIER
ISOLATION
TRANSFORMER
ISOLATION
TRANSFORMER
T3
AMPL
AR6
T4
J1101
65
72
74
66
76
61
62
N/C
N/C
MXPTTS
XMTRAS
XMTRBS
RCVRAS1
RCVRBS1
RCVRAS2
RCVRBS2
J5
P1
5
6
1
2
SWITCH/HORN CONNECTOR
10282287 (WL10282287)
XMTRAS
XMTRBS
RCVRAS
RCVRBS
TO VCC
FROM
VCC
J4
P2
3
4
1
2
5RCVA
5RCVC
5RCVB
R1
VOLUME
FRONT PANEL
10281630
(WL10281630)
DISPLAY CONSOLE INSTALLATION ONLY
W266
P1
J1
55
54
W266
J7
W256
P2
B
A
W256
J12
P1
C
A
FOOT SWITCH
860318-2
DISPLAY CONSOLE

IOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.

2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED IN UNIT 1A9 OR 1A10.

3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲	INPUT FROM ANOTHER FIGURE
△	INPUT FROM SAME FIGURE
■	OUTPUT TO ANOTHER FIGURE
◪	OUTPUT TO BOTH SAME AND ANOTHER FIGURE
□	OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-3 FOR CIRCUIT CARDS THAT ARE MODULE SET TESTABLE AND CIRCUIT CARD LOCATIONS.

5. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

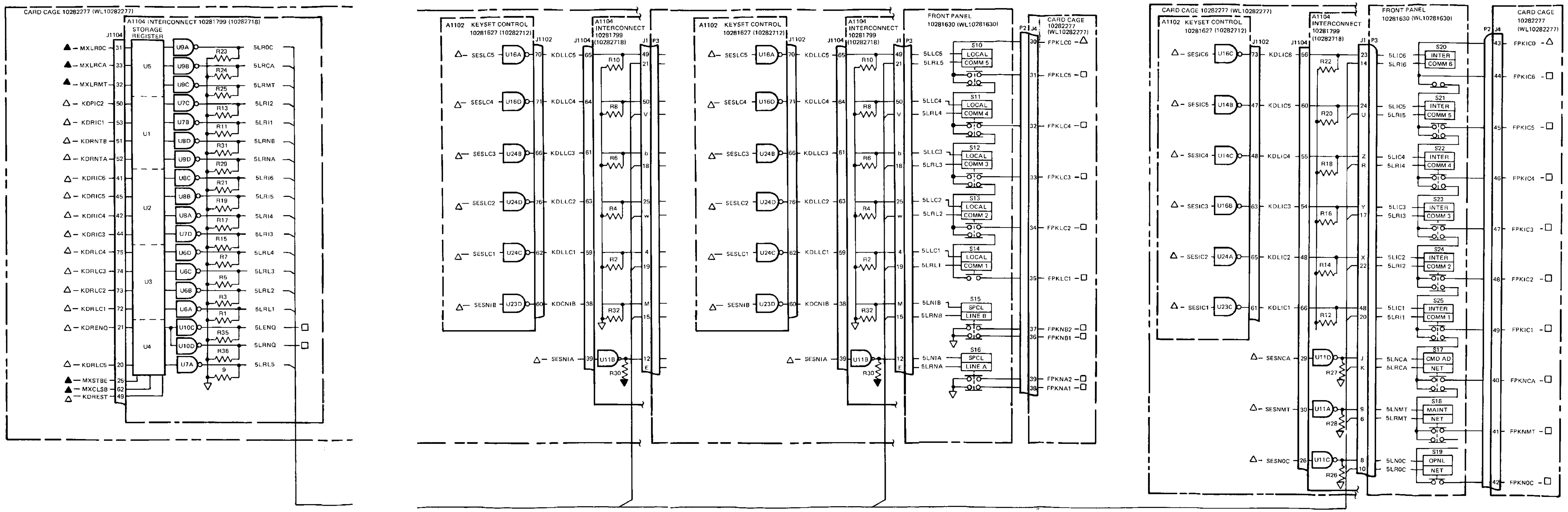
6. ALL RESISTANCE VALUES ARE IN OHMS ±2%, 1/4 WATT

7. ALL CAPACITANCE VALUES ARE IN MICROFARADS ±10%, 6 VOLTS.

8. ▭ INDICATES EQUIPMENT MARKINGS.

FO-29. VCS Audio Circuits, Logic Diagram

INPUTS	F/O- SH
MXCLSB	6 31-0
MXLRCA	6-31-0
MXLRMT	6-31-0
MXLROC	6-31-0
MXSTBE	6-31-0


CARD CAGE 10282277 (WL10282277)
A1104 INTERCONNECT 10281799 (10282718)
STORAGE REGISTER
J1104
U5
U1
U2
U3
U4
A1102 KEYSET CONTROL 10281627 (10282712)
J1102
A1104 INTERCONNECT 10281799 (10282718)
J1
P3
FRONT PANEL 10281630 (WL10281630)
P2
J4
CARD CAGE 10282277 (WL10282277)
S10 LOCAL COMM 5
S11 LOCAL COMM 4
S12 LOCAL COMM 3
S13 LOCAL COMM 2
S14 LOCAL COMM 1
S15 SPCL LINE B
S16 SPCL LINE A
S20 INTER COMM 6
S21 INTER COMM 5
S22 INTER COMM 4
S23 INTER COMM 3
S24 INTER COMM 2
S25 INTER COMM 1
S17 CMD AD NET
S18 MAINT NET
S19 OPNL NET

FO-30. VCS Front Panel Control, Logic Diagram (Sheet 1 of 2)

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.
2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED IN UNIT 1A9 OR 1A10.
3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

▲ INPUT FROM ANOTHER FIGURE

△ INPUT FROM SAME FIGURE

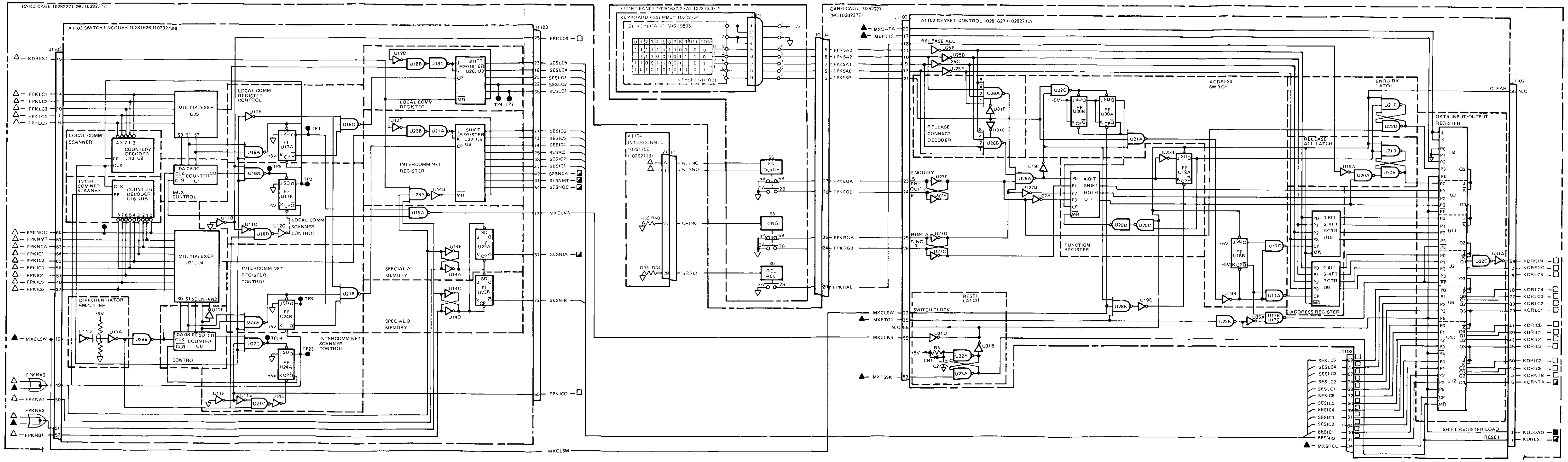
■ OUTPUT TO ANOTHER FIGURE

◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE

□ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-3 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.
5. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.
6. ▭ INDICATES EQUIPMENT MARKINGS.

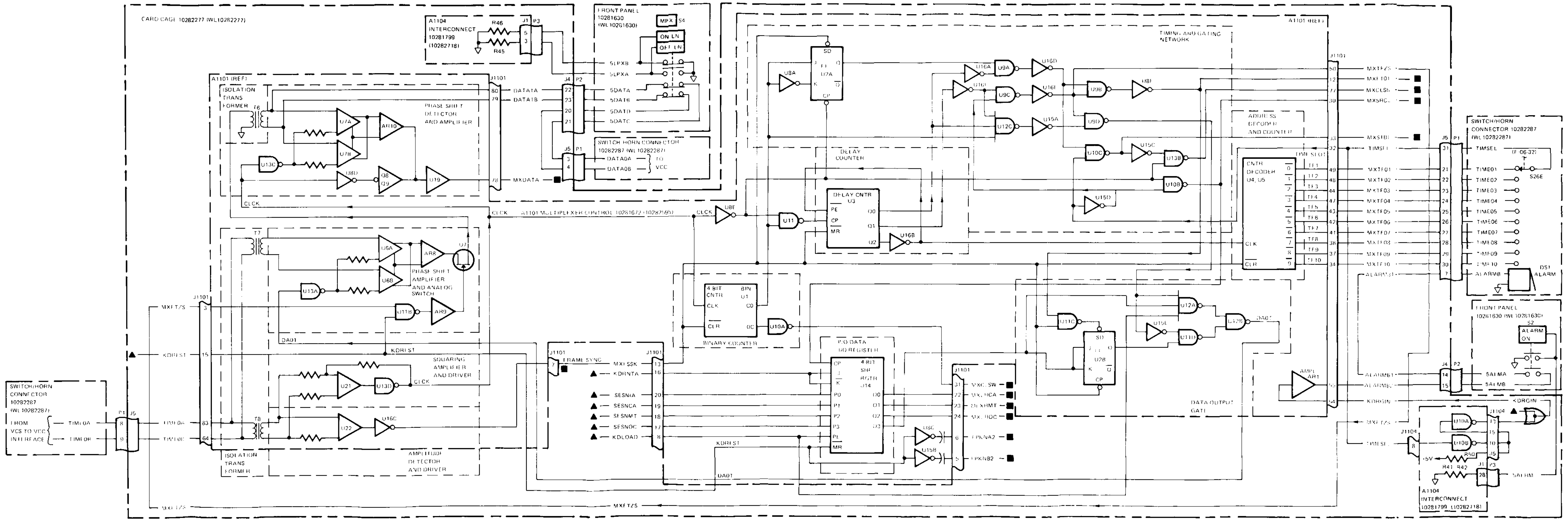
INPUTS	FIO - SH	OUTPUTS	F/O - SH
FPKNA2	6-31-0	KDLOAD	6-31-0
FPKNB2	6-31-0	KDREST	6-31-0
MXCLSW	6-31-0	KDRGIN	6-31-0
MXDATA	6-31-0	KDRNTA	6-31-0
MXFSSK	6-31-0	SESNCA	6-31-0
MXFT01	6-31-0	SESNIA	6-31-0
MXPTTS	6-31-0	SESNMT	6-31-0
MXSRCL	6-31-0	SESNOC	6-31-0



CARD CAGE 10282271 (WL10282272)
A1103 SWITCH ENCODER 10281626 (10282708)
LOCAL COMM SCANNER
COUNTER/DECODER U10, U9
INTER COMM NET SCANNER
COUNTER/DECODER U16, U15
MULTIPLEXER U29
COUNTER U1
MUX CONTROL
LOCAL COMM REGISTER CONTROL
MULTIPLEXER U31, U4
INTERCOMM NET REGISTER CONTROL
LOCAL COMM SCANNER CONTROL
DIFFERENTIATOR AMPLIFIER
COUNTER U8
CONTRO
INTERCOMM NET SCANNER CONTROL
SHIFT REGISTER U26, U3
LOCAL COMM REGISTER
SHIFT REGISTER U32, U5, U6
INTERCOMM NET REGISTER
SPECIAL A MEMORY
SPECIAL B MEMORY
FRONT PANEL 10281630-2 (WL10281631)
KEYBOARD ASSEMBLY 10282724
S1 KEYBOARD MIS 19505
KEYSET STROBE
A1104 INTERCONNECT 10281799 (10282718)
EN QUIRY
RING
REL ALL
CARD CAGE 10282277 (WL10282277)
A1102 KEYSET CONTROL 10281627 (10282714)
RELEASE ALL
RELEASE/CONNECT DECODER
ENQUIRY
RING
RESET LATCH
SWITCH CLOCK
4-BIT SHIFT RGTR U11
FUNCTION REGISTER
ADDRESS SWITCH
ENQUIRY LATCH
RELEASE ALL LATCH
4 BIT SHIFT RGTR U10
4 BIT SHIFT RGTR U9
ADDRESS REGISTER
DATA INPUT/OUTPUT REGISTER
SHIFT REGISTER LOAD
RESET
CLEAR
KDREST
KDLOAD
MXCLSW
MXCLKS
MXDATA
MXPTTS
MXFT01
MXFSSK
MXSRCL
FPKNA2
FPKNA1
FPKNB2
FPKNB1

FO-30. VCCS Front Panel Control, Logic Diagram (Sheet 2 of 2)

INPUTS	F/O - SH	OUTPUTS	F/O - SH
KDLOAD	6-30-2	FPKNA2	6-30-2
KDREST	6-30-2	FPKNB2	6-30-2
KDRGIN	6-30-2	MXCLSB	6-30-1
KDRNTA	6-30-2	MXCLSW	6-30-2
SESNCA	6-30-2	MXDATA	6-30-2
SESNIA	6-30 2	MXFSSK	6-30-2
SESNMT	6 30-2	MXFT01	6-30-2
SESNOC	6-30-2	MXLRCA	6-30-1
MXLRMT	6 30-1		
MXLROC	6-30-1		
MXSRCL	6-30-2		
MXSTBE	6-30-1		


CARD CAGE 10282277 (WL10282277)
A1101 (REF)
ISOLATION TRANSFORMER
PHASE SHIFT DETECTOR AND AMPLIFIER
PHASE SHIFT AMPLIFIER AND ANALOG SWITCH
SQUARING AMPLIFIER AND DRIVER
AMPLITUDE DETECTOR AND DRIVER
A1104 INTERCONNECT 10281799 (10282718)
FRONT PANEL 10281630 (WL10281630)
MPX
ON LN
OFF LN
SWITCH HORN CONNECTOR
DATA1A
DATA1B
MXDATA
CLCK
A1101 MULTIPLEXER CONTROL
TIMING AND GATING NETWORK
DELAY COUNTER
DELAY CNTR
4 BIT CNTR
BINARY COUNTER
FRAME SYNC
P/O DATA REGISTER
8 BIT SHIFT REGTR
ADDRESS DECODER AND COUNTER
CNTR DECODER
DATA OUTPUT GATE
SWITCH HORN CONNECTOR 10282287
FRONT PANEL
ALARM
DS1 ALARM
KDRGIN
KDREST
SESNIA
SESNCA
SESNMT
SESNOC
KDLOAD
KDRNTA
MXFSSK
MXCLSW
MXLRCA
MXLRMT
MXLROC
FPKNA2
FPKNB2
MXFT01
MXFT02
MXFT03
MXFT04
MXFT05
MXFT06
MXFT07
MXFT08
MXFT09
MXFT10
TIMSEL
MXFTZS
DA01

FO-31. VCS Multiplexer Control, Logic Diagram

NOTES: UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN, FOR COMPLETE DESIGNATIONS, PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION.

2. ALL CIRCUITS SHOWN ON THIS FIGURE ARE CONTAINED IN UNIT 1A9 OR 1A10.

3. DEFINITION FOR SYMBOLS SHOWN ARE AS FOLLOWS:

   ▲ INPUT FROM ANOTHER FIGURE

   △ INPUT FROM SAME FIGURE

   ■ OUTPUT TO ANOTHER FIGURE

   ◪ OUTPUT TO BOTH SAME AND ANOTHER FIGURE

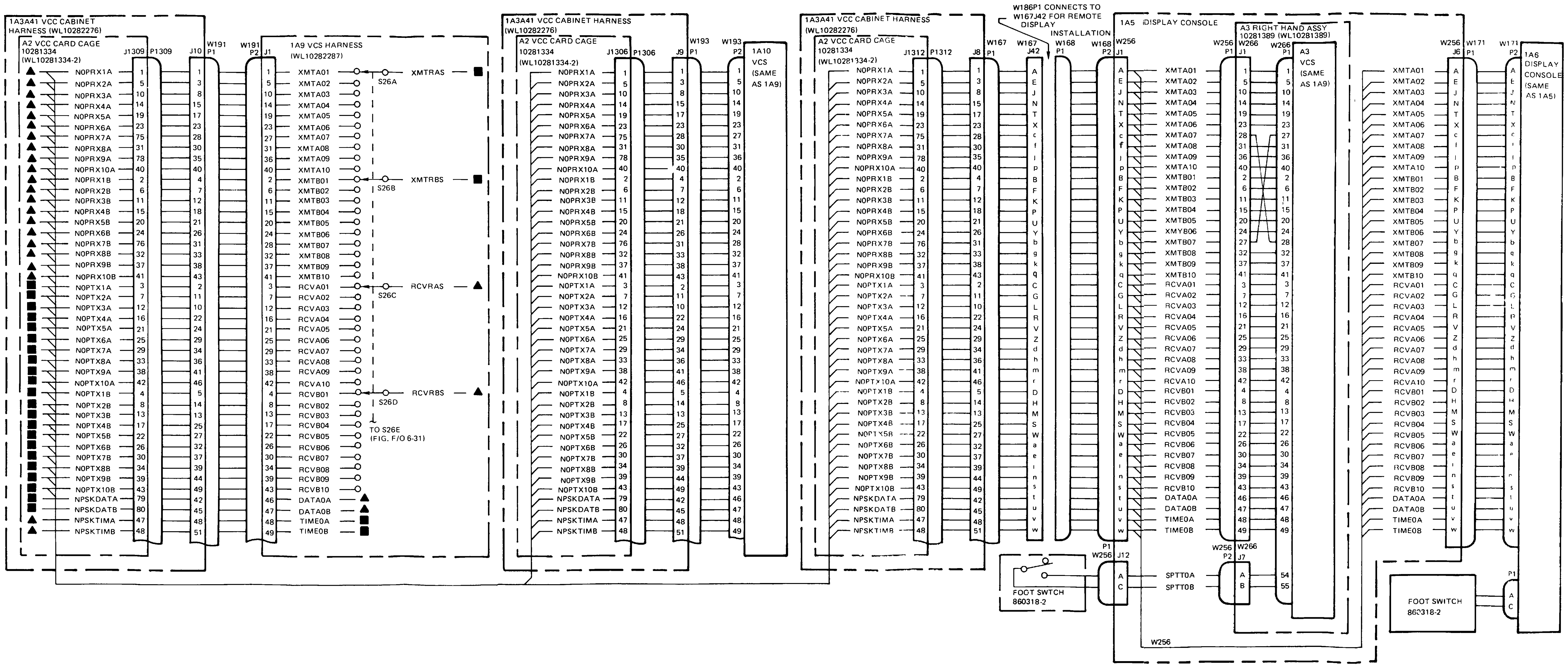
   ⊏ OUTPUT TO SAME FIGURE

4. REFER TO TABLE 6-3 FOR CIRCUIT CARDS THAT ARE MODULE TEST SET TESTABLE AND CIRCUIT CARD LOCATIONS.

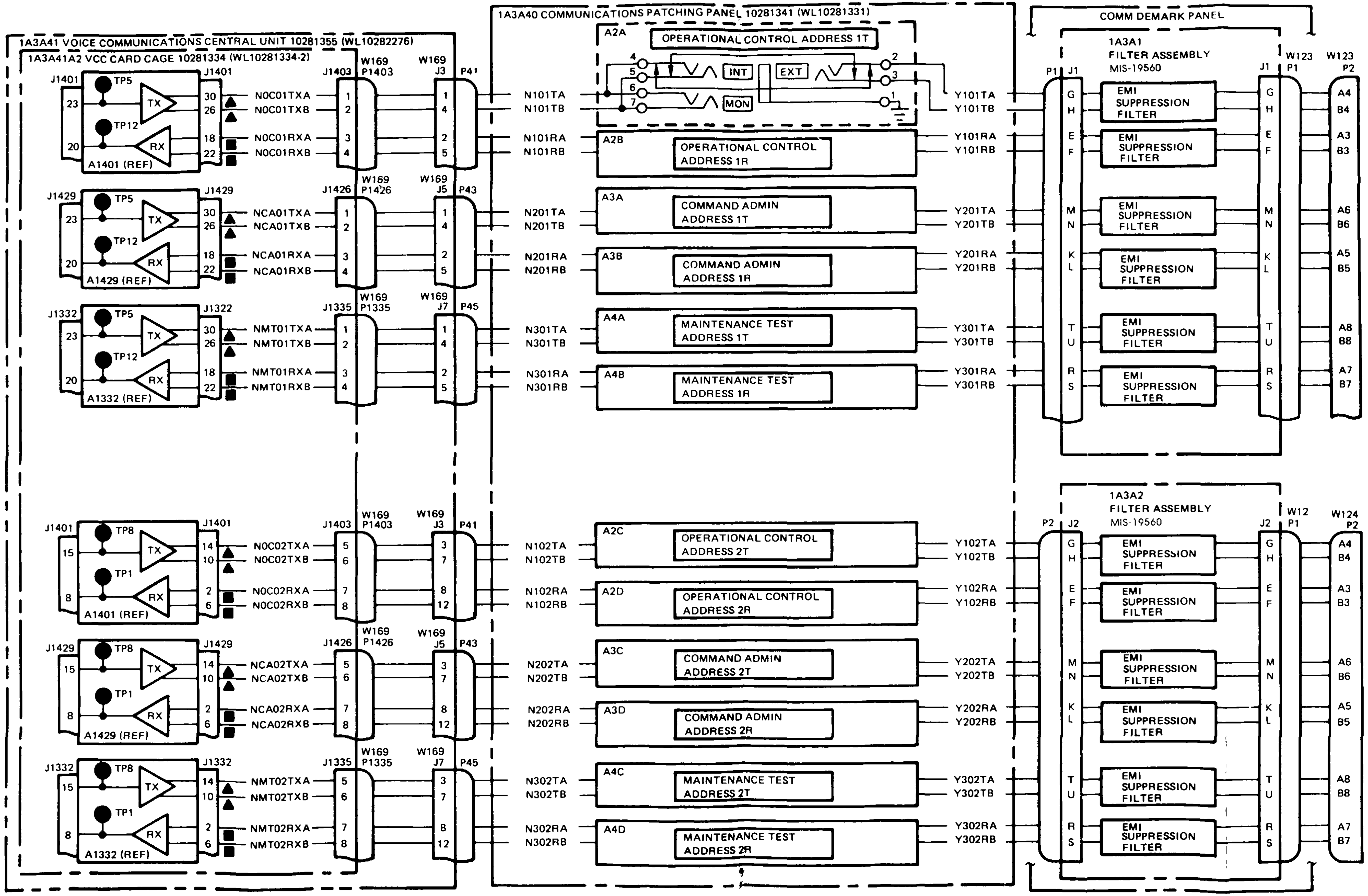
5. REFER TO VOICE COMMUNICATIONS POWER DISTRIBUTION DIAGRAMS FOR DC POWER AND GROUND CIRCUITS.

6. ▭ INDICATES EQUIPMENT MARKINGS.

