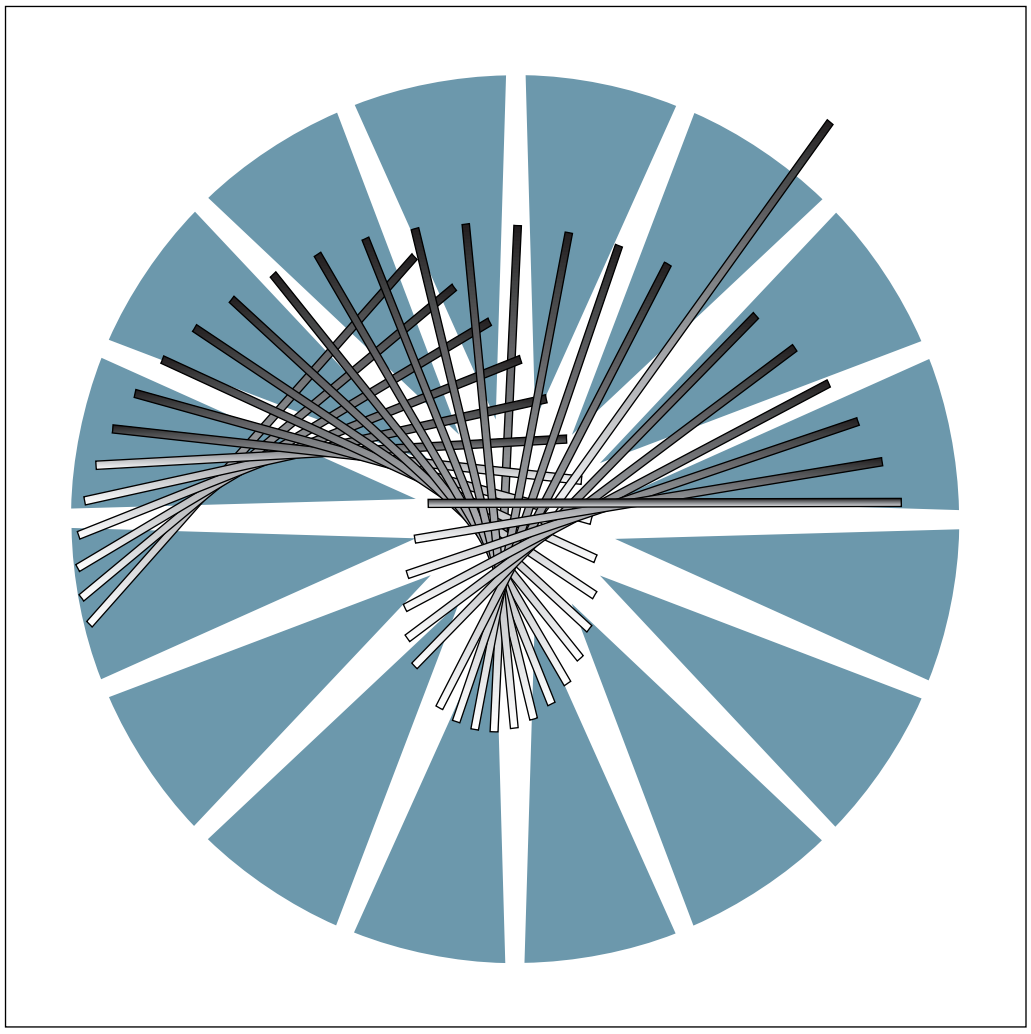
3746 Nways Multiprotocol Controller
Models 900 and 950

External Cable References



SY33-2117-01

3746 Nways Multiprotocol Controller
Models 900 and 950

External Cable References

SY33-2117-01

Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page vii.

Second Edition (December 1997)

The information contained in this manual is subject to change from time to time. Any such changes will be reported in subsequent revisions. Changes have been made throughout this edition, and this manual should be read in its entirety.