NOTE
INPUT AND OUTPUT REFERENCES ARE TO FROM FO-5, FO-27, FO-29 AND FO-31

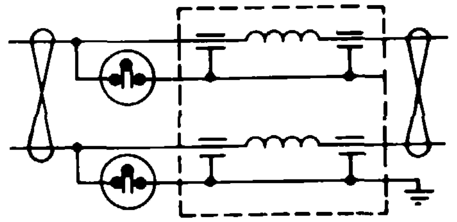

1A3A41 VCC CABINET HARNESS (WL10282276)
A2 VCC CARD CAGE 10281334 (WL10281334-2)
J1309
P1309
J10
W191 P1
W191 P2
J1
1A9 VCS HARNESS (WL10282287)
XMTRAS
S26A
XMTRBS
S26B
RCVRAS
S26C
RCVRBS
S26D
TO S26E (FIG. F/O 6-31)
1A3A41 VCC CABINET HARNESS (WL10282276)
A2 VCC CARD CAGE 10281334 (WL10281334-2)
J1306
P1306
J9
W193 P1
W193 P2
1A10 VCS (SAME AS 1A9)
1A3A41 VCC CABINET HARNESS (WL10282276)
A2 VCC CARD CAGE 10281334 (WL10281334-2)
J1312
P1312
J8
W167 P1
W167 J42
W186P1 CONNECTS TO W167J42 FOR REMOTE DISPLAY INSTALLATION
W168 P1
W168 P2
W256 J1
1A5 DISPLAY CONSOLE
A3 RIGHT HAND ASSY 10281389 (WL10281389)
W256 P1
W266 J1
W266 P1
A3 VCS (SAME AS 1A9)
W256 J6
W171 P1
W171 P2
1A6 DISPLAY CONSOLE (SAME AS 1A5)
P1 W256 J12
W256 P2
W266 J7
SPTT0A
SPTT0B
FOOT SWITCH 860318-2
FOOT SWITCH 860318-2
P1
W256
N0PRX1A
N0PRX2A
N0PRX3A
N0PRX4A
N0PRX5A
N0PRX6A
N0PRX7A
N0PRX8A
N0PRX9A
N0PRX10A
N0PRX1B
N0PRX2B
N0PRX3B
N0PRX4B
N0PRX5B
N0PRX6B
N0PRX7B
N0PRX8B
N0PRX9B
N0PRX10B
N0PTX1A
N0PTX2A
N0PTX3A
N0PTX4A
N0PTX5A
N0PTX6A
N0PTX7A
N0PTX8A
N0PTX9A
N0PTX10A
N0PTX1B
N0PTX2B
N0PTX3B
N0PTX4B
N0PTX5B
N0PTX6B
N0PTX7B
N0PTX8B
N0PTX9B
N0PTX10B
NPSKDATA
NPSKDATB
NPSKTIMA
NPSKTIMB
XMTA01
XMTA02
XMTA03
XMTA04
XMTA05
XMTA06
XMTA07
XMTA08
XMTA09
XMTA10
XMTB01
XMTB02
XMTB03
XMTB04
XMTB05
XMTB06
XMTB07
XMTB08
XMTB09
XMTB10
RCVA01
RCVA02
RCVA03
RCVA04
RCVA05
RCVA06
RCVA07
RCVA08
RCVA09
RCVA10
RCVB01
RCVB02
RCVB03
RCVB04
RCVB05
RCVB06
RCVB07
RCVB08
RCVB09
RCVB10
DATA0A
DATA0B
TIME0A
TIME0B

Change 1 FO-32. VCS-to VCC Interface Diagram


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
COMM DEMARK PANEL
J1401
TP5
TP12
TP8
TP1
TX
RX
A1401 (REF)
A1429 (REF)
A1332 (REF)
J1429
J1332
J1322
J1403
J1426
J1335
W169
P1403
P1426
P1335
J3
J5
J7
P41
P43
P45
N0C01TXA
N0C01TXB
N0C01RXA
N0C01RXB
NCA01TXA
NCA01TXB
NCA01RXA
NCA01RXB
NMT01TXA
NMT01TXB
NMT01RXA
NMT01RXB
N0C02TXA
N0C02TXB
N0C02RXA
N0C02RXB
NCA02TXA
NCA02TXB
NCA02RXA
NCA02RXB
NMT02TXA
NMT02TXB
NMT02RXA
NMT02RXB
N101TA
N101TB
N101RA
N101RB
N201TA
N201TB
N201RA
N201RB
N301TA
N301TB
N301RA
N301RB
N102TA
N102TB
N102RA
N102RB
N202TA
N202TB
N202RA
N202RB
N302TA
N302TB
N302RA
N302RB
A2A
OPERATIONAL CONTROL ADDRESS 1T
INT
EXT
MON
A2B
OPERATIONAL CONTROL ADDRESS 1R
A3A
COMMAND ADMIN ADDRESS 1T
A3B
COMMAND ADMIN ADDRESS 1R
A4A
MAINTENANCE TEST ADDRESS 1T
A4B
MAINTENANCE TEST ADDRESS 1R
A2C
OPERATIONAL CONTROL ADDRESS 2T
A2D
OPERATIONAL CONTROL ADDRESS 2R
A3C
COMMAND ADMIN ADDRESS 2T
A3D
COMMAND ADMIN ADDRESS 2R
A4C
MAINTENANCE TEST ADDRESS 2T
A4D
MAINTENANCE TEST ADDRESS 2R
Y101TA
Y101TB
Y101RA
Y101RB
Y201TA
Y201TB
Y201RA
Y201RB
Y301TA
Y301TB
Y301RA
Y301RB
Y102TA
Y102TB
Y102RA
Y102RB
Y202TA
Y202TB
Y202RA
Y202RB
Y302TA
Y302TB
Y302RA
Y302RB
1A3A1
FILTER ASSEMBLY
MIS-19560
1A3A2
FILTER ASSEMBLY
MIS-19560
P1
J1
P2
J2
W123
W12
W124
EMI SUPPRESSION FILTER
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

NOTES UNLESS OTHERWISE SPECIFIED

1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR COMPLETE DESIGNATIONS PREFIX WITH APPLICABLE UNIT NUMBER AND ASSEMBLY DESIGNATION



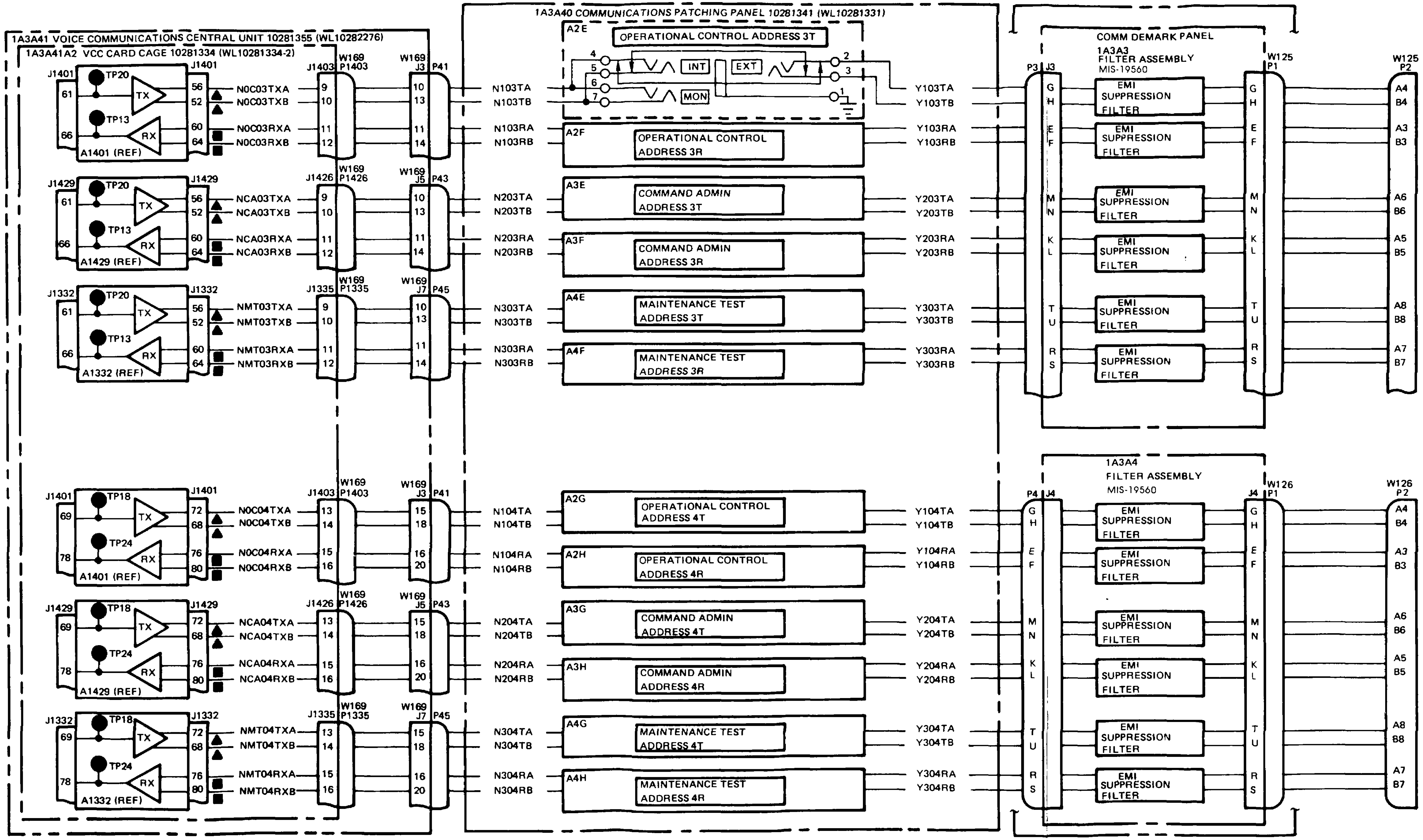
2. TYPICAL EMI SUPPRESSION FILTER

3. DEFINITION FOR SY'MBOLS SHOWN ARE AS FOLLOWS

▲ INPUT FROM ANOTHER FIGURE
■ OUTPUT TO ANOTHER FIGURE

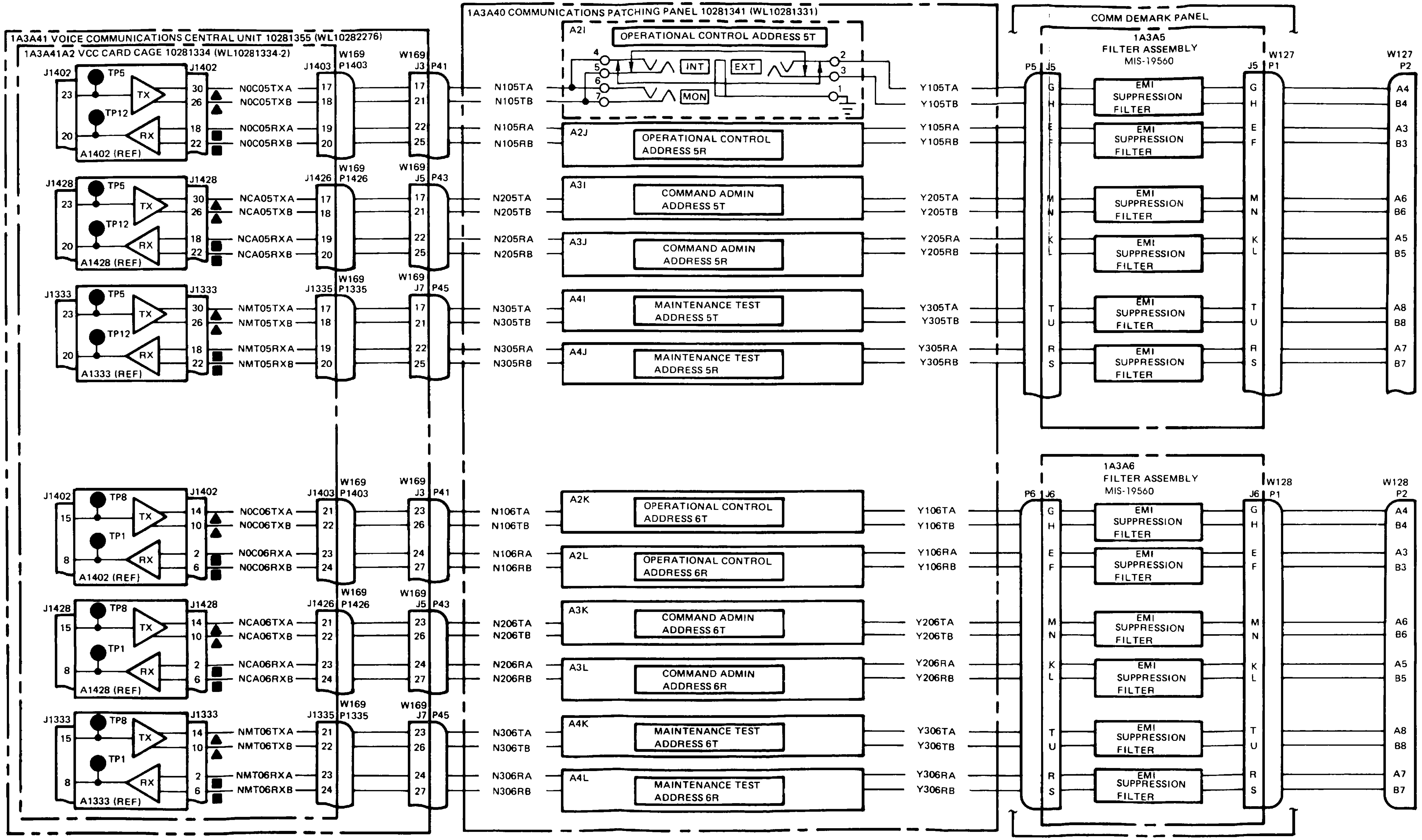
4. REFER TO F/06 1 THRU 6-3 FOR INIPUT AND OUTPUT REFERENCES

Change 1 FO-33. External Subscriber Patch Interface Diagram (Sheet 1 of 17)

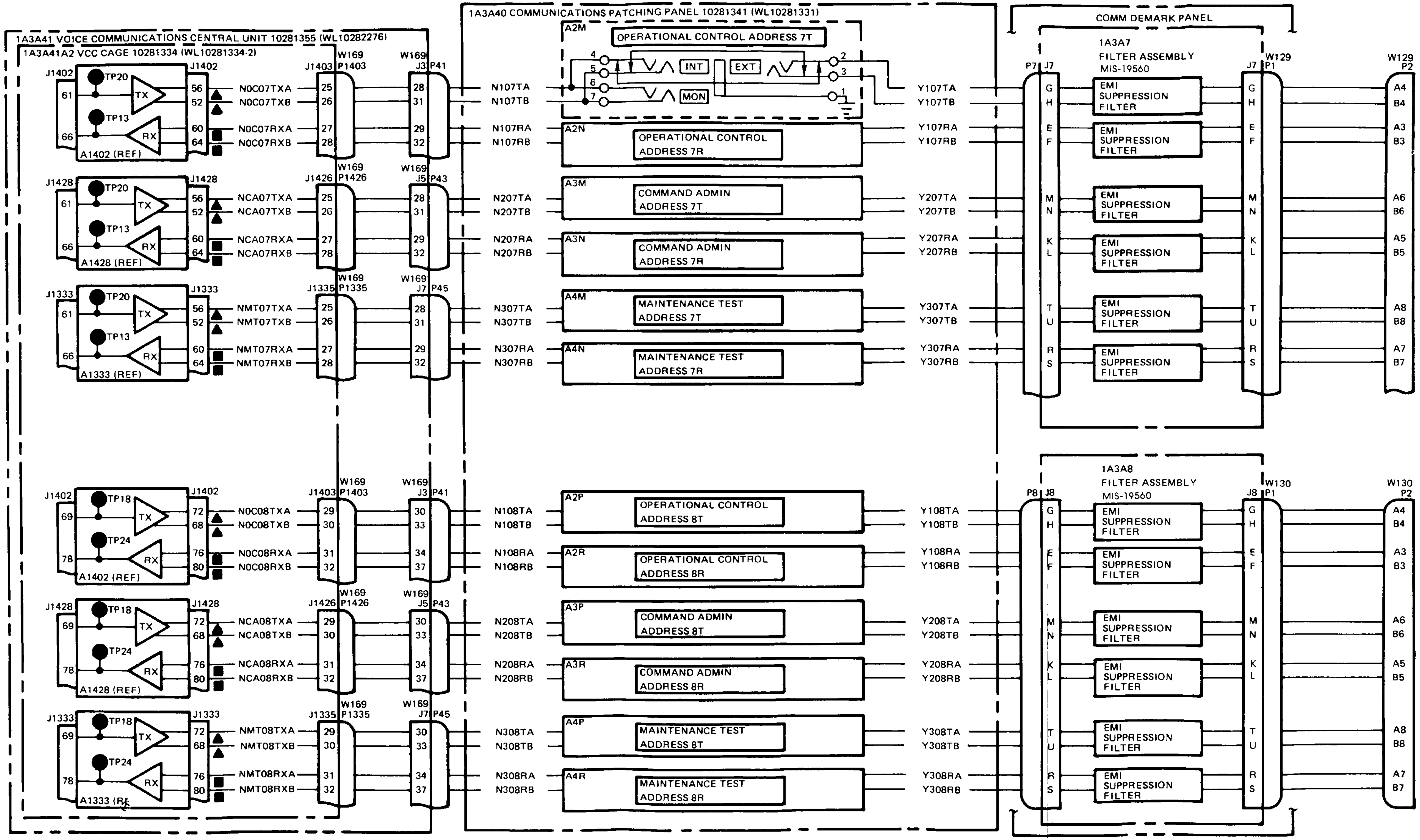

1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
A2E
OPERATIONAL CONTROL ADDRESS 3T
INT
EXT
MON
A2F
OPERATIONAL CONTROL ADDRESS 3R
A3E
COMMAND ADMIN ADDRESS 3T
A3F
COMMAND ADMIN ADDRESS 3R
A4E
MAINTENANCE TEST ADDRESS 3T
A4F
MAINTENANCE TEST ADDRESS 3R
A2G
OPERATIONAL CONTROL ADDRESS 4T
A2H
OPERATIONAL CONTROL ADDRESS 4R
A3G
COMMAND ADMIN ADDRESS 4T
A3H
COMMAND ADMIN ADDRESS 4R
A4G
MAINTENANCE TEST ADDRESS 4T
A4H
MAINTENANCE TEST ADDRESS 4R
J1401
TP20
TP13
TX
RX
A1401 (REF)
J1429
A1429 (REF)
J1332
A1332 (REF)
TP18
TP24
N0C03TXA
N0C03TXB
N0C03RXA
N0C03RXB
NCA03TXA
NCA03TXB
NCA03RXA
NCA03RXB
NMT03TXA
NMT03TXB
NMT03RXA
NMT03RXB
N0C04TXA
N0C04TXB
N0C04RXA
N0C04RXB
NCA04TXA
NCA04TXB
NCA04RXA
NCA04RXB
NMT04TXA
NMT04TXB
NMT04RXA
NMT04RXB
J1403
W169 P1403
J1426
W169 P1426
J1335
W169 P1335
W169 J3 P41
W169 J5 P43
W169 J7 P45
N103TA
N103TB
N103RA
N103RB
N203TA
N203TB
N203RA
N203RB
N303TA
N303TB
N303RA
N303RB
N104TA
N104TB
N104RA
N104RB
N204TA
N204TB
N204RA
N204RB
N304TA
N304TB
N304RA
N304RB
Y103TA
Y103TB
Y103RA
Y103RB
Y203TA
Y203TB
Y203RA
Y203RB
Y303TA
Y303TB
Y303RA
Y303RB
Y104TA
Y104TB
Y104RA
Y104RB
Y204TA
Y204TB
Y204RA
Y204RB
Y304TA
Y304TB
Y304RA
Y304RB
COMM DEMARK PANEL
1A3A3
FILTER ASSEMBLY
MIS-19560
1A3A4
FILTER ASSEMBLY
MIS-19560
P3 J3
P4 J4
J4 P1
W125 P1
W126 P1
W125 P2
W126 P2
EMI SUPPRESSION FILTER
G
H
E
F
M
N
K
L
T
U
R
S
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

Change 1

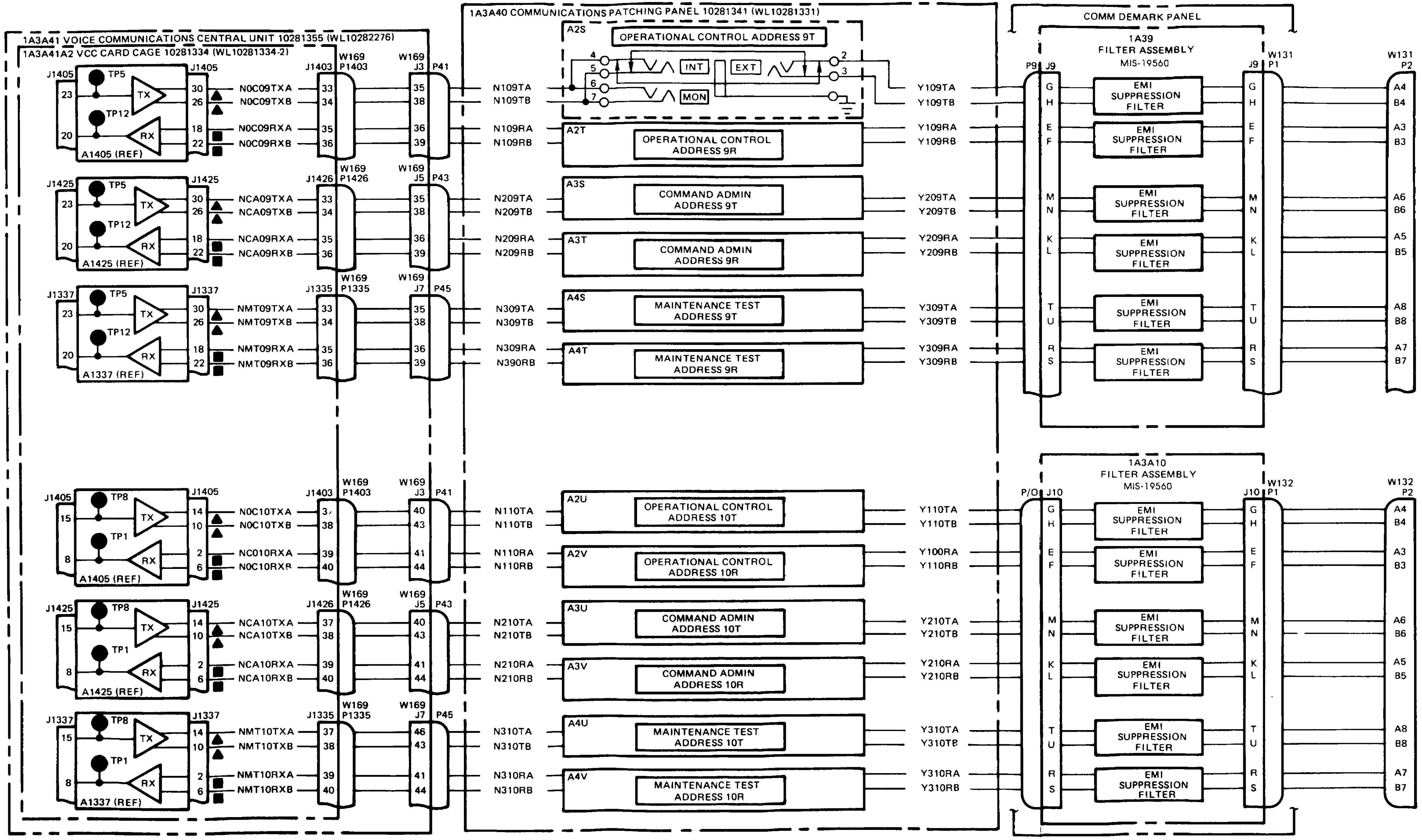
FO-33. External Subscriber Patch Interface Diagram (Sheet 2 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
J1402
TP5
TP12
TX
RX
A1402 (REF)
J1428
A1428 (REF)
J1333
A1333 (REF)
TP8
TP1
N0C05TXA
N0C05TXB
N0C05RXA
N0C05RXB
NCA05TXA
NCA05TXB
NCA05RXA
NCA05RXB
NMT05TXA
NMT05TXB
NMT05RXA
NMT05RXB
N0C06TXA
N0C06TXB
N0C06RXA
N0C06RXB
NCA06TXA
NCA06TXB
NCA06RXA
NCA06RXB
NMT06TXA
NMT06TXB
NMT06RXA
NMT06RXB
W169
J1403
P1403
J1426
P1426
J1335
P1335
J3
P41
J5
P43
J7
P45
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
A2I
OPERATIONAL CONTROL ADDRESS 5T
INT
EXT
MON
A2J
OPERATIONAL CONTROL ADDRESS 5R
A3I
COMMAND ADMIN ADDRESS 5T
A3J
COMMAND ADMIN ADDRESS 5R
A4I
MAINTENANCE TEST ADDRESS 5T
A4J
MAINTENANCE TEST ADDRESS 5R
A2K
OPERATIONAL CONTROL ADDRESS 6T
A2L
OPERATIONAL CONTROL ADDRESS 6R
A3K
COMMAND ADMIN ADDRESS 6T
A3L
COMMAND ADMIN ADDRESS 6R
A4K
MAINTENANCE TEST ADDRESS 6T
A4L
MAINTENANCE TEST ADDRESS 6R
N105TA
N105TB
N105RA
N105RB
N205TA
N205TB
N205RA
N205RB
N305TA
N305TB
N305RA
N305RB
N106TA
N106TB
N106RA
N106RB
N206TA
N206TB
N206RA
N206RB
N306TA
N306TB
N306RA
N306RB
Y105TA
Y105TB
Y105RA
Y105RB
Y205TA
Y205TB
Y205RA
Y205RB
Y305TA
Y305TB
Y305RA
Y305RB
Y106TA
Y106TB
Y106RA
Y106RB
Y206TA
Y206TB
Y206RA
Y206RB
Y306TA
Y306TB
Y306RA
Y306RB
COMM DEMARK PANEL
1A3A5 FILTER ASSEMBLY MIS-19560
1A3A6 FILTER ASSEMBLY MIS-19560
P5
J5
P6
J6
EMI SUPPRESSION FILTER
W127
P1
P2
W128
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