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2. The network adapter interfaces housed within the IBM 3746 Expansion Unit Model 900 and IBM 3746 Nways Multiprotocol Controller Model 950 are approved separately, each one having its own independent approval number. These interface adapters, supplied by IBM, do not use or contain excessive voltages. An excessive voltage is one that exceeds 42.4 V peak ac or 60 V dc. They interface with the IBM 3746 Expansion Unit Model 900 and IBM 3746 Nways Multiprotocol Controller Model 950 using Safety Extra Low Voltages (SELV) only. In order to maintain the separate (independent) approval of the IBM adapters, it is essential that other optional cards, not supplied by IBM, do not use mains voltages or any other excessive voltages. Seek advice from a competent engineer before installing other adapters not supplied by IBM.

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About This Manual

Who Should Use This Manual

This manual provides references to wrap plugs, cables, and telecommunication interface cables used to connect IBM* 3746 models 900 and 950 to other external equipment and telecommunication lines.

This manual is dedicated to managers and planners who intend to install the IBM 3746 models 900 and 950. This manual is also useful to all those who will prepare the site for the setup of the controller, or during setup.

How This Manual Is Organized

Chapter 1 Presents the service processor and RSF cables for the 3746-900/950.

Chapter 2 Presents the cables for the 3746-900/950 features.

Chapter 3 Presents the external cables for the 3746-900/950, the ESCON cables, and LAN cables.

Where to Find More Information

Service and Customer Bibliographies for all 3745 and 3746 Models are provided at the end of this manual.

Chapter 1. Service Processor and Network Node Processor Cables for 3746 Models 900 and 950

Service Processor and Network Node Processor Cables for the 3746-900

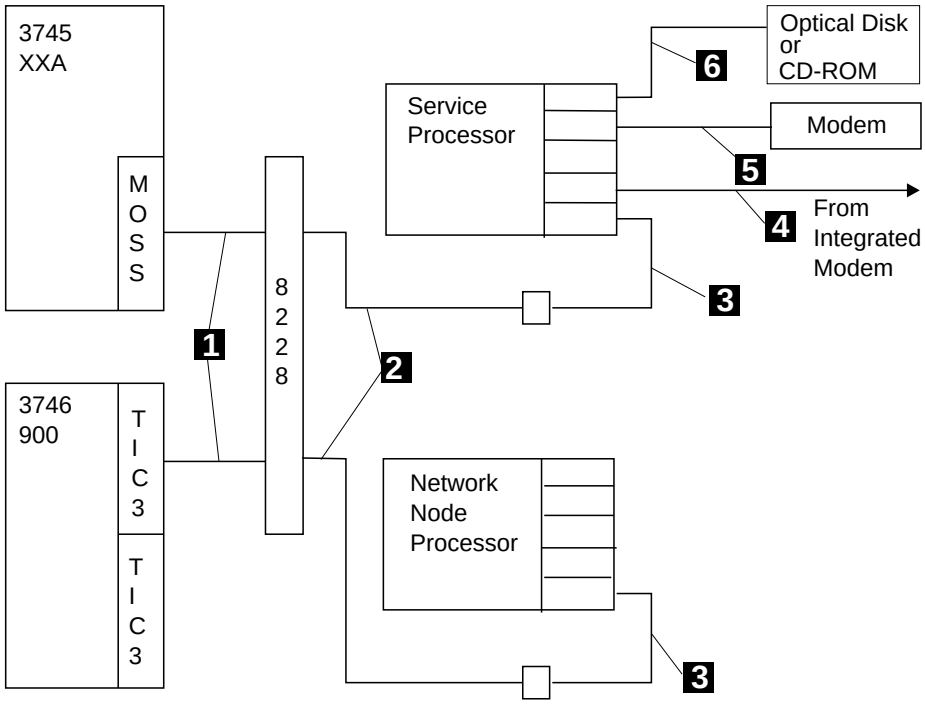


Figure 1-1. Service Processor and Network Node Processor Cables for 3746-900

Notes:

1. For cable 1 refer to “Cable From the 3746-900/950 or any 3745 model A to the 8228” on page 1-3.
2. For cable 2 3 , 4 , 5 , and 6 refer to the appropriate *Service Processor Installation and Maintenance* or to the *Network Node Processor Installation and Maintenance* manual.