Change 1
FO-33. External Subscriber Patch Interface Diagram (Sheet 3 of 17)

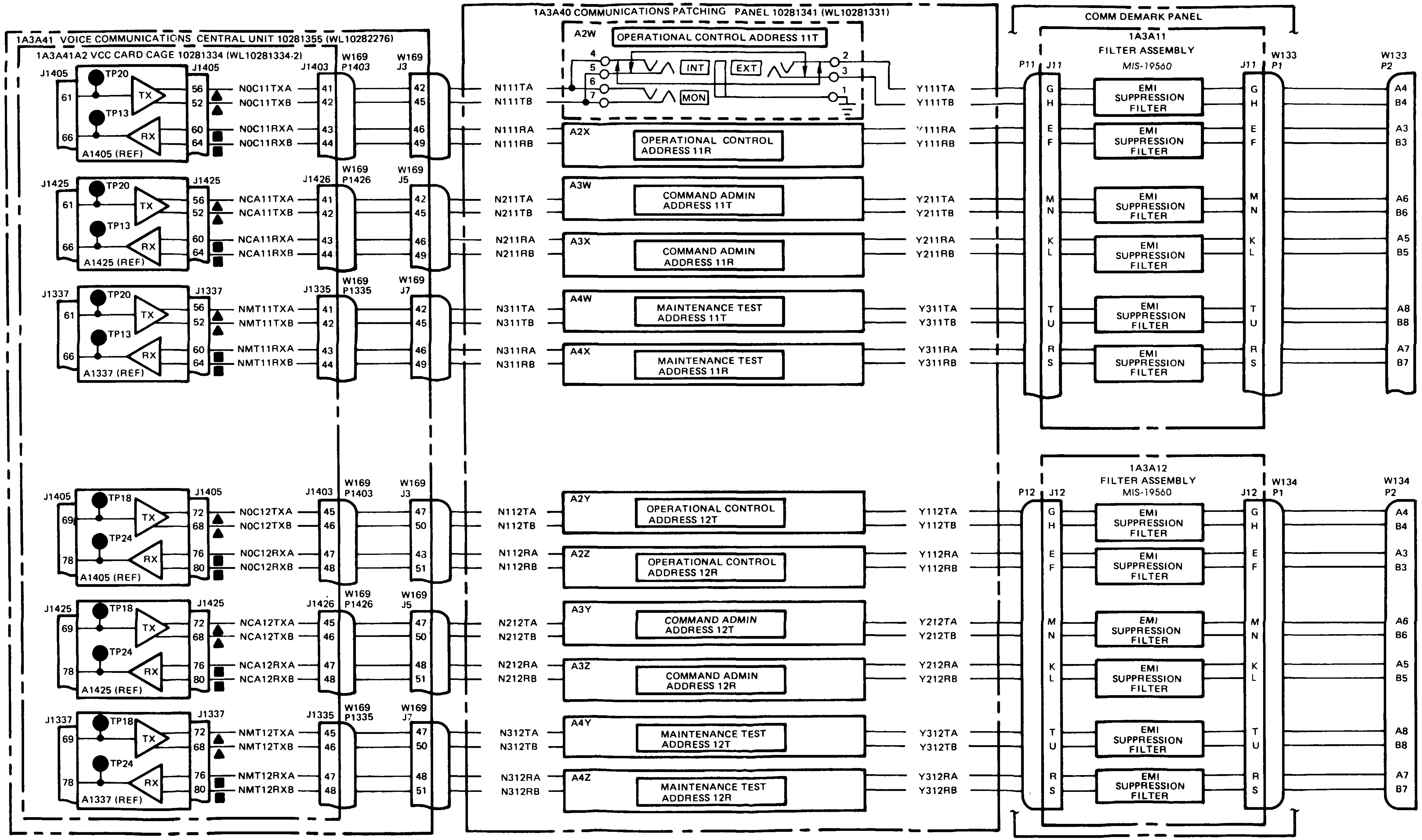

1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CAGE 10281334 (WL10281334-2)
J1402
TP20
TP13
TX
RX
61
66
56
52
60
64
A1402 (REF)
N0C07TXA
N0C07TXB
N0C07RXA
N0C07RXB
J1428
A1428 (REF)
NCA07TXA
NCA07TXB
NCA07RXA
NCA07RXB
J1333
A1333 (REF)
NMT07TXA
NMT07TXB
NMT07RXA
NMT07RXB
W169
J1403
P1403
J1426
P1426
J1335
P1335
25
26
27
28
J3
P41
J5
P43
J7
P45
28
31
29
32
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
A2M
OPERATIONAL CONTROL ADDRESS 7T
INT
EXT
MON
N107TA
N107TB
N107RA
N107RB
A2N
OPERATIONAL CONTROL ADDRESS 7R
N207TA
N207TB
N207RA
N207RB
A3M
COMMAND ADMIN ADDRESS 7T
A3N
COMMAND ADMIN ADDRESS 7R
N307TA
N307TB
N307RA
N307RB
A4M
MAINTENANCE TEST ADDRESS 7T
A4N
MAINTENANCE TEST ADDRESS 7R
Y107TA
Y107TB
Y107RA
Y107RB
Y207TA
Y207TB
Y207RA
Y207RB
Y307TA
Y307TB
Y307RA
Y307RB
COMM DEMARK PANEL
1A3A7
FILTER ASSEMBLY
MIS-19560
P7
J7
G
H
E
F
M
N
K
L
T
U
R
S
EMI SUPPRESSION FILTER
W129
P1
P2
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7
TP18
TP24
69
78
72
68
76
80
N0C08TXA
N0C08TXB
N0C08RXA
N0C08RXB
NCA08TXA
NCA08TXB
NCA08RXA
NCA08RXB
NMT08TXA
NMT08TXB
NMT08RXA
NMT08RXB
29
30
31
32
30
33
34
37
N108TA
N108TB
N108RA
N108RB
A2P
OPERATIONAL CONTROL ADDRESS 8T
A2R
OPERATIONAL CONTROL ADDRESS 8R
N208TA
N208TB
N208RA
N208RB
A3P
COMMAND ADMIN ADDRESS 8T
A3R
COMMAND ADMIN ADDRESS 8R
N308TA
N308TB
N308RA
N308RB
A4P
MAINTENANCE TEST ADDRESS 8T
A4R
MAINTENANCE TEST ADDRESS 8R
Y108TA
Y108TB
Y108RA
Y108RB
Y208TA
Y208TB
Y208RA
Y208RB
Y308TA
Y308TB
Y308RA
Y308RB
1A3A8
FILTER ASSEMBLY
MIS-19560
P8
J8
W130

FO-33. External Subscriber Patch Interface Diagram (Sheet 4 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
COMM DEMARK PANEL
1A39
FILTER ASSEMBLY
MIS-19560
1A3A10
FILTER ASSEMBLY
MIS-19560
A1405 (REF)
A1425 (REF)
A1337 (REF)
J1405
J1425
J1337
J1403
J1426
J1335
W169
P1403
P1426
P1335
J3
J5
J7
P41
P43
P45
TP5
TP12
TP8
TP1
TX
RX
N0C09TXA
N0C09TXB
N0C09RXA
N0C09RXB
NCA09TXA
NCA09TXB
NCA09RXA
NCA09RXB
NMT09TXA
NMT09TXB
NMT09RXA
NMT09RXB
N0C10TXA
N0C10TXB
NC010RXA
N0C10RXB
NCA10TXA
NCA10TXB
NCA10RXA
NCA10RXB
NMT10TXA
NMT10TXB
NMT10RXA
NMT10RXB
N109TA
N109TB
N109RA
N109RB
N209TA
N209TB
N209RA
N209RB
N309TA
N309TB
N309RA
N390RB
N110TA
N110TB
N110RA
N110RB
N210TA
N210TB
N210RA
N210RB
N310TA
N310TB
N310RA
N310RB
A2S
OPERATIONAL CONTROL ADDRESS 9T
INT
EXT
MON
A2T
OPERATIONAL CONTROL ADDRESS 9R
A3S
COMMAND ADMIN ADDRESS 9T
A3T
COMMAND ADMIN ADDRESS 9R
A4S
MAINTENANCE TEST ADDRESS 9T
A4T
MAINTENANCE TEST ADDRESS 9R
A2U
OPERATIONAL CONTROL ADDRESS 10T
A2V
OPERATIONAL CONTROL ADDRESS 10R
A3U
COMMAND ADMIN ADDRESS 10T
A3V
COMMAND ADMIN ADDRESS 10R
A4U
MAINTENANCE TEST ADDRESS 10T
A4V
MAINTENANCE TEST ADDRESS 10R
Y109TA
Y109TB
Y109RA
Y109RB
Y209TA
Y209TB
Y209RA
Y209RB
Y309TA
Y309TB
Y309RA
Y309RB
Y110TA
Y110TB
Y100RA
Y110RB
Y210TA
Y210TB
Y210RA
Y210RB
Y310TA
Y310TB
Y310RA
Y310RB
P9
J9
P/O
J10
P1
W131
P2
W132
EMI SUPPRESSION FILTER
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

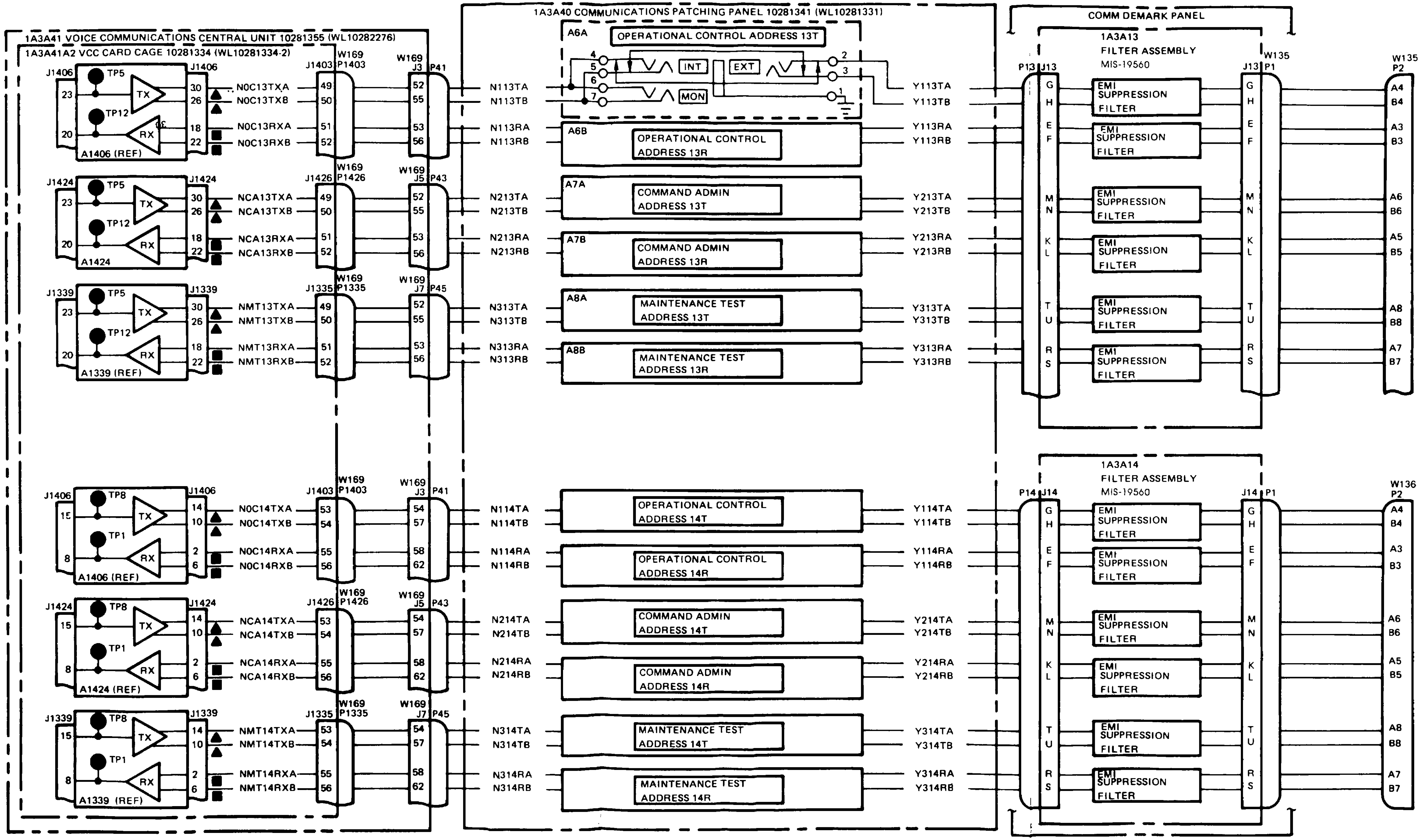
Change 1

FO-33. External Subscriber Patch Interface Diagram (Sheet 5 of 17)

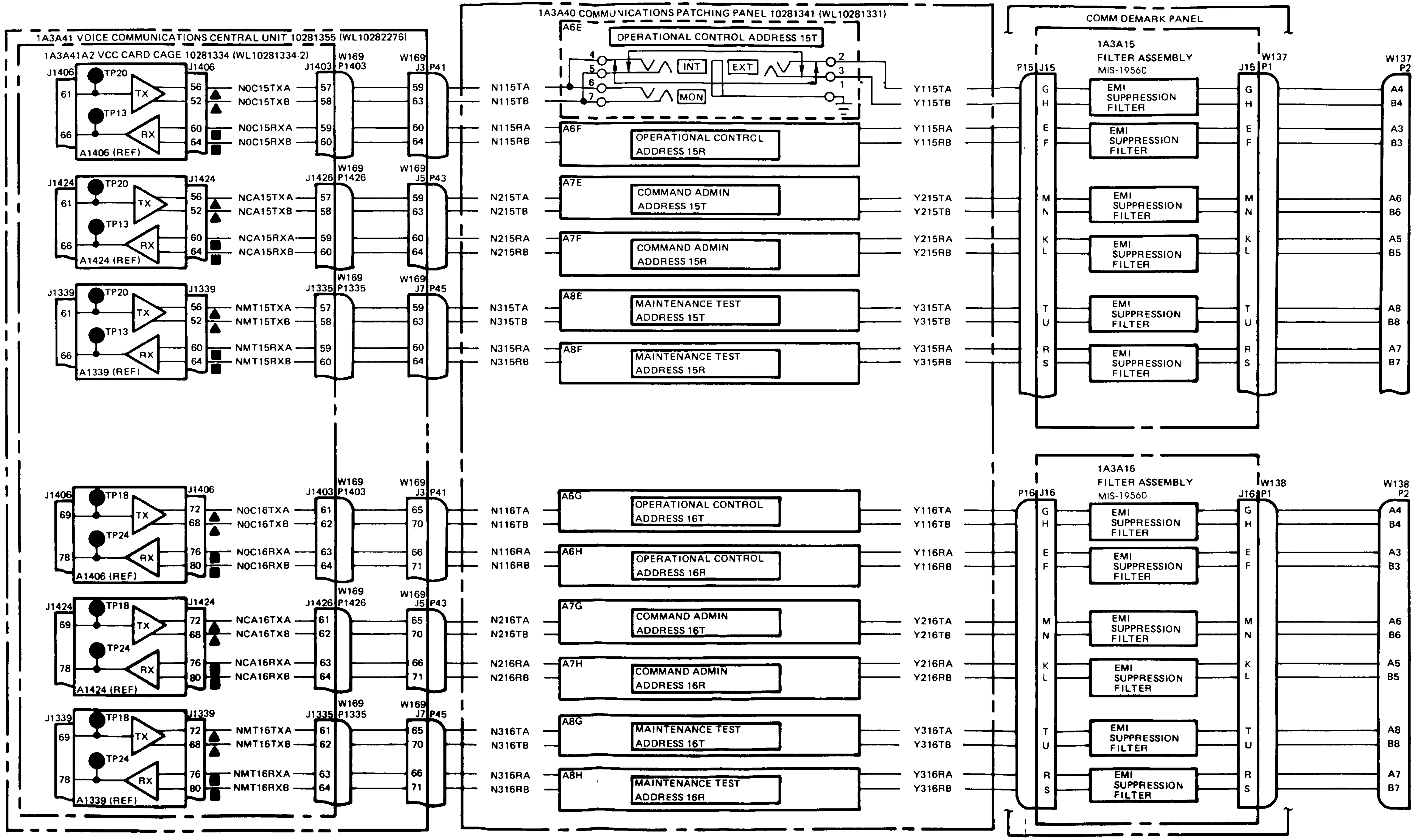

1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
J1405
TP20
TP13
TX
RX
A1405 (REF)
J1425
A1425 (REF)
J1337
A1337 (REF)
TP18
TP24
N0C11TXA
N0C11TXB
N0C11RXA
N0C11RXB
NCA11TXA
NCA11TXB
NCA11RXA
NCA11RXB
NMT11TXA
NMT11TXB
NMT11RXA
NMT11RXB
N0C12TXA
N0C12TXB
N0C12RXA
N0C12RXB
NCA12TXA
NCA12TXB
NCA12RXA
NCA12RXB
NMT12TXA
NMT12TXB
NMT12RXA
NMT12RXB
J1403
J1426
J1335
W169 P1403
W169 P1426
W169 P1335
W169 J3
W169 J5
W169 J7
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
A2W
OPERATIONAL CONTROL ADDRESS 11T
INT
EXT
MON
A2X
OPERATIONAL CONTROL ADDRESS 11R
A3W
COMMAND ADMIN ADDRESS 11T
A3X
COMMAND ADMIN ADDRESS 11R
A4W
MAINTENANCE TEST ADDRESS 11T
A4X
MAINTENANCE TEST ADDRESS 11R
A2Y
OPERATIONAL CONTROL ADDRESS 12T
A2Z
OPERATIONAL CONTROL ADDRESS 12R
A3Y
COMMAND ADMIN ADDRESS 12T
A3Z
COMMAND ADMIN ADDRESS 12R
A4Y
MAINTENANCE TEST ADDRESS 12T
A4Z
MAINTENANCE TEST ADDRESS 12R
N111TA
N111TB
N111RA
N111RB
N211TA
N211TB
N211RA
N211RB
N311TA
N311TB
N311RA
N311RB
N112TA
N112TB
N112RA
N112RB
N212TA
N212TB
N212RA
N212RB
N312TA
N312TB
N312RA
N312RB
Y111TA
Y111TB
Y111RA
Y111RB
Y211TA
Y211TB
Y211RA
Y211RB
Y311TA
Y311TB
Y311RA
Y311RB
Y112TA
Y112TB
Y112RA
Y112RB
Y212TA
Y212TB
Y212RA
Y212RB
Y312TA
Y312TB
Y312RA
Y312RB
COMM DEMARK PANEL
1A3A11 FILTER ASSEMBLY MIS-19560
1A3A12 FILTER ASSEMBLY MIS-19560
P11
J11
P12
J12
EMI SUPPRESSION FILTER
W133 P1
W133 P2
W134 P1
W134 P2
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

Change 1

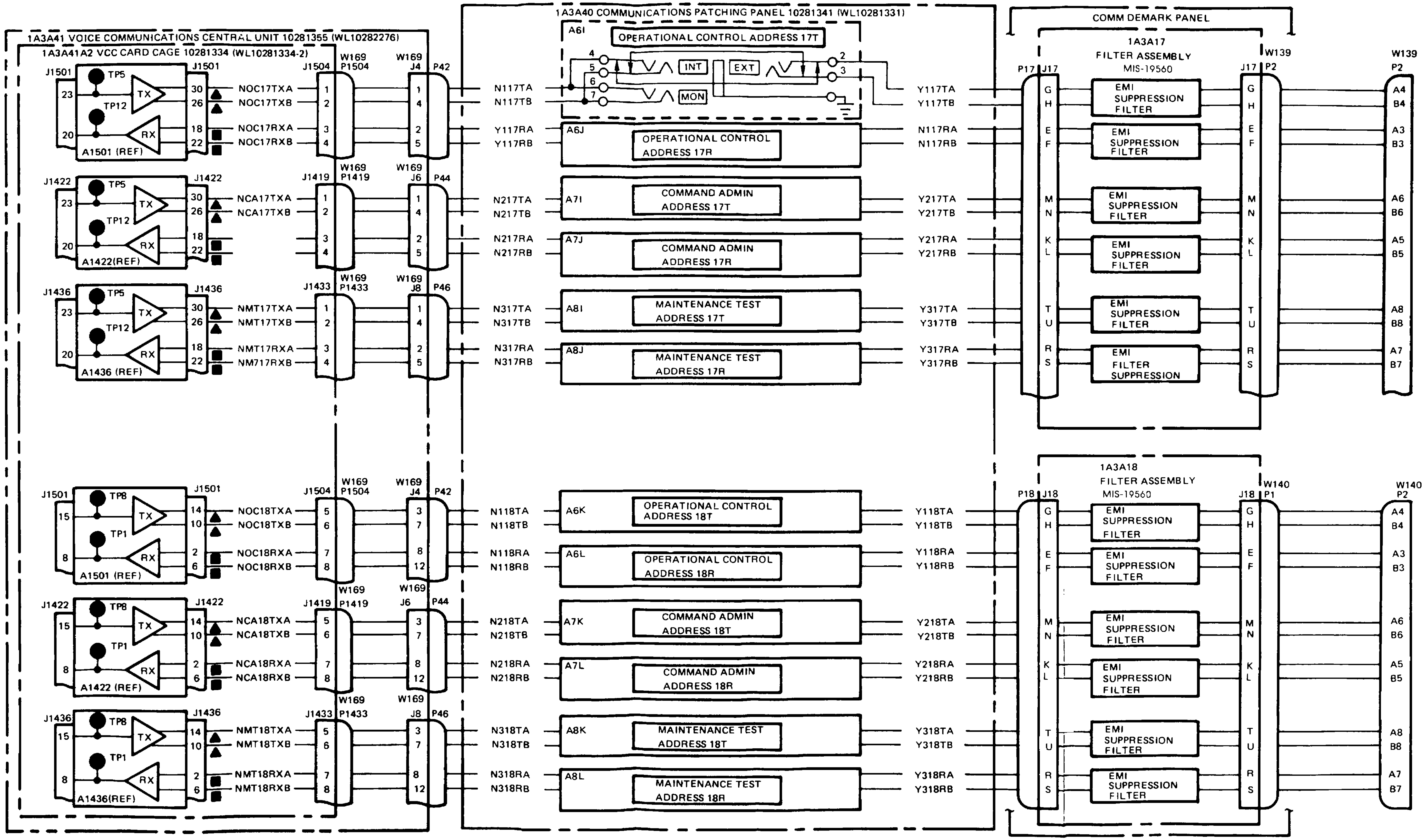
FO-33. External Subscriber Patch Interface Diagram (Sheet 6 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
J1406
TP5
TP12
TX
RX
A1406 (REF)
J1424
A1424
J1339
A1339 (REF)
A1424 (REF)
TP8
TP1
NOC13TXA
NOC13TXB
NOC13RXA
NOC13RXB
NCA13TXA
NCA13TXB
NCA13RXA
NCA13RXB
NMT13TXA
NMT13TXB
NMT13RXA
NMT13RXB
NOC14TXA
NOC14TXB
NOC14RXA
NOC14RXB
NCA14TXA
NCA14TXB
NCA14RXA
NCA14RXB
NMT14TXA
NMT14TXB
NMT14RXA
NMT14RXB
W169
J1403
P1403
J1426
P1426
J1335
P1335
J3
P41
J5
P43
J7
P45
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
A6A
OPERATIONAL CONTROL ADDRESS 13T
INT
EXT
MON
A6B
OPERATIONAL CONTROL ADDRESS 13R
A7A
COMMAND ADMIN ADDRESS 13T
A7B
COMMAND ADMIN ADDRESS 13R
A8A
MAINTENANCE TEST ADDRESS 13T
A8B
MAINTENANCE TEST ADDRESS 13R
OPERATIONAL CONTROL ADDRESS 14T
OPERATIONAL CONTROL ADDRESS 14R
COMMAND ADMIN ADDRESS 14T
COMMAND ADMIN ADDRESS 14R
MAINTENANCE TEST ADDRESS 14T
MAINTENANCE TEST ADDRESS 14R
N113TA
N113TB
N113RA
N113RB
N213TA
N213TB
N213RA
N213RB
N313TA
N313TB
N313RA
N313RB
N114TA
N114TB
N114RA
N114RB
N214TA
N214TB
N214RA
N214RB
N314TA
N314TB
N314RA
N314RB
Y113TA
Y113TB
Y113RA
Y113RB
Y213TA
Y213TB
Y213RA
Y213RB
Y313TA
Y313TB
Y313RA
Y313RB
Y114TA
Y114TB
Y114RA
Y114RB
Y214TA
Y214TB
Y214RA
Y214RB
Y314TA
Y314TB
Y314RA
Y314RB
COMM DEMARK PANEL
1A3A13
FILTER ASSEMBLY
MIS-19560
1A3A14
FILTER ASSEMBLY
MIS-19560
P13
J13
P14
J14
P1
EMI SUPPRESSION FILTER
W135
P2
W136
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

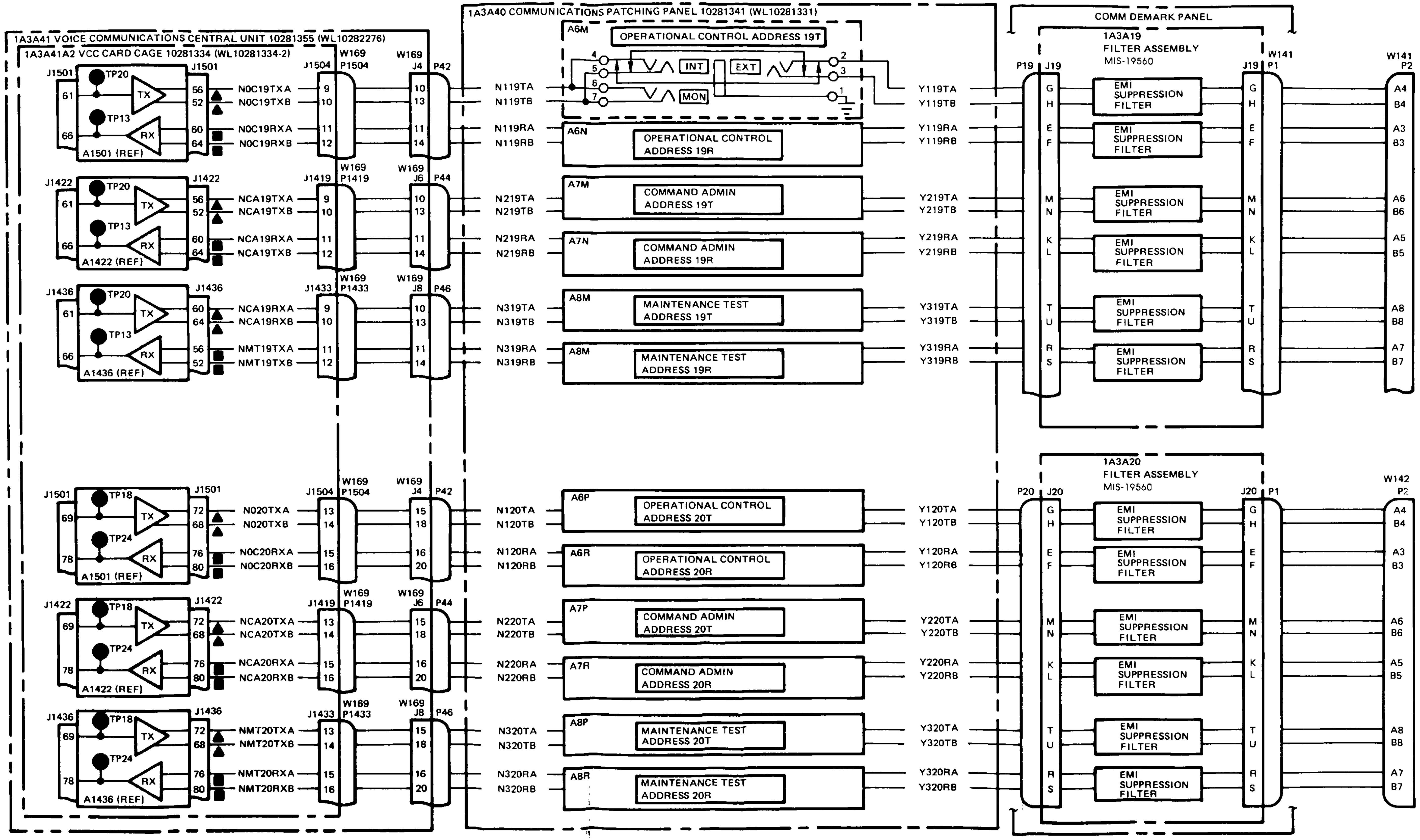
Change 1 FO-33. External Subscriber Patch Interface Diagram (Sheet 7 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
J1406
TP20
TX
TP13
RX
A1406 (REF)
J1424
A1424 (REF)
J1339
A1339 (REF)
TP18
TP24
61
66
69
78
56
52
60
64
72
68
76
80
N0C15TXA
N0C15TXB
N0C15RXA
N0C15RXB
NCA15TXA
NCA15TXB
NCA15RXA
NCA15RXB
NMT15TXA
NMT15TXB
NMT15RXA
NMT15RXB
N0C16TXA
N0C16TXB
N0C16RXA
N0C16RXB
NCA16TXA
NCA16TXB
NCA16RXA
NCA16RXB
NMT16TXA
NMT16TXB
NMT16RXA
NMT16RXB
W169
J1403
P1403
J1426
P1426
J1335
P1335
57
58
59
60
61
62
63
64
J3
P41
J5
P43
J7
P45
65
70
66
71
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
A6E
OPERATIONAL CONTROL ADDRESS 15T
4
5
6
7
2
3
1
INT
EXT
MON
N115TA
N115TB
N115RA
N115RB
A6F
OPERATIONAL CONTROL ADDRESS 15R
N215TA
N215TB
A7E
COMMAND ADMIN ADDRESS 15T
N215RA
N215RB
A7F
COMMAND ADMIN ADDRESS 15R
N315TA
N315TB
A8E
MAINTENANCE TEST ADDRESS 15T
N315RA
N315RB
A8F
MAINTENANCE TEST ADDRESS 15R
N116TA
N116TB
A6G
OPERATIONAL CONTROL ADDRESS 16T
N116RA
N116RB
A6H
OPERATIONAL CONTROL ADDRESS 16R
N216TA
N216TB
A7G
COMMAND ADMIN ADDRESS 16T
N216RA
N216RB
A7H
COMMAND ADMIN ADDRESS 16R
N316TA
N316TB
A8G
MAINTENANCE TEST ADDRESS 16T
N316RA
N316RB
A8H
MAINTENANCE TEST ADDRESS 16R
Y115TA
Y115TB
Y115RA
Y115RB
Y215TA
Y215TB
Y215RA
Y215RB
Y315TA
Y315TB
Y315RA
Y315RB
Y116TA
Y116TB
Y116RA
Y116RB
Y216TA
Y216TB
Y216RA
Y216RB
Y316TA
Y316TB
Y316RA
Y316RB
COMM DEMARK PANEL
1A3A15
FILTER ASSEMBLY
MIS-19560
P15
J15
W137
P1
1A3A16
FILTER ASSEMBLY
MIS-19560
P16
J16
W138
P1
G
H
E
F
M
N
K
L
T
U
R
S
EMI SUPPRESSION FILTER
W137
P2
W138
P2
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

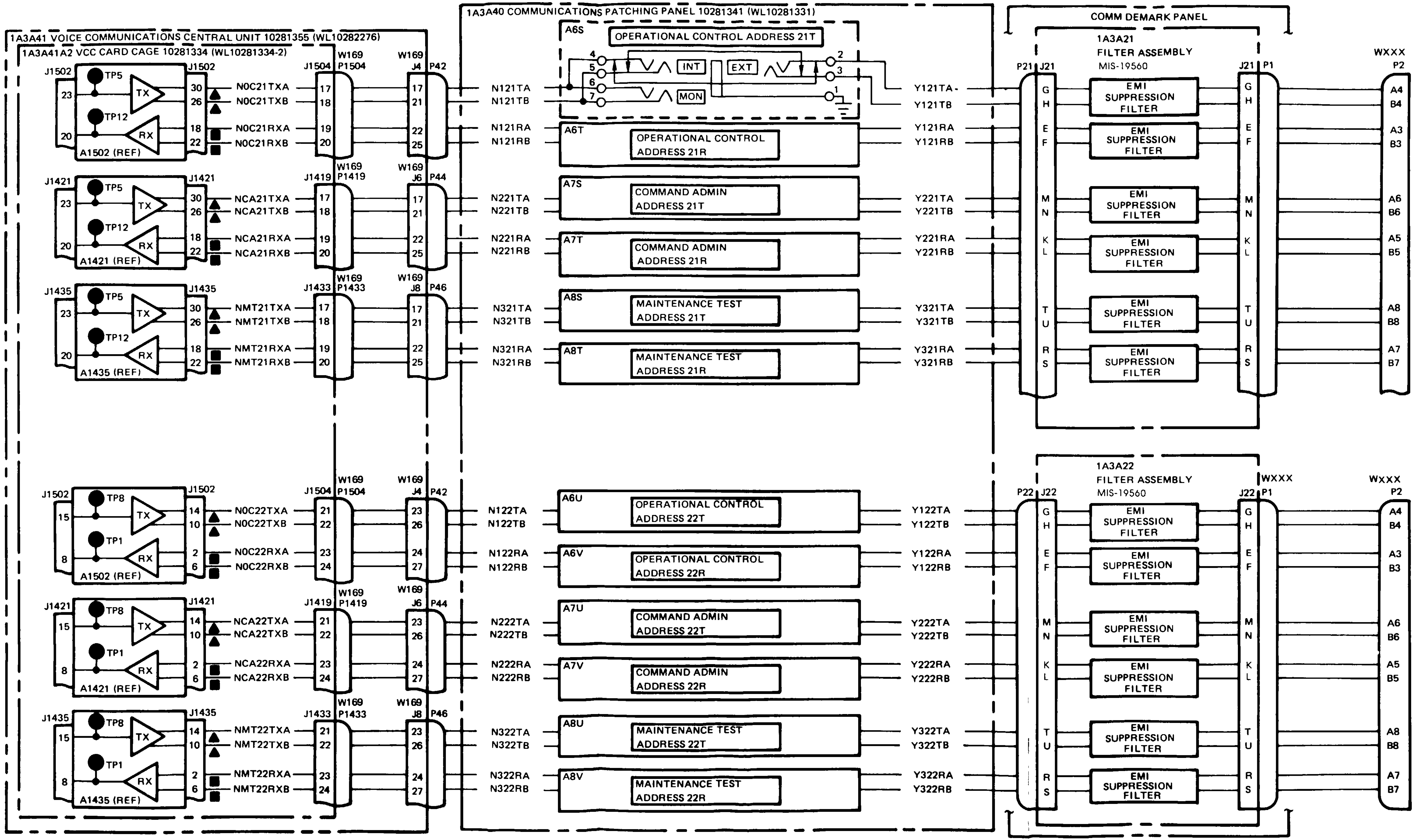
Change 1 FO-33. External Subscriber Patch Interface Diagram (Sheet 8 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
COMM DEMARK PANEL
1A3A17 FILTER ASSEMBLY MIS-19560
1A3A18 FILTER ASSEMBLY MIS-19560
A1501 (REF)
A1422(REF)
A1436 (REF)
A1422 (REF)
A1436(REF)
J1501
J1422
J1436
J1504
J1419
J1433
W169 P1504
W169 P1419
W169 P1433
W169 J4
W169 J6
W169 J8
P42
P44
P46
TP5
TP12
TP8
TP1
TX
RX
NOC17TXA
NOC17TXB
NOC17RXA
NOC17RXB
NCA17TXA
NCA17TXB
NMT17TXA
NMT17TXB
NMT17RXA
NM717RXB
NOC18TXA
NOC18TXB
NOC18RXA
NOC18RXB
NCA18TXA
NCA18TXB
NCA18RXA
NCA18RXB
NMT18TXA
NMT18TXB
NMT18RXA
NMT18RXB
N117TA
N117TB
Y117RA
Y117RB
N217TA
N217TB
N217RA
N217RB
N317TA
N317TB
N317RA
N317RB
N118TA
N118TB
N118RA
N118RB
N218TA
N218TB
N218RA
N218RB
N318TA
N318TB
N318RA
N318RB
A6I
OPERATIONAL CONTROL ADDRESS 17T
INT
EXT
MON
A6J
OPERATIONAL CONTROL ADDRESS 17R
A7I
COMMAND ADMIN ADDRESS 17T
A7J
COMMAND ADMIN ADDRESS 17R
A8I
MAINTENANCE TEST ADDRESS 17T
A8J
MAINTENANCE TEST ADDRESS 17R
A6K
OPERATIONAL CONTROL ADDRESS 18T
A6L
OPERATIONAL CONTROL ADDRESS 18R
A7K
COMMAND ADMIN ADDRESS 18T
A7L
COMMAND ADMIN ADDRESS 18R
A8K
MAINTENANCE TEST ADDRESS 18T
A8L
MAINTENANCE TEST ADDRESS 18R
Y117TA
Y117TB
N117RA
N117RB
Y217TA
Y217TB
Y217RA
Y217RB
Y317TA
Y317TB
Y317RA
Y317RB
Y118TA
Y118TB
Y118RA
Y118RB
Y218TA
Y218TB
Y218RA
Y218RB
Y318TA
Y318TB
Y318RA
Y318RB
P17
J17
P18
J18
W139 P2
W140 P1
W139 P2
W140 P2
EMI SUPPRESSION FILTER
EMI FILTER SUPPRESSION
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

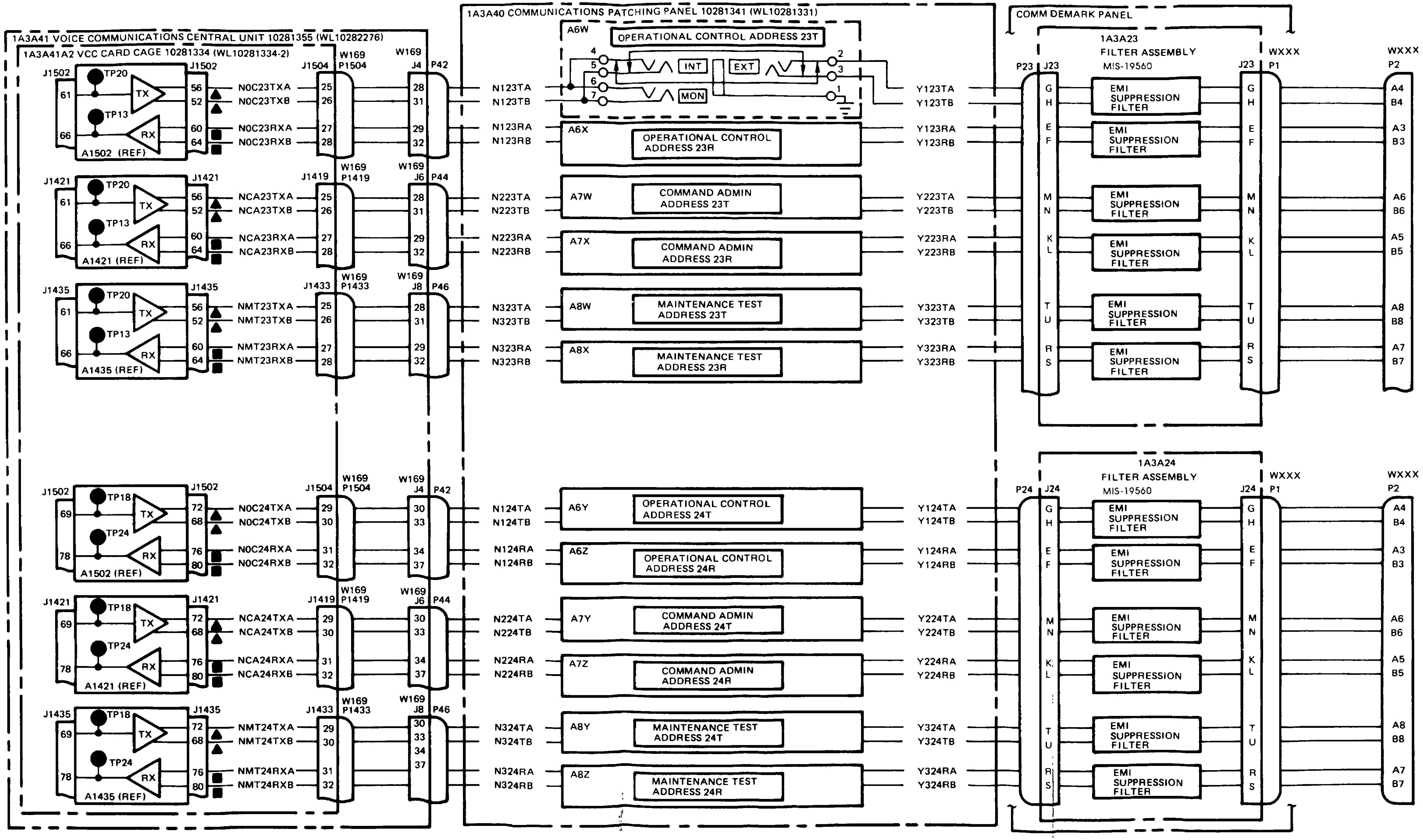
Change 1 FO-33. External Subscriber Patch Interface Diagram (Sheet 9 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
COMM DEMARK PANEL
1A3A19
FILTER ASSEMBLY
MIS-19560
1A3A20
FILTER ASSEMBLY
MIS-19560
J1501
J1422
J1436
TP20
TP13
TP18
TP24
TX
RX
A1501 (REF)
A1422 (REF)
A1436 (REF)
N0C19TXA
N0C19TXB
N0C19RXA
N0C19RXB
NCA19TXA
NCA19TXB
NCA19RXA
NCA19TXB
NCA19RXA
NCA19RXB
NMT19TXA
NMT19TXB
N020TXA
N020TXB
N0C20RXA
N0C20RXB
NCA20TXA
NCA20TXB
NCA20RXA
NCA20RXB
NMT20TXA
NMT20TXB
NMT20RXA
NMT20RXB
J1504
J1419
J1433
W169
P1504
P1419
P1433
J4
J6
J8
P42
P44
P46
A6M
OPERATIONAL CONTROL ADDRESS 19T
INT
EXT
MON
A6N
OPERATIONAL CONTROL ADDRESS 19R
A7M
COMMAND ADMIN ADDRESS 19T
A7N
COMMAND ADMIN ADDRESS 19R
A8M
MAINTENANCE TEST ADDRESS 19T
A8M
MAINTENANCE TEST ADDRESS 19R
A6P
OPERATIONAL CONTROL ADDRESS 20T
A6R
OPERATIONAL CONTROL ADDRESS 20R
A7P
COMMAND ADMIN ADDRESS 20T
A7R
COMMAND ADMIN ADDRESS 20R
A8P
MAINTENANCE TEST ADDRESS 20T
A8R
MAINTENANCE TEST ADDRESS 20R
N119TA
N119TB
N119RA
N119RB
N219TA
N219TB
N219RA
N219RB
N319TA
N319TB
N319RA
N319RB
N120TA
N120TB
N120RA
N120RB
N220TA
N220TB
N220RA
N220RB
N320TA
N320TB
N320RA
N320RB
Y119TA
Y119TB
Y119RA
Y119RB
Y219TA
Y219TB
Y219RA
Y219RB
Y319TA
Y319TB
Y319RA
Y319RB
Y120TA
Y120TB
Y120RA
Y120RB
Y220TA
Y220TB
Y220RA
Y220RB
Y320TA
Y320TB
Y320RA
Y320RB
P19
J19
P20
J20
P1
W141
W142
P2
EMI SUPPRESSION FILTER
G H E F M N K L T U R S
A4 B4 A3 B3 A6 B6 A5 B5 A8 B8 A7 B7