Service Processor and Network Node Processor Cables for the 3746-950

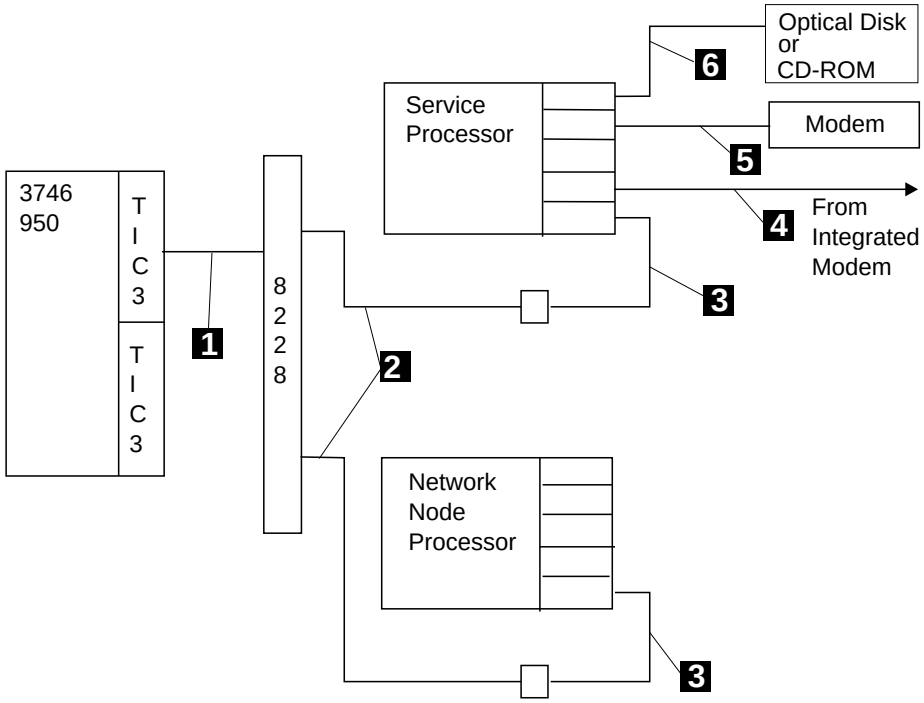


Figure 1-2. Service Processor and Network Node Processor Cables for 3746-950

Notes:

1. For cable **1** refer to “Cable From the 3746-900/950 or any 3745 model A to the 8228” on page 1-3.
2. For cable **2** **3**, **4**, **5**, and **6** refer to the appropriate *Service Processor Installation and Maintenance* or to the *Network Node Processor Installation and Maintenance* manual.

Cable From the 3746-900/950 or any 3745 model A to the 8228

Refer to Figure 1-2 on page 1-2 and Figure 1-3 reference **1** for details.

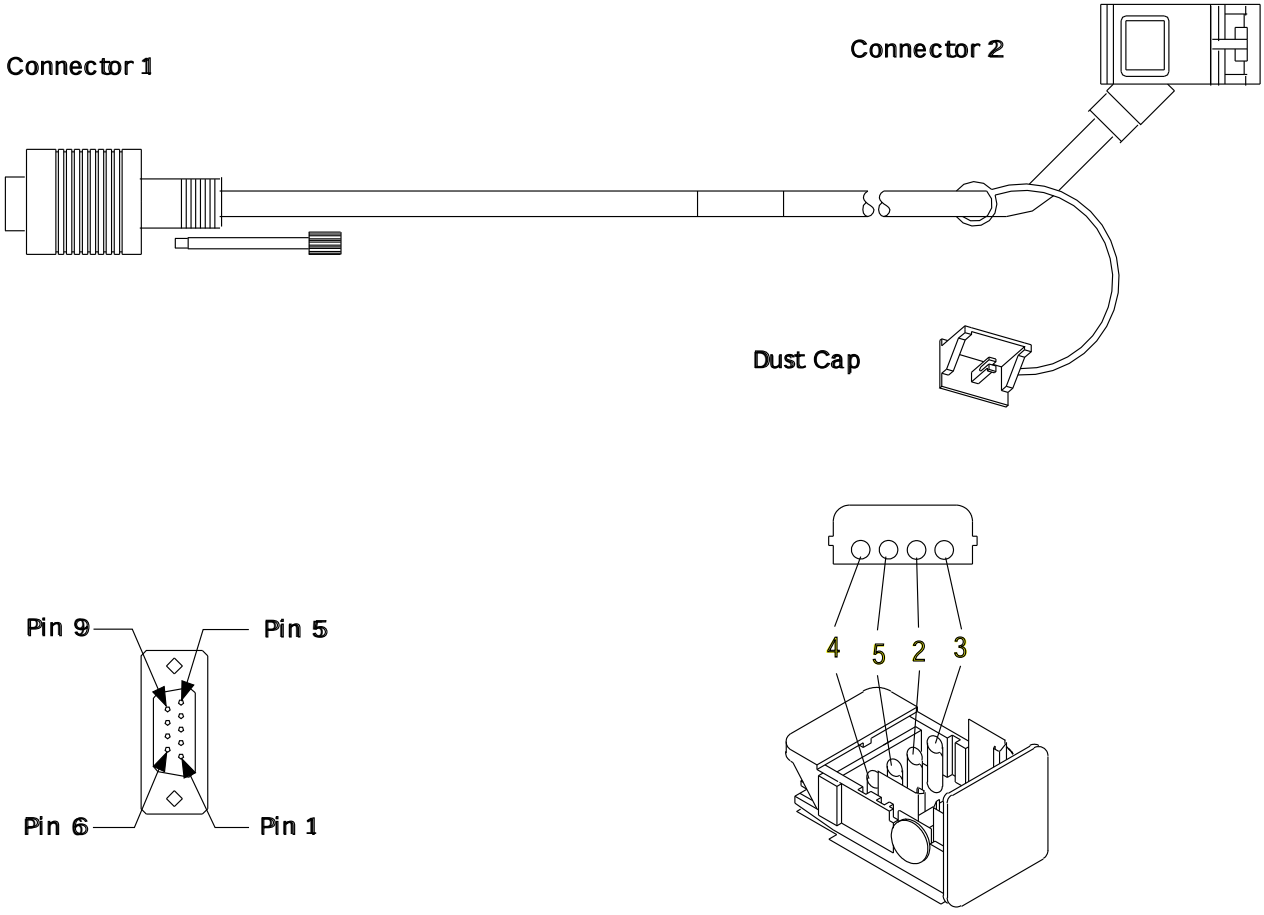


Figure 1-3. LAN Cable

Interchange Circuits

See “Interchange Circuit for Standard LAN Cable” on page 3-3.

Table 1-1. Cable from a 3746-900 or any 3745 model A to a 8228

Cable Type	Length, m (ft)	Cable PN
Standard Fixed for World Trade	9 m (30)	76F9441
Standard Fixed for US only	9 m (30)	76F9440

Chapter 2. Cables for 3746 Models 900 and 950 Features

Ethernet Port Cables

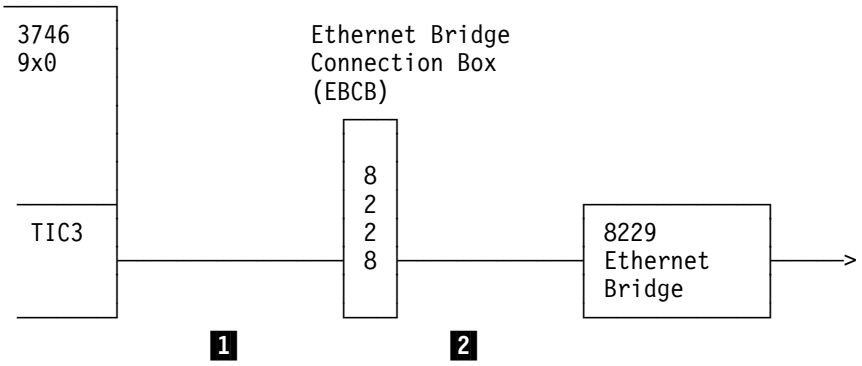


Figure 2-1. Cables between the 3746-900/950 and the Ethernet Bridge

Cable From the 3746-900/950 to the Ethernet Bridge Connection Box (EBCB)

Refer to Figure 2-1 reference **1** and Figure 3-4 on page 3-3 for details.

Table 2-1. Cable from a 3746-900 or any 3745 model A to a 8228

Cable Type	Length, m (ft)	Cable Group	Cable Part Number
Standard Fixed	9 m (30)	Shipped	76F9441

Cable From the Ethernet Bridge Connection Box (EBCB) to the Ethernet Bridge

Refer to Figure 2-1 reference **2** and Figure 3-4 on page 3-3 for details.