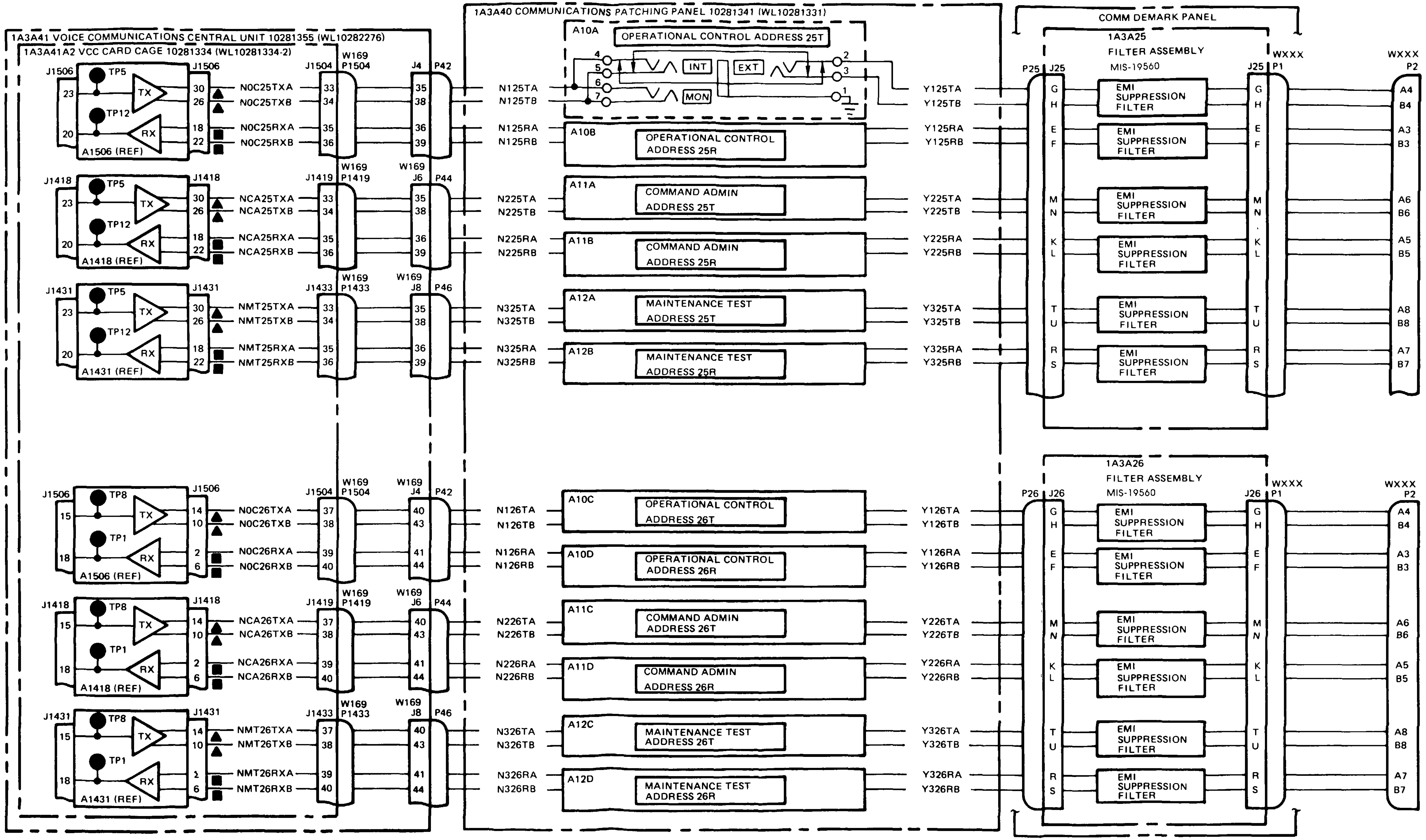
Change 1 FO-33. External Subscriber Patch Interface Diagram (Sheet 10 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
COMM DEMARK PANEL
1A3A21 FILTER ASSEMBLY MIS-19560
1A3A22 FILTER ASSEMBLY MIS-19560
WXXX
P2
J1502
J1421
J1435
TP5
TP12
TP8
TP1
TX
RX
A1502 (REF)
A1421 (REF)
A1435 (REF)
N0C21TXA
N0C21TXB
N0C21RXA
N0C21RXB
NCA21TXA
NCA21TXB
NCA21RXA
NCA21RXB
NMT21TXA
NMT21TXB
NMT21RXA
NMT21RXB
N0C22TXA
N0C22TXB
N0C22RXA
N0C22RXB
NCA22TXA
NCA22TXB
NCA22RXA
NCA22RXB
NMT22TXA
NMT22TXB
NMT22RXA
NMT22RXB
W169
J1504
P1504
J1419
P1419
J1433
P1433
J4
P42
J6
P44
J8
P46
N121TA
N121TB
N121RA
N121RB
N221TA
N221TB
N221RA
N221RB
N321TA
N321TB
N321RA
N321RB
N122TA
N122TB
N122RA
N122RB
N222TA
N222TB
N222RA
N222RB
N322TA
N322TB
N322RA
N322RB
A6S
OPERATIONAL CONTROL ADDRESS 21T
INT
EXT
MON
A6T
OPERATIONAL CONTROL ADDRESS 21R
A7S
COMMAND ADMIN ADDRESS 21T
A7T
COMMAND ADMIN ADDRESS 21R
A8S
MAINTENANCE TEST ADDRESS 21T
A8T
MAINTENANCE TEST ADDRESS 21R
A6U
OPERATIONAL CONTROL ADDRESS 22T
A6V
OPERATIONAL CONTROL ADDRESS 22R
A7U
COMMAND ADMIN ADDRESS 22T
A7V
COMMAND ADMIN ADDRESS 22R
A8U
MAINTENANCE TEST ADDRESS 22T
A8V
MAINTENANCE TEST ADDRESS 22R
Y121TA
Y121TB
Y121RA
Y121RB
Y221TA
Y221TB
Y221RA
Y221RB
Y321TA
Y321TB
Y321RA
Y321RB
Y122TA
Y122TB
Y122RA
Y122RB
Y222TA
Y222TB
Y222RA
Y222RB
Y322TA
Y322TB
Y322RA
Y322RB
P21
J21
P1
P22
J22
EMI SUPPRESSION FILTER
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

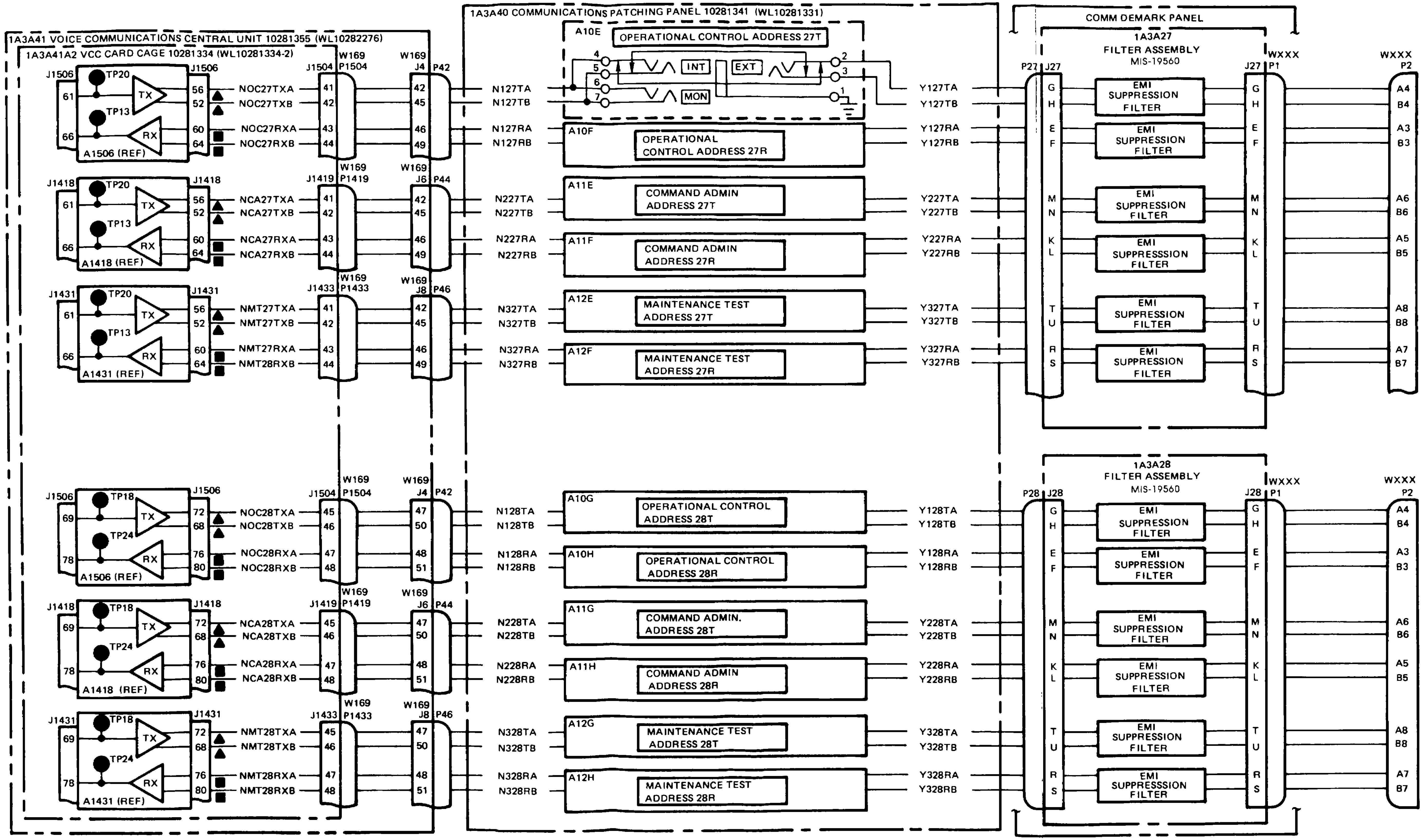
Change 1 FO-33. External Subscriber Patch Interface Diagram (Sheet 11 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
COMM DEMARK PANEL
1A3A23 FILTER ASSEMBLY MIS-19560
1A3A24 FILTER ASSEMBLY MIS-19560
A1502 (REF)
A1421 (REF)
A1435 (REF)
TP20
TP13
TP18
TP24
TX
RX
J1502
J1421
J1435
J1504
J1419
J1433
W169 P1504
W169 P1419
W169 P1433
W169 J4
W169 J6
W169 J8
P42
P44
P46
N0C23TXA
N0C23TXB
N0C23RXA
N0C23RXB
NCA23TXA
NCA23TXB
NCA23RXA
NCA23RXB
NMT23TXA
NMT23TXB
NMT23RXA
NMT23RXB
N0C24TXA
N0C24TXB
N0C24RXA
N0C24RXB
NCA24TXA
NCA24TXB
NCA24RXA
NCA24RXB
NMT24TXA
NMT24TXB
NMT24RXA
NMT24RXB
N123TA
N123TB
N123RA
N123RB
N223TA
N223TB
N223RA
N223RB
N323TA
N323TB
N323RA
N323RB
N124TA
N124TB
N124RA
N124RB
N224TA
N224TB
N224RA
N224RB
N324TA
N324TB
N324RA
N324RB
A6W
OPERATIONAL CONTROL ADDRESS 23T
INT
EXT
MON
A6X
OPERATIONAL CONTROL ADDRESS 23R
A7W
COMMAND ADMIN ADDRESS 23T
A7X
COMMAND ADMIN ADDRESS 23R
A8W
MAINTENANCE TEST ADDRESS 23T
A8X
MAINTENANCE TEST ADDRESS 23R
A6Y
OPERATIONAL CONTROL ADDRESS 24T
A6Z
OPERATIONAL CONTROL ADDRESS 24R
A7Y
COMMAND ADMIN ADDRESS 24T
A7Z
COMMAND ADMIN ADDRESS 24R
A8Y
MAINTENANCE TEST ADDRESS 24T
A8Z
MAINTENANCE TEST ADDRESS 24R
Y123TA
Y123TB
Y123RA
Y123RB
Y223TA
Y223TB
Y223RA
Y223RB
Y323TA
Y323TB
Y323RA
Y323RB
Y124TA
Y124TB
Y124RA
Y124RB
Y224TA
Y224TB
Y224RA
Y224RB
Y324TA
Y324TB
Y324RA
Y324RB
P23
J23
P24
J24
EMI SUPPRESSION FILTER
WXXX P1
WXXX P2
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

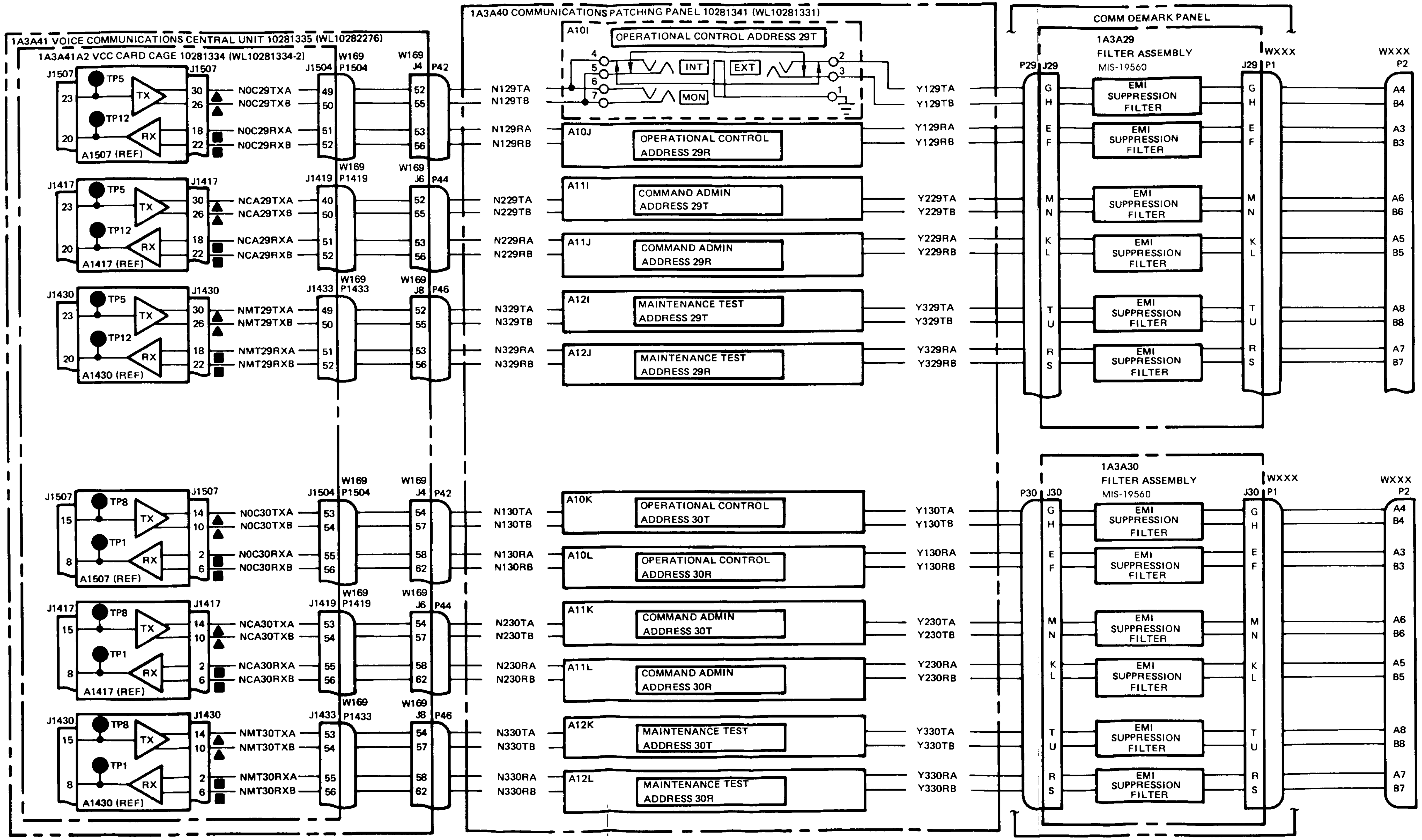
FO-33. External Subscriber Patch Interface Diagram (Sheet 12 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
COMM DEMARK PANEL
1A3A25
FILTER ASSEMBLY
MIS-19560
1A3A26
FILTER ASSEMBLY
MIS-19560
J1506
J1418
J1431
TP5
TP12
TP8
TP1
TX
RX
A1506 (REF)
A1418 (REF)
A1431 (REF)
J1504
J1419
J1433
W169
P1504
P1419
P1433
J4
J6
J8
P42
P44
P46
N0C25TXA
N0C25TXB
N0C25RXA
N0C25RXB
NCA25TXA
NCA25TXB
NCA25RXA
NCA25RXB
NMT25TXA
NMT25TXB
NMT25RXA
NMT25RXB
N0C26TXA
N0C26TXB
N0C26RXA
N0C26RXB
NCA26TXA
NCA26TXB
NCA26RXA
NCA26RXB
NMT26TXA
NMT26TXB
NMT26RXA
NMT26RXB
N125TA
N125TB
N125RA
N125RB
N225TA
N225TB
N225RA
N225RB
N325TA
N325TB
N325RA
N325RB
N126TA
N126TB
N126RA
N126RB
N226TA
N226TB
N226RA
N226RB
N326TA
N326TB
N326RA
N326RB
A10A
OPERATIONAL CONTROL ADDRESS 25T
INT
EXT
MON
A10B
OPERATIONAL CONTROL ADDRESS 25R
A11A
COMMAND ADMIN ADDRESS 25T
A11B
COMMAND ADMIN ADDRESS 25R
A12A
MAINTENANCE TEST ADDRESS 25T
A12B
MAINTENANCE TEST ADDRESS 25R
A10C
OPERATIONAL CONTROL ADDRESS 26T
A10D
OPERATIONAL CONTROL ADDRESS 26R
A11C
COMMAND ADMIN ADDRESS 26T
A11D
COMMAND ADMIN ADDRESS 26R
A12C
MAINTENANCE TEST ADDRESS 26T
A12D
MAINTENANCE TEST ADDRESS 26R
Y125TA
Y125TB
Y125RA
Y125RB
Y225TA
Y225TB
Y225RA
Y225RB
Y325TA
Y325TB
Y325RA
Y325RB
Y126TA
Y126TB
Y126RA
Y126RB
Y226TA
Y226TB
Y226RA
Y226RB
Y326TA
Y326TB
Y326RA
Y326RB
P25
J25
P26
J26
WXXX
P1
P2
EMI SUPPRESSION FILTER
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

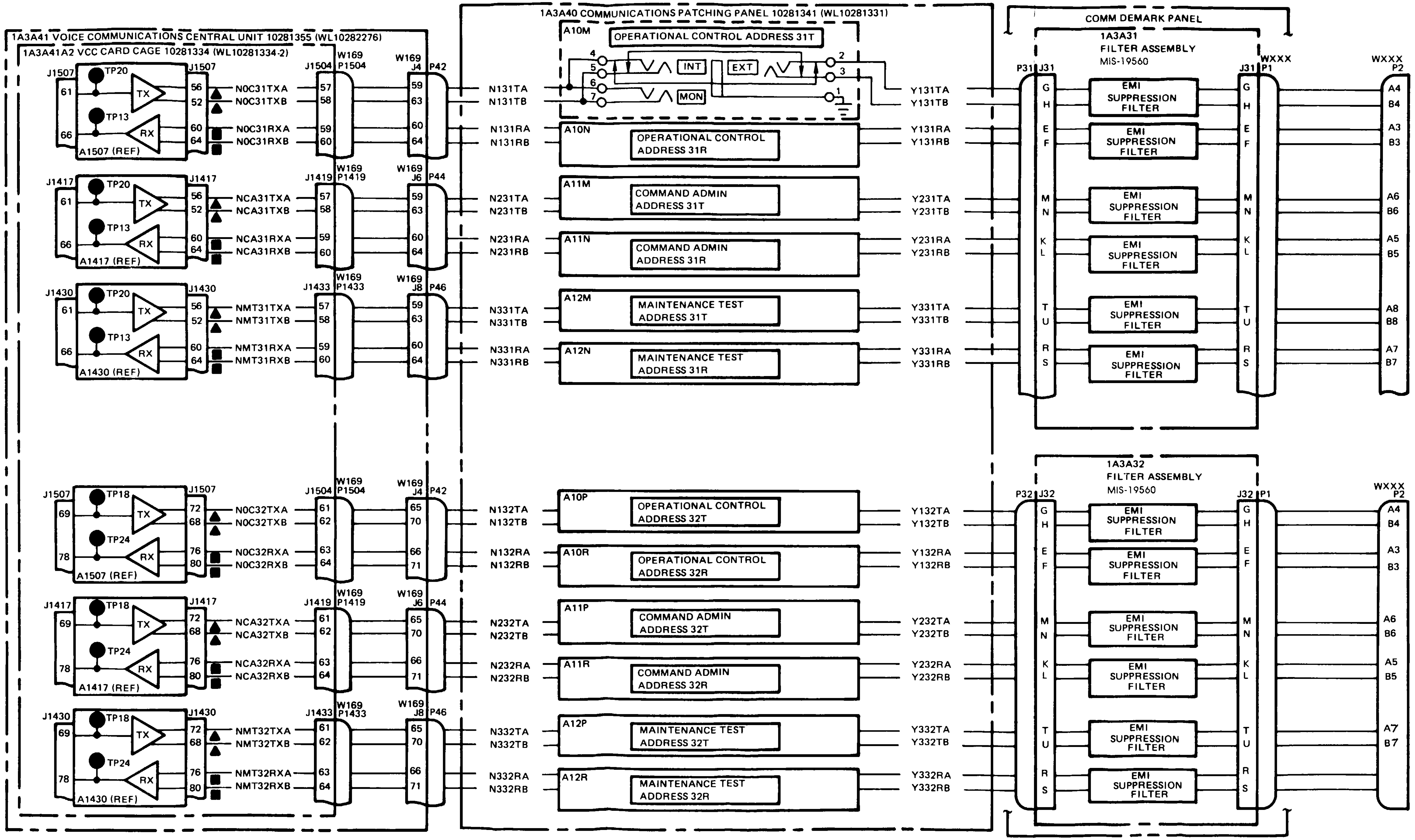
FO-33. External Subscriber Patch Interface Diagram (Sheet 13 of 17)


1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
COMM DEMARK PANEL
1A3A27
FILTER ASSEMBLY
MIS-19560
1A3A28
FILTER ASSEMBLY
MIS-19560
J1506
J1418
J1431
TP20
TP13
TP18
TP24
TX
RX
A1506 (REF)
A1418 (REF)
A1431 (REF)
W169
J1504
P1504
J1419
P1419
J1433
P1433
J4
P42
J6
P44
J8
P46
NOC27TXA
NOC27TXB
NOC27RXA
NOC27RXB
NCA27TXA
NCA27TXB
NCA27RXA
NCA27RXB
NMT27TXA
NMT27TXB
NMT27RXA
NMT28RXB
NOC28TXA
NOC28TXB
NOC28RXA
NOC28RXB
NCA28TXA
NCA28TXB
NCA28RXA
NCA28RXB
NMT28TXA
NMT28TXB
NMT28RXA
NMT28RXB
N127TA
N127TB
N127RA
N127RB
N227TA
N227TB
N227RA
N227RB
N327TA
N327TB
N327RA
N327RB
N128TA
N128TB
N128RA
N128RB
N228TA
N228TB
N228RA
N228RB
N328TA
N328TB
N328RA
N328RB
A10E
OPERATIONAL CONTROL ADDRESS 27T
INT
EXT
MON
A10F
OPERATIONAL CONTROL ADDRESS 27R
A11E
COMMAND ADMIN ADDRESS 27T
A11F
COMMAND ADMIN ADDRESS 27R
A12E
MAINTENANCE TEST ADDRESS 27T
A12F
MAINTENANCE TEST ADDRESS 27R
A10G
OPERATIONAL CONTROL ADDRESS 28T
A10H
OPERATIONAL CONTROL ADDRESS 28R
A11G
COMMAND ADMIN. ADDRESS 28T
A11H
COMMAND ADMIN ADDRESS 28R
A12G
MAINTENANCE TEST ADDRESS 28T
A12H
MAINTENANCE TEST ADDRESS 28R
Y127TA
Y127TB
Y127RA
Y127RB
Y227TA
Y227TB
Y227RA
Y227RB
Y327TA
Y327TB
Y327RA
Y327RB
Y128TA
Y128TB
Y128RA
Y128RB
Y228TA
Y228TB
Y228RA
Y228RB
Y328TA
Y328TB
Y328RA
Y328RB
P27
J27
P28
J28
P1
WXXX
P2
EMI SUPPRESSION FILTER
EMI SUPPRESSSION FILTER
G H E F M N K L T U R S
A4 B4 A3 B3 A6 B6 A5 B5 A8 B8 A7 B7

Change 1 FO-33. External Subscriber Patch Interface Diagram (Sheet 14 of 17)