Table 2-2. Cable from the Ethernet Bridge Connection Box (8228) to the Ethernet Bridge (8229)

Cable Type	Length, m (ft)	Cable Group	Cable Part Number
Standard Fixed	2.4 m (8)	Shipped	6339098

Controller Expansion Grounding

When installed the controller expansion must be grounded to the premises grouding system using a ground wire provided by IBM.

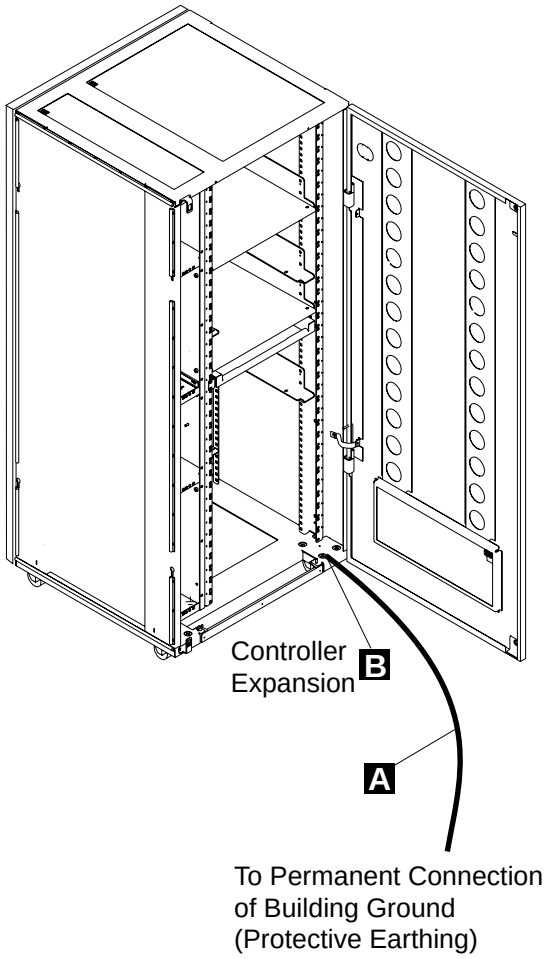


Figure 2-2. Ground Wire Connection on Controller Expansion

A

Table 2-3. Ground Wire for Controller Expansion

Cable Type	Length	Cable PN
Standard Fixed	9 m (30 ft.)	58G5691

B Screw part number 61F4513 and washer part number 1622347.

Grounding of LCB Via a Cable

When the LCB is **not** installed in a 3746-900/950, a controller expansion, or a rack with connection to the premises grouding system a ground wire must be installed to ensure this connection. Refer to Figure 2-3.

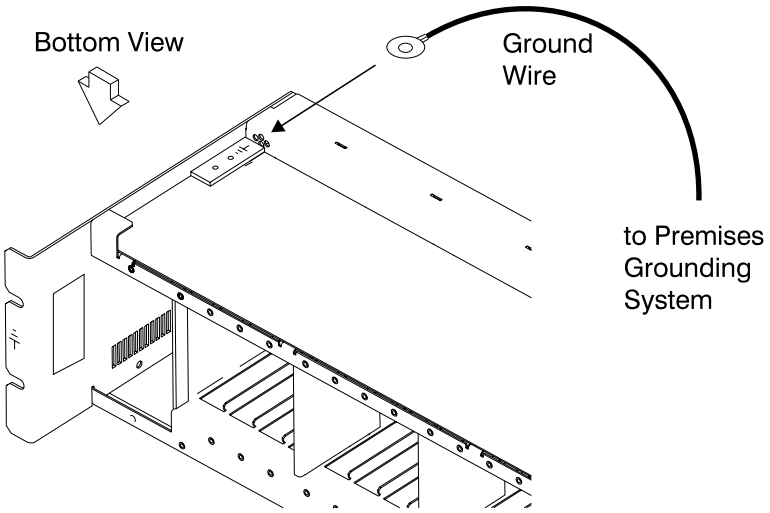


Figure 2-3. LCB Grounding via Ground Wire

IBM does not provide this wire. In order to insure a good grounding this ground