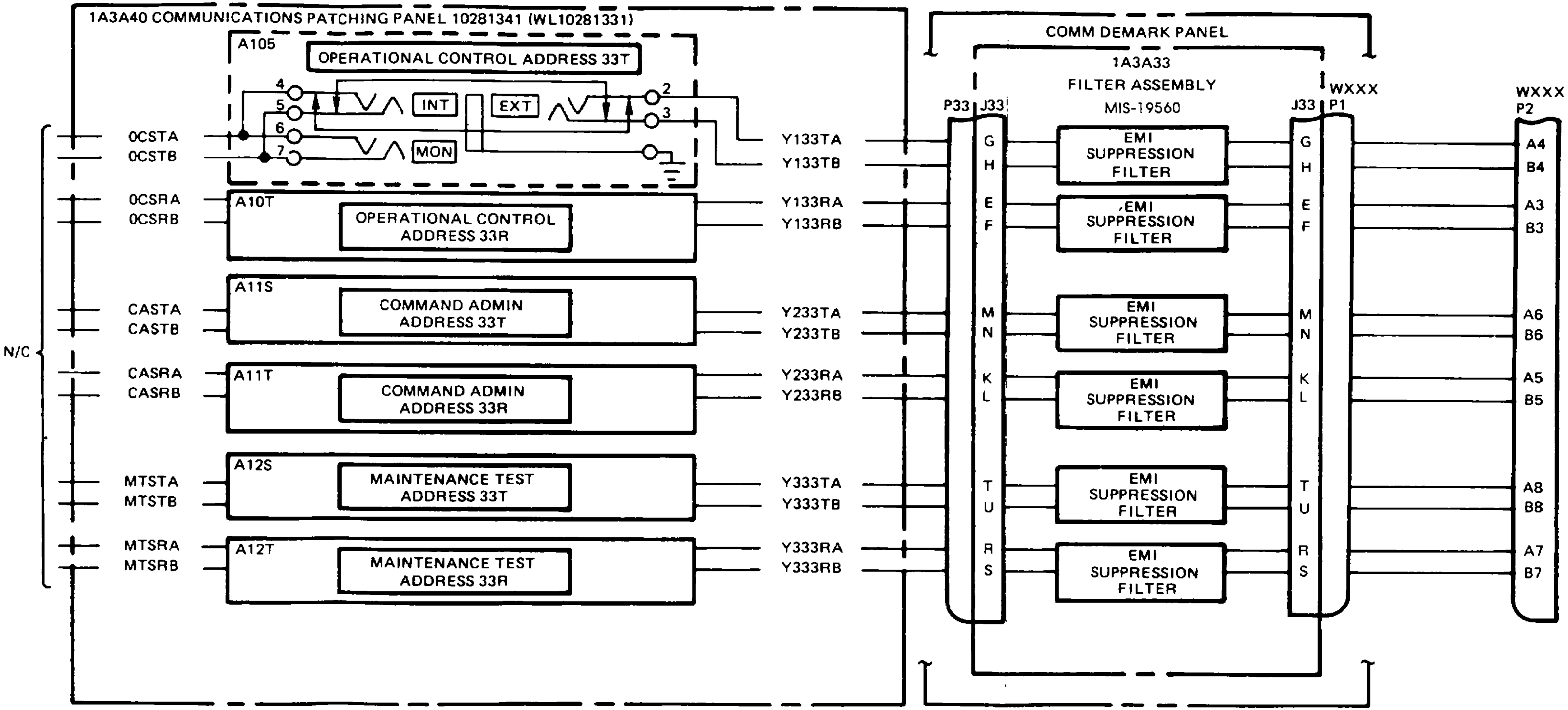

1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281335 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
COMM DEMARK PANEL
1A3A29
FILTER ASSEMBLY
MIS-19560
1A3A30
FILTER ASSEMBLY
MIS-19560
J1507
J1417
J1430
TP5
TP12
TP8
TP1
TX
RX
A1507 (REF)
A1417 (REF)
A1430 (REF)
W169
J1504
P1504
J1419
P1419
J1433
P1433
J4
P42
J6
P44
J8
P46
N0C29TXA
N0C29TXB
N0C29RXA
N0C29RXB
NCA29TXA
NCA29TXB
NCA29RXA
NCA29RXB
NMT29TXA
NMT29TXB
NMT29RXA
NMT29RXB
N0C30TXA
N0C30TXB
N0C30RXA
N0C30RXB
NCA30TXA
NCA30TXB
NCA30RXA
NCA30RXB
NMT30TXA
NMT30TXB
NMT30RXA
NMT30RXB
N129TA
N129TB
N129RA
N129RB
N229TA
N229TB
N229RA
N229RB
N329TA
N329TB
N329RA
N329RB
N130TA
N130TB
N130RA
N130RB
N230TA
N230TB
N230RA
N230RB
N330TA
N330TB
N330RA
N330RB
A10I
OPERATIONAL CONTROL ADDRESS 29T
INT
EXT
MON
A10J
OPERATIONAL CONTROL ADDRESS 29R
A11I
COMMAND ADMIN ADDRESS 29T
A11J
COMMAND ADMIN ADDRESS 29R
A12I
MAINTENANCE TEST ADDRESS 29T
A12J
MAINTENANCE TEST ADDRESS 29R
A10K
OPERATIONAL CONTROL ADDRESS 30T
A10L
OPERATIONAL CONTROL ADDRESS 30R
A11K
COMMAND ADMIN ADDRESS 30T
A11L
COMMAND ADMIN ADDRESS 30R
A12K
MAINTENANCE TEST ADDRESS 30T
A12L
MAINTENANCE TEST ADDRESS 30R
Y129TA
Y129TB
Y129RA
Y129RB
Y229TA
Y229TB
Y229RA
Y229RB
Y329TA
Y329TB
Y329RA
Y329RB
Y130TA
Y130TB
Y130RA
Y130RB
Y230TA
Y230TB
Y230RA
Y230RB
Y330TA
Y330TB
Y330RA
Y330RB
P29
J29
P30
J30
P1
P2
WXXX
EMI SUPPRESSION FILTER
G H E F M N K L T U R S
A4 B4 A3 B3 A6 B6 A5 B5 A8 B8 A7 B7

Change 1 FO-33. External Subscriber Patch Interface Diagram (Sheet 15 of 17)

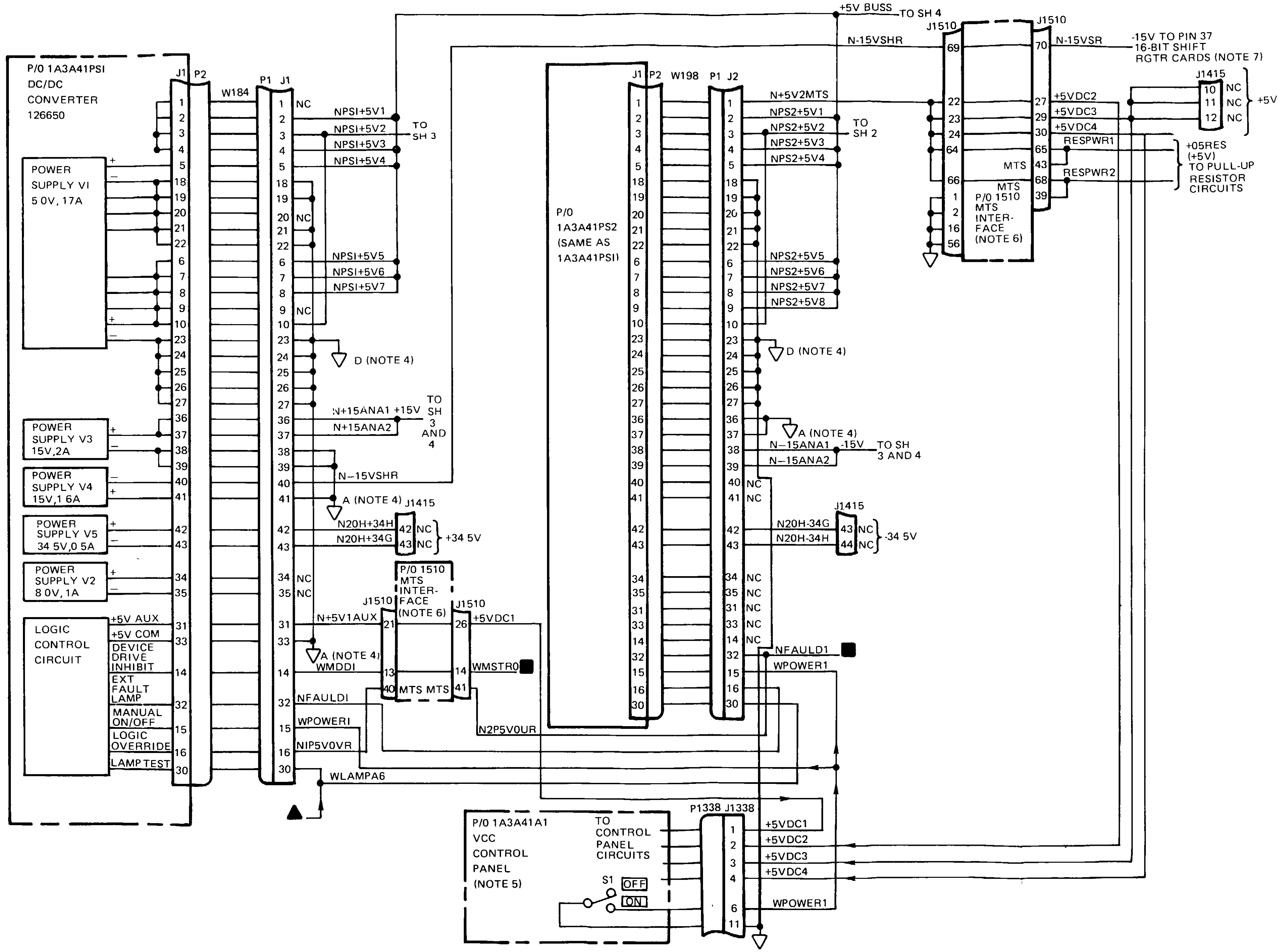

1A3A41 VOICE COMMUNICATIONS CENTRAL UNIT 10281355 (WL10282276)
1A3A41A2 VCC CARD CAGE 10281334 (WL10281334-2)
J1507
TP20
TP13
TX
RX
A1507 (REF)
J1417
A1417 (REF)
J1430
A1430 (REF)
TP18
TP24
N0C31TXA
N0C31TXB
N0C31RXA
N0C31RXB
NCA31TXA
NCA31TXB
NCA31RXA
NCA31RXB
NMT31TXA
NMT31TXB
NMT31RXA
NMT31RXB
N0C32TXA
N0C32TXB
N0C32RXA
N0C32RXB
NCA32TXA
NCA32TXB
NCA32RXA
NCA32RXB
NMT32TXA
NMT32TXB
NMT32RXA
NMT32RXB
J1504
W169 P1504
J1419
W169 P1419
J1433
W169 P1433
W169 J4
P42
W169 J6
P44
W169 J8
P46
1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
A10M
OPERATIONAL CONTROL ADDRESS 31T
INT
EXT
MON
A10N
OPERATIONAL CONTROL ADDRESS 31R
A11M
COMMAND ADMIN ADDRESS 31T
A11N
COMMAND ADMIN ADDRESS 31R
A12M
MAINTENANCE TEST ADDRESS 31T
A12N
MAINTENANCE TEST ADDRESS 31R
A10P
OPERATIONAL CONTROL ADDRESS 32T
A10R
OPERATIONAL CONTROL ADDRESS 32R
A11P
COMMAND ADMIN ADDRESS 32T
A11R
COMMAND ADMIN ADDRESS 32R
A12P
MAINTENANCE TEST ADDRESS 32T
A12R
MAINTENANCE TEST ADDRESS 32R
N131TA
N131TB
N131RA
N131RB
N231TA
N231TB
N231RA
N231RB
N331TA
N331TB
N331RA
N331RB
N132TA
N132TB
N132RA
N132RB
N232TA
N232TB
N232RA
N232RB
N332TA
N332TB
N332RA
N332RB
Y131TA
Y131TB
Y131RA
Y131RB
Y231TA
Y231TB
Y231RA
Y231RB
Y331TA
Y331TB
Y331RA
Y331RB
Y132TA
Y132TB
Y132RA
Y132RB
Y232TA
Y232TB
Y232RA
Y232RB
Y332TA
Y332TB
Y332RA
Y332RB
COMM DEMARK PANEL
1A3A31 FILTER ASSEMBLY MIS-19560
1A3A32 FILTER ASSEMBLY MIS-19560
P31 J31
J31 P1
P32 J32
J32 P1
WXXX
WXXX P2
EMI SUPPRESSION FILTER
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

Change 1

FO-33. External Subscriber Patch Interface Diagram (Sheet 16 of 17)

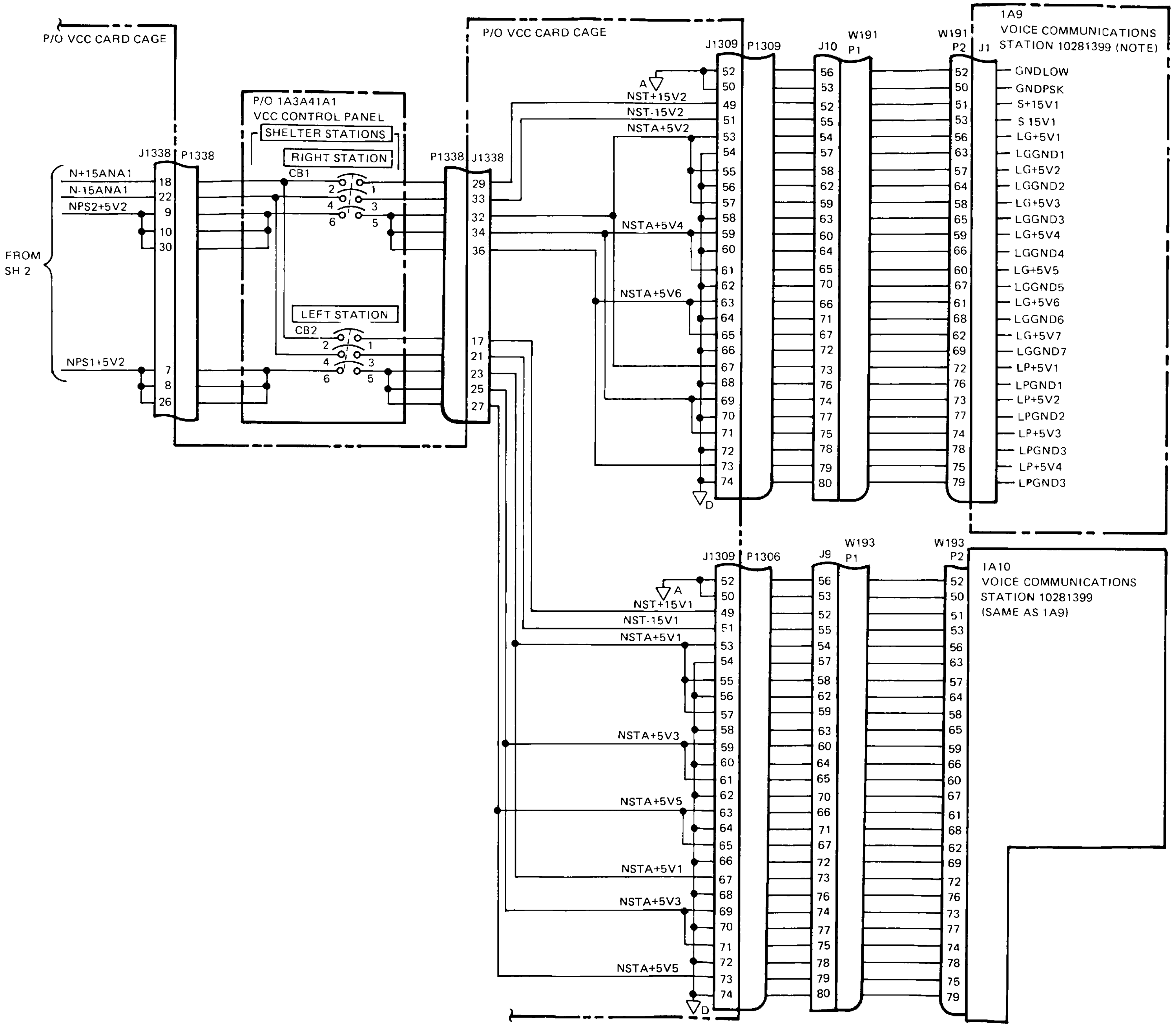

1A3A40 COMMUNICATIONS PATCHING PANEL 10281341 (WL10281331)
A105
OPERATIONAL CONTROL ADDRESS 33T
4
5
6
7
INT
EXT
MON
2
3
OCSTA
OCSTB
OCSRA
OCSRB
A10T
OPERATIONAL CONTROL ADDRESS 33R
CASTA
CASTB
A11S
COMMAND ADMIN ADDRESS 33T
N/C
CASRA
CASRB
A11T
COMMAND ADMIN ADDRESS 33R
MTSTA
MTSTB
A12S
MAINTENANCE TEST ADDRESS 33T
MTSRA
MTSRB
A12T
MAINTENANCE TEST ADDRESS 33R
Y133TA
Y133TB
Y133RA
Y133RB
Y233TA
Y233TB
Y233RA
Y233RB
Y333TA
Y333TB
Y333RA
Y333RB
COMM DEMARK PANEL
1A3A33
FILTER ASSEMBLY
MIS-19560
P33
J33
J33
WXXX
P1
WXXX
P2
G
H
E
F
M
N
K
L
T
U
R
S
EMI SUPPRESSION FILTER
EMI SUPPRESSION FILTER
EMI SUPPRESSION FILTER
EMI SUPPRESSION FILTER
EMI SUPPRESSION FILTER
EMI SUPPRESSION FILTER
A4
B4
A3
B3
A6
B6
A5
B5
A8
B8
A7
B7

FO-33. External subscriber Patch Interface Diagram (Sheet 17 of 17)

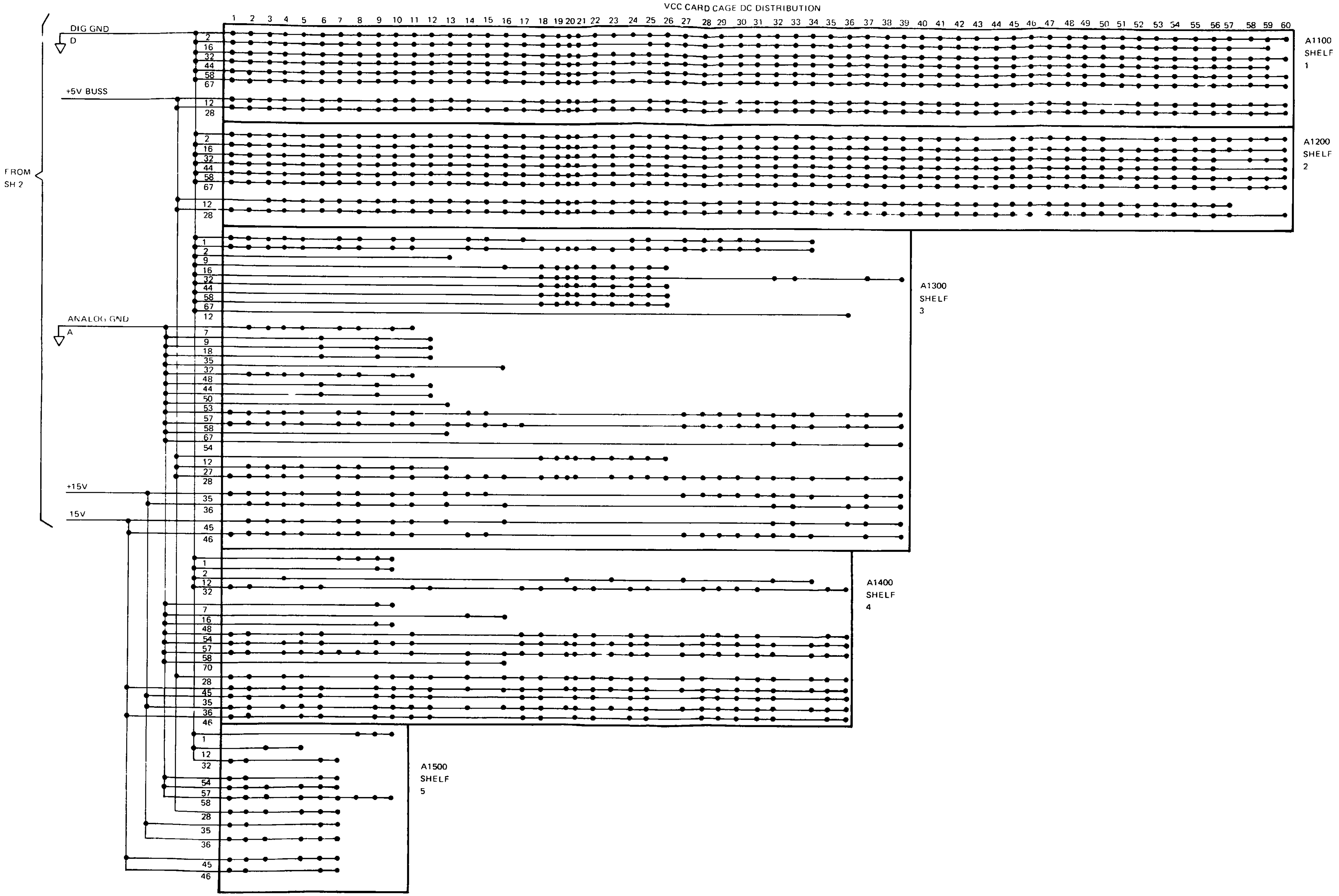


P/0 1A3A41PSI
DC/DC
CONVERTER
126650
POWER SUPPLY VI 5 0V, 17A
POWER SUPPLY V3 15V,2A
POWER SUPPLY V4 15V,1 6A
POWER SUPPLY V5 34 5V,0 5A
POWER SUPPLY V2 8 0V, 1A
LOGIC CONTROL CIRCUIT
+5V AUX
+5V COM
DEVICE DRIVE INHIBIT
EXT FAULT LAMP
MANUAL ON/OFF
LOGIC OVERRIDE
LAMP TEST
J1
P2
W184
P1
J1
NC
NPSI+5V1
NPSI+5V2
NPSI+5V3
NPSI+5V4
TO SH 3
NPSI+5V5
NPSI+5V6
NPSI+5V7
D (NOTE 4)
N+15ANA1 +15V
N+15ANA2
TO SH 3 AND 4
N-15VSHR
A (NOTE 4)
J1415
N20H+34H
N20H+34G
+34 5V
P/0 1510 MTS INTER-FACE (NOTE 6)
J1510
N+5V1AUX
+5VDC1
WMDDI
WMSTR0
MTS MTS
NFAULDI
WPOWERI
NIP5V0VR
N2P5V0UR
WLAMPA6
+5V BUSS
TO SH 4
N-15VSHR
W198
P/0 1A3A41PS2 (SAME AS 1A3A41PSI)
N+5V2MTS
NPS2+5V1
NPS2+5V2
NPS2+5V3
NPS2+5V4
TO SH 2
NPS2+5V5
NPS2+5V6
NPS2+5V7
NPS2+5V8
N—15ANA1 -15V
N—15ANA2
TO SH 3 AND 4
N20H-34G
N20H-34H
-34 5V
NFAULD1
WPOWER1
N-15VSR
-15V TO PIN 37 16-BIT SHIFT RGTR CARDS (NOTE 7)
+5VDC2
+5VDC3
+5VDC4
+5V
RESPWR1
RESPWR2
+05RES (+5V) TO PULL-UP RESISTOR CIRCUITS
MTS
P/0 1510 MTS INTER-FACE (NOTE 6)
P1338 J1338
P/0 1A3A41A1 VCC CONTROL PANEL (NOTE 5)
TO CONTROL PANEL CIRCUITS
S1
OFF
ON
+5VDC1
+5VDC2
+5VDC3
+5VDC4
WPOWER1

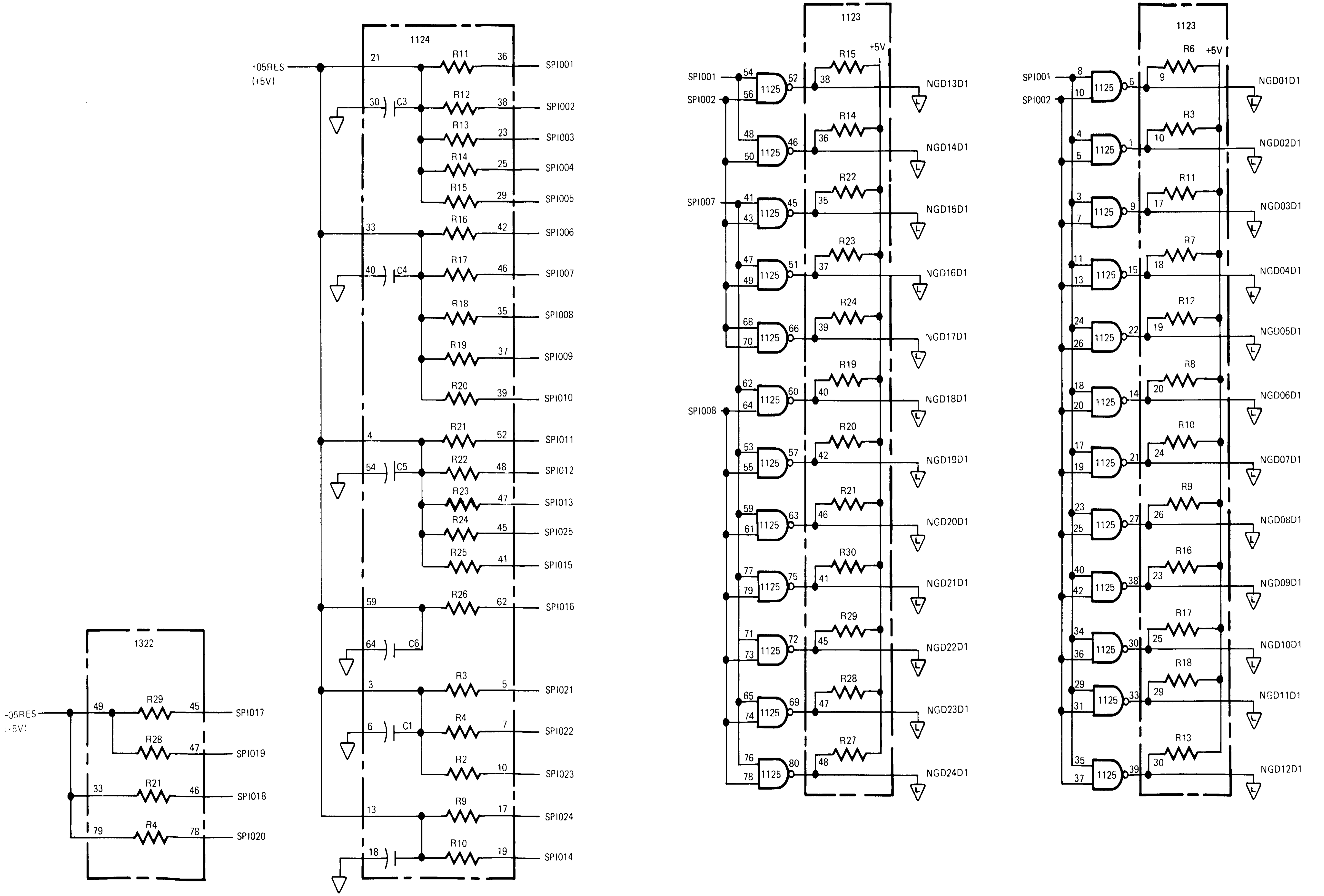
FO-34. Voice Communications Power Distribution diagram (sheet 2 of 5)


P/O VCC CARD CAGE
P/O 1A3A41A1
VCC CONTROL PANEL
SHELTER STATIONS
RIGHT STATION
CB1
LEFT STATION
CB2
P/O VCC CARD CAGE
J1338
P1338
N+15ANA1
N-15ANA1
NPS2+5V2
NPS1+5V2
FROM SH 2
J1309
P1309
J10
W191 P1
W191 P2
J1
1A9
VOICE COMMUNICATIONS
STATION 10281399 (NOTE)
NST+15V2
NST-15V2
NSTA+5V2
NSTA+5V4
NSTA+5V6
GNDLOW
GNDPSK
S+15V1
S 15V1
LG+5V1
LGGND1
LG+5V2
LGGND2
LG+5V3
LGGND3
LG+5V4
LGGND4
LG+5V5
LGGND5
LG+5V6
LGGND6
LG+5V7
LGGND7
LP+5V1
LPGND1
LP+5V2
LPGND2
LP+5V3
LPGND3
LP+5V4
LPGND3
A
D
J1309
P1306
J9
W193 P1
W193 P2
1A10
VOICE COMMUNICATIONS
STATION 10281399
(SAME AS 1A9)
NST+15V1
NST-15V1
NSTA+5V1
NSTA+5V3
NSTA+5V5
NSTA+5V1
NSTA+5V3
NSTA+5V5
A
D

FO-34. Voice Communications Power distribution diagram (Sheet 3 of 5)


VCC CARD CAGE DC DISTRIBUTION
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60
DIG GND
D
+5V BUSS
FROM
SH 2
ANALOG GND
A
+15V
15V
2 16 32 44 58 67 12 28
A1100
SHELF
1
2 16 32 44 58 67 12 28
A1200
SHELF
2
1 2 9 16 32 44 58 67 12 7 9 18 35 32 48 44 50 53 57 58 67 54 12 27 28 35 36 45 46
A1300
SHELF
3
1 2 12 32 7 16 48 54 57 58 70 28 45 35 36 46
A1400
SHELF
4
1 12 32 54 57 58 28 35 36 45 46
A1500
SHELF
5

FO-34. Voice communications Power Distribution diagram (sheet 4 of 5)

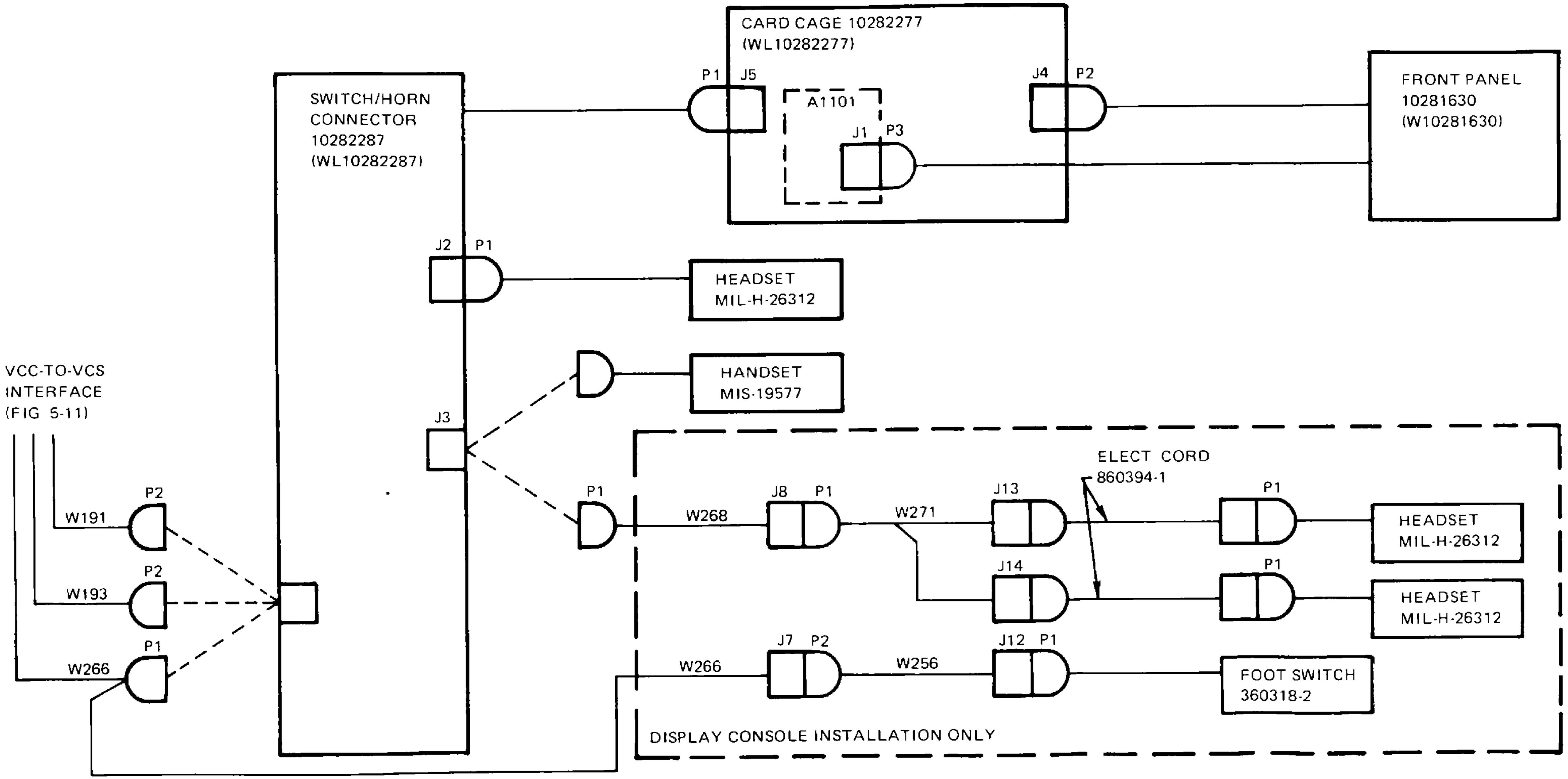


+05RES
(+5V)
1322
49
R29
45
SPI017
R28
47
SPI019
33
R21
46
SPI018
79
R4
78
SPI020
+05RES
(+5V)
1124
21
R11
36
SPI001
30
C3
R12
38
SPI002
R13
23
SPI003
R14
25
SPI004
R15
29
SPI005
33
R16
42
SPI006
40
C4
R17
46
SPI007
R18
35
SPI008
R19
37
SPI009
R20
39
SPI010
4
R21
52
SPI011
54
C5
R22
48
SPI012
R23
47
SPI013
R24
45
SPI025
R25
41
SPI015
59
R26
62
SPI016
64
C6
3
R3
5
SPI021
6
C1
R4
7
SPI022
R2
10
SPI023
13
R9
17
SPI024
18
R10
19
SPI014
1123
SPI001
SPI002
54
56
1125
52
R15
+5V
38
NGD13D1
48
50
46
R14
36
NGD14D1
SPI007
41
43
45
R22
35
NGD15D1
47
49
51
R23
37
NGD16D1
68
70
66
R24
39
NGD17D1
SPI008
62
64
60
R19
40
NGD18D1
53
55
57
R20
42
NGD19D1
59
61
63
R21
46
NGD20D1
77
79
75
R30
41
NGD21D1
71
73
72
R29
45
NGD22D1
65
74
69
R28
47
NGD23D1
76
78
80
R27
48
NGD24D1
1123
SPI001
SPI002
8
10
1125
6
R6
+5V
9
NGD01D1
4
5
1
R3
10
NGD02D1
3
7
9
R11
17
NGD03D1
11
13
15
R7
18
NGD04D1
24
26
22
R12
19
NGD05D1
18
20
14
R8
20
NGD06D1
17
19
21
R10
24
NGD07D1
23
25
27
R9
26
NGD08D1
40
42
38
R16
23
NGD09D1
34
36
30
R17
25
NGD10D1
29
31
33
R18
29
NGD11D1
35
37
39
R13
30
NGD12D1

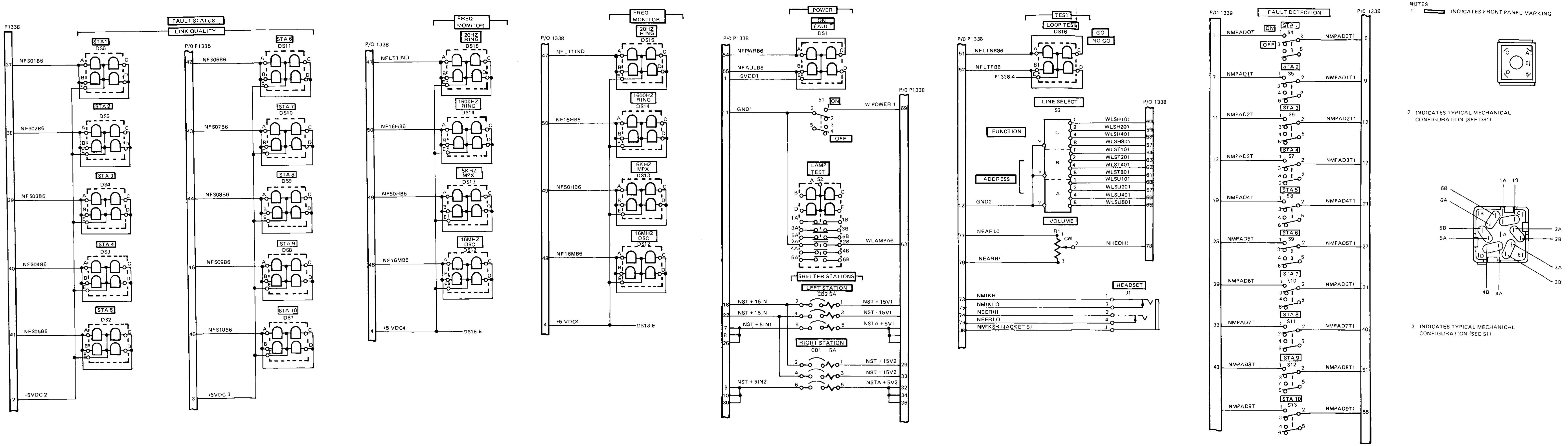
NOTES:

1. Ñ INDICATES AN ACTIVE LOGIC LOW ON ZERO
2. SPIOXX INDICATES A COMMON LOGIC HIGH OR ONE.
3. ALL RESISTORS ARE NOT SHOWN.
4. +05RES INDICATES A +5V SOURCE APPLIED THROUGH THE MTS INTERFACE CARD (A1510).

FO-34. Voice Communications Power Distribution Diagram (Sheet 5 of 5)


CARD CAGE 10282277
(WL10282277)
P1
J5
A1101
J1
P3
J4
P2
FRONT PANEL
10281630
(W10281630)
SWITCH/HORN
CONNECTOR
10282287
(WL10282287)
J2
P1
HEADSET
MIL-H-26312
HANDSET
MIS-19577
VCC-TO-VCS
INTERFACE
(FIG 5-11)
J3
P1
ELECT CORD
860394-1
W268
J8
P1
W271
J13
P1
HEADSET
MIL-H-26312
J14
P1
HEADSET
MIL-H-26312
P2
W191
P2
W193
P1
W266
W266
J7
P2
W256
J12
P1
FOOT SWITCH
360318-2
DISPLAY CONSOLE INSTALLATION ONLY

FO-35. VCS Cabling Diagram.


FAULT STATUS
LINK QUALITY
P1338
P/O P1338
STA 1
DS6
STA 2
DS5
STA 3
DS4
STA 4
DS3
STA 5
DS2
STA 6
DS11
STA 7
DS10
STA 8
DS9
STA 9
DS8
STA 10
DS7
NFS01B6
NFS02B6
NFS03B6
NFS04B6
NFS05B6
NFS06B6
NFS07B6
NFS08B6
NFS09B6
NFS10B6
+5VDC 2
+5VDC 3
FREQ MONITOR
20HZ RING
DS15
1600HZ RING
DS14
5KHZ MPX
DS13
16MHZ OSC
DS12
NFLT1IND
NF16HB6
NF50HB6
NF16MB6
+5 VDC4
DS16-E
POWER
ON
FAULT
DS1
NFPWRB6
NFAULB6
+5VDD1
GND1
S1
ON
OFF
W POWER 1
LAMP TEST
S2
WLAMPA6
SHELTER STATIONS
LEFT STATION
CB2 5A
NST + 15IN
NST + 15IN
NST + 5IN1
NST + 15V1
NST - 15VI
NSTA + 5VI
RIGHT STATION
CB1 5A
NST + 15V2
NST - 15V2
NSTA + 5V2
NST + 5IN2
TEST
LOOP TEST
DS16
GO
NO GO
NFLTN886
NFLTFB6
P1338-4
LINE SELECT
S3
FUNCTION
ADDRESS
GND2
WLSH101
WLSH201
WLSH401
WLSH801
WLST101
WLST201
WLST401
WLST801
WLSU101
WLSU201
WLSU401
WLSU801
VOLUME
NEARLO
NEARHI
R1
CW
NHEDHI
HEADSET
J1
NMIKHI
NMIKLO
NEERHI
NEERLO
NMIKSH (JACKET B)
P/O 1339
FAULT DETECTION
P/O 1338
NMPAD0T
NMPAD1T
NMPAD2T
NMPAD3T
NMPAD4T
NMPAD5T
NMPAD6T
NMPAD7T
NMPAD8T
NMPAD9T
NMPAD0T1
NMPAD1T1
NMPAD2T1
NMPAD3T1
NMPAD4T1
NMPAD5T1
NMPAD6T1
NMPAD7T1
NMPAD8T1
NMPAD9T1
ON
OFF
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
1A
1B
2A
2B
3A
3B
4A
4B
5A
5B
6A
6B

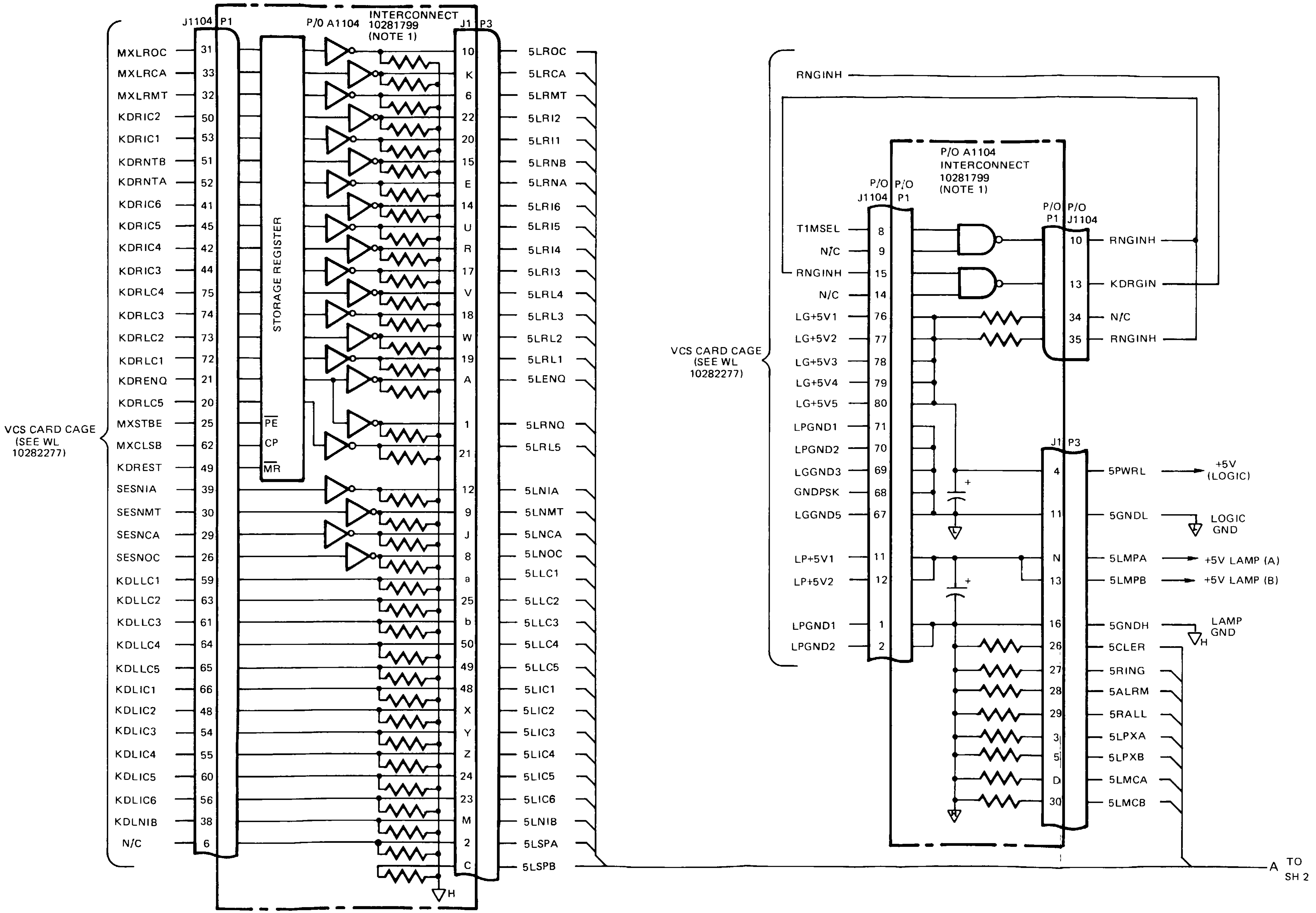
NOTES

1 ▭ INDICATES FRONT PANEL MARKING

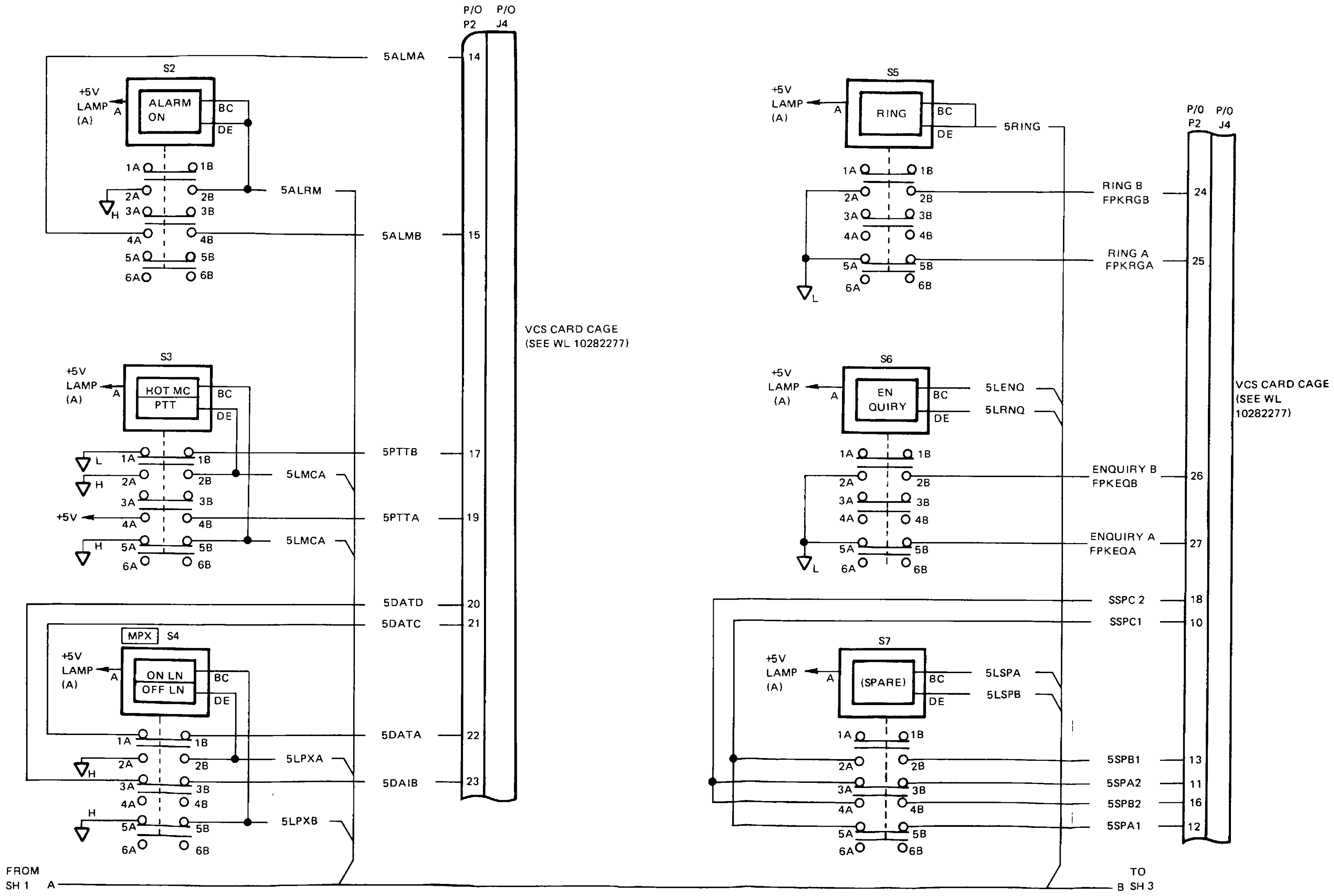
2 INDICATES TYPICAL MECHANICAL CONFIGURATION (SEE DS1)

3 INDICATES TYPICAL MECHANICAL CONFIGURATION (SEE S1)

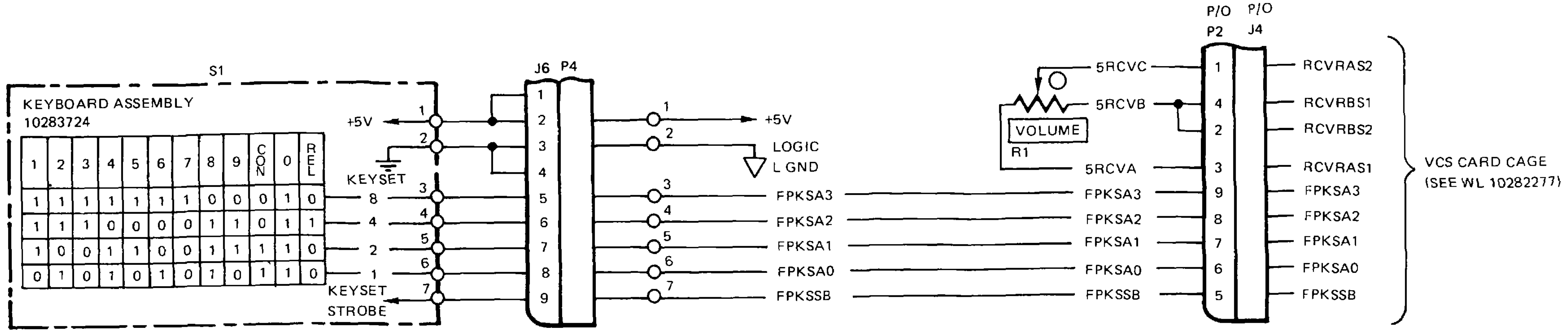
FO-36. VCC Front Panel, Schematic Diagram.


J1104 P1
P/O A1104
INTERCONNECT
10281799
(NOTE 1)
J1 P3
STORAGE REGISTER
PE
CP
MR
VCS CARD CAGE
(SEE WL
10282277)
MXLROC 31
MXLRCA 33
MXLRMT 32
KDRIC2 50
KDRIC1 53
KDRNTB 51
KDRNTA 52
KDRIC6 41
KDRIC5 45
KDRIC4 42
KDRIC3 44
KDRLC4 75
KDRLC3 74
KDRLC2 73
KDRLC1 72
KDRENQ 21
KDRLC5 20
MXSTBE 25
MXCLSB 62
KDREST 49
SESNIA 39
SESNMT 30
SESNCA 29
SESNOC 26
KDLLC1 59
KDLLC2 63
KDLLC3 61
KDLLC4 64
KDLLC5 65
KDLIC1 66
KDLIC2 48
KDLIC3 54
KDLIC4 55
KDLIC5 60
KDLIC6 56
KDLNIB 38
N/C 6
10 5LROC
K 5LRCA
6 5LRMT
22 5LRI2
20 5LRI1
15 5LRNB
E 5LRNA
14 5LRI6
U 5LRI5
R 5LRI4
17 5LRI3
V 5LRL4
18 5LRL3
W 5LRL2
19 5LRL1
A 5LENQ
1 5LRNQ
21 5LRL5
12 5LNIA
9 5LNMT
J 5LNCA
8 5LNOC
a 5LLC1
25 5LLC2
b 5LLC3
50 5LLC4
49 5LLC5
48 5LIC1
X 5LIC2
Y 5LIC3
Z 5LIC4
24 5LIC5
23 5LIC6
M 5LNIB
2 5LSPA
C 5LSPB
H
RNGINH
P/O A1104
INTERCONNECT
10281799
(NOTE 1)
P/O J1104
P/O P1
P/O P1
P/O J1104
VCS CARD CAGE
(SEE WL
10282277)
T1MSEL 8
N/C 9
RNGINH 15
N/C 14
LG+5V1 76
LG+5V2 77
LG+5V3 78
LG+5V4 79
LG+5V5 80
LPGND1 71
LPGND2 70
LGGND3 69
GNDPSK 68
LGGND5 67
LP+5V1 11
LP+5V2 12
LPGND1 1
LPGND2 2
10 RNGINH
13 KDRGIN
34 N/C
35 RNGINH
J1 P3
4 5PWRL
+5V
(LOGIC)
11 5GNDL
LOGIC
GND
N 5LMPA
+5V LAMP (A)
13 5LMPB
+5V LAMP (B)
16 5GNDH
LAMP
GND
H
26 5CLER
27 5RING
28 5ALRM
29 5RALL
3 5LPXA
5 5LPXB
D 5LMCA
30 5LMCB
+
+
A TO
SH 2

FO-37. VCS Front Panel, Schematic Diagram (Sheet 1 of 6).


P/O P2
P/O J4
5ALMA
14
S2
+5V LAMP (A)
A
ALARM ON
BC
DE
1A
1B
2A
2B
3A
3B
4A
4B
5A
5B
6A
6B
H
5ALRM
5ALMB
15
VCS CARD CAGE (SEE WL 10282277)
S3
HOT MC
PTT
5PTTB
17
L
5LMCA
+5V
5PTTA
19
5DATD
20
5DATC
21
MPX
S4
ON LN
OFF LN
5DATA
22
5LPXA
5DAIB
23
5LPXB
FROM SH 1
A
S5
RING
5RING
RING B FPKRGB
24
RING A FPKRGA
25
S6
EN QUIRY
5LENQ
5LRNQ
ENQUIRY B FPKEQB
26
ENQUIRY A FPKEQA
27
SSPC 2
18
SSPC1
10
S7
(SPARE)
5LSPA
5LSPB
5SPB1
13
5SPA2
11
5SPB2
16
5SPA1
12
VCS CARD CAGE (SEE WL 10282277)
TO SH 3
B

FO-37. VCS Front Panel, Schematic Diagram (Sheet 2 of 6).


S1
KEYBOARD ASSEMBLY
10283724
+5V
KEYSET
KEYSET
STROBE
1
2
3
4
5
6
7
8
4
2
1
J6
P4
1
2
3
4
5
6
7
8
9
+5V
LOGIC
L GND
FPKSA3
FPKSA2
FPKSA1
FPKSA0
FPKSSB
VOLUME
R1
5RCVC
5RCVB
5RCVA
FPKSA3
FPKSA2
FPKSA1
FPKSA0
FPKSSB
P/O
P2
P/O
J4
RCVRAS2
RCVRBS1
RCVRBS2
RCVRAS1
FPKSA3
FPKSA2
FPKSA1
FPKSA0
FPKSSB
VCS CARD CAGE
(SEE WL 10282277)

KEYSET	1	2	3	4	5	6	7	8	9	CON	0	REL
8	1	1	1	1	1	1	1	0	0	0	1	0
4	1	1	1	0	0	0	0	1	1	0	1	1
2	1	0	0	1	1	0	0	1	1	1	1	0
1	0	1	0	1	0	1	0	1	0	1	1	0

NOTES FOR VCS FRONT PANEL CIRCUITS:

1. INTERCONNECT CARD A1104 MAY OR MAY NOT BE SHOWN ON INTERFACE WIRING DIAGRAMS. THIS CARD USED AS CONNECTOR INTERFACE WHERE J1 CONNECTOR LISTING IS NOT COVERED IN WIRE LIST. FOR INTERCONNECTIONS, SCHEMATIC DIAGRAM FOR THE INTERCONNECT CARD AND FRONT PANEL AND CARD CAGE WIRE LIST ARE REQUIRED FOR SIGNAL TRACING.

2. THIS DRAWING IS FOR REFERENCE ONLY. WIRING SHOWN MAY BE INCOMPLETE; REFER TO CABLE WIRING DIAGRAMS OR APPLICABLE WIRE LIST FOR ADDITIONAL DATA.

3. SHIELD CONNECTIONS ARE NOT SHOWN.

4. REFER TO WL 10281630 FOR VCS FRONT PANEL.

5. REFER TO WL 10282277 FOR VCS CARD CAGE.

6. REFER TO WL 10282287 AND INTERFACE WIRING DIAGRAM FOR SWITCH HARNESS/CONNECTOR ASSEMBLY.

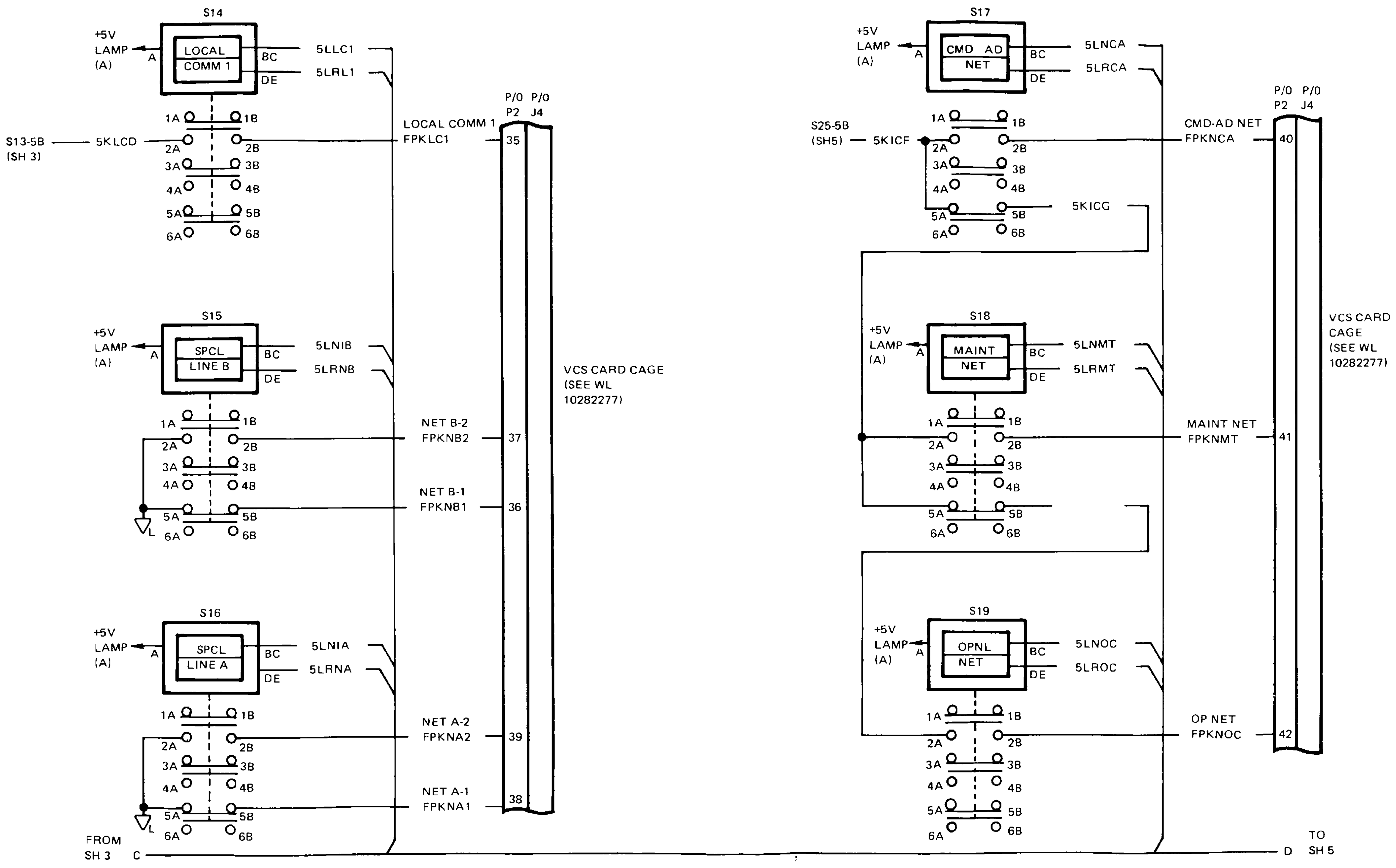
7. ALL CONTROLS AND INDICATORS SHOWN WITH UNUSED TERMINALS; UNUSED TERMINALS WILL BE ELIMINATED IN FORMAL DIAGRAMS.

8. ☐ INDICATES EQUIPMENT MARKINGS.

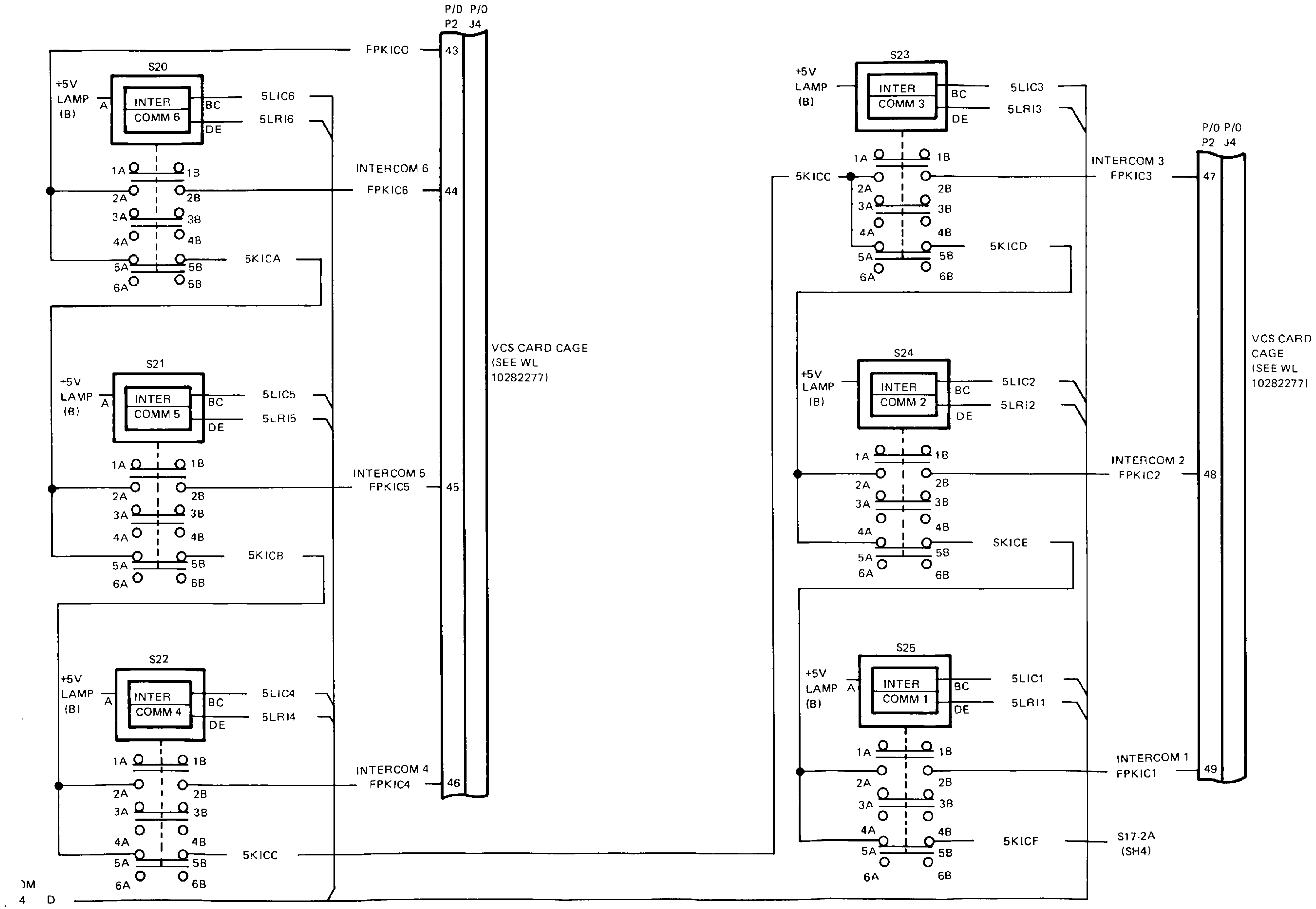
A
B
INDICATES TYPICAL MECHANICAL CONFIGURATION (SEE S2)

:A
:B

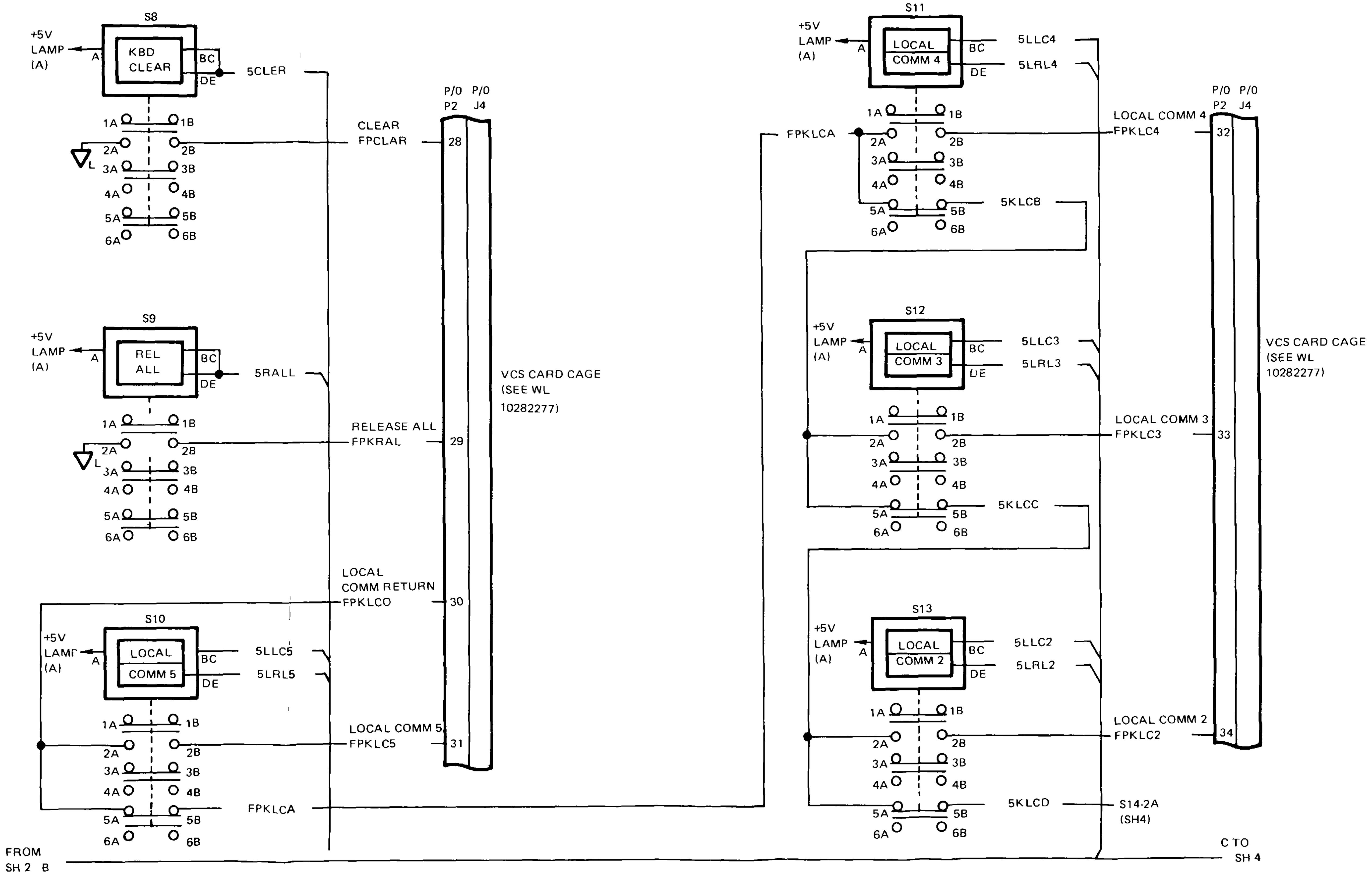
FO-37. VCS Front Panel, Schematic Diagram (Sheet 3 of 6).


S14
+5V
LAMP
(A)
A
LOCAL
COMM 1
BC
DE
5LLC1
5LRL1
1A
1B
S13-5B
(SH 3)
5KLCD
2A
2B
3A
3B
4A
4B
5A
5B
6A
6B
LOCAL COMM 1
FPKLC1
P/O
P2
P/O
J4
35
S15
+5V
LAMP
(A)
A
SPCL
LINE B
BC
DE
5LNIB
5LRNB
NET B-2
FPKNB2
37
NET B-1
FPKNB1
36
L
VCS CARD CAGE
(SEE WL
10282277)
S16
+5V
LAMP
(A)
A
SPCL
LINE A
BC
DE
5LNIA
5LRNA
NET A-2
FPKNA2
39
NET A-1
FPKNA1
38
FROM
SH 3
C
S17
+5V
LAMP
(A)
A
CMD AD
NET
BC
DE
5LNCA
5LRCA
S25-5B
(SH5)
5KICF
5KICG
CMD-AD NET
FPKNCA
40
S18
+5V
LAMP
(A)
A
MAINT
NET
BC
DE
5LNMT
5LRMT
MAINT NET
FPKNMT
41
VCS CARD
CAGE
(SEE WL
10282277)
S19
+5V
LAMP
(A)
A
OPNL
NET
BC
DE
5LNOC
5LROC
OP NET
FPKNOC
42
D
TO
SH 5

FO-37. VCS Front Panel, Schematic Diagram (Sheet 4 of 6)


P/0 P2
P/0 J4
FPKIC0
43
S20
+5V LAMP (B)
A
INTER COMM 6
BC
DE
5LIC6
5LRI6
1A
1B
2A
2B
3A
3B
4A
4B
5A
5B
6A
6B
INTERCOM 6
FPKIC6
44
5KICA
S21
INTER COMM 5
5LIC5
5LRI5
INTERCOM 5
FPKIC5
45
5KICB
VCS CARD CAGE (SEE WL 10282277)
S22
INTER COMM 4
5LIC4
5LRI4
INTERCOM 4
FPKIC4
46
5KICC
)M
4
D
S23
+5V LAMP (B)
INTER COMM 3
5LIC3
5LRI3
P/0 P2
P/0 J4
5KICC
INTERCOM 3
FPKIC3
47
5KICD
S24
INTER COMM 2
5LIC2
5LRI2
INTERCOM 2
FPKIC2
48
SKICE
VCS CARD CAGE (SEE WL 10282277)
S25
INTER COMM 1
5LIC1
5LRI1
INTERCOM 1
FPKIC1
49
5KICF
S17-2A (SH4)

FO-37. VCS Front Panel, Schematic Diagram (Sheet 5 of 6)


S8
+5V
LAMP
(A)
A
KBD
CLEAR
BC
DE
5CLER
1A
1B
2A
2B
3A
3B
4A
4B
5A
5B
6A
6B
L
CLEAR
FPCLAR
P/O
P2
P/O
J4
28
S9
+5V
LAMP
(A)
A
REL
ALL
BC
DE
5RALL
RELEASE ALL
FPKRAL
29
VCS CARD CAGE
(SEE WL
10282277)
LOCAL
COMM RETURN
FPKLCO
30
S10
+5V
LAMP
(A)
A
LOCAL
COMM 5
BC
DE
5LLC5
5LRL5
LOCAL COMM 5
FPKLC5
31
FPKLCA
FROM
SH 2 B
S11
+5V
LAMP
(A)
A
LOCAL
COMM 4
BC
DE
5LLC4
5LRL4
FPKLCA
LOCAL COMM 4
FPKLC4
32
5KLCB
S12
+5V
LAMP
(A)
A
LOCAL
COMM 3
BC
DE
5LLC3
5LRL3
LOCAL COMM 3
FPKLC3
33
5KLCC
S13
+5V
LAMP
(A)
A
LOCAL
COMM 2
BC
DE
5LLC2
5LRL2
LOCAL COMM 2
FPKLC2
34
5KLCD
S14-2A
(SH4)
C TO
SH 4
VCS CARD CAGE
(SEE WL
10282277)

FO-37. VCS Front Panel, Schematic Diagram (Sheet 6 of 6)

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

DONALD J. DELANDRO
Brigadier General, United States Army
The Adjutant General

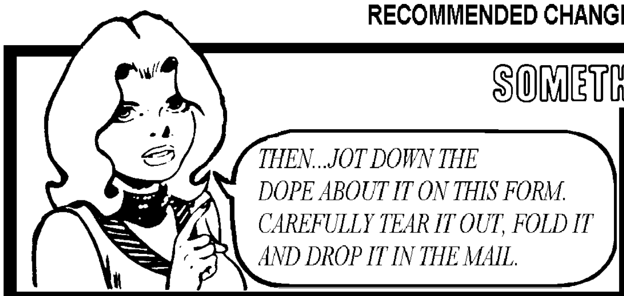
Distribution:

To be distributed in accordance with DA Form 12-32, Organizational Maintenance requirements for AN/TSQ-73 Missile System.

*U S GOVERNMENT PRINTING OFFICE: 1985-544 1781/20032

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH PUBLICATION


THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL.

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.	IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER	SIGN HERE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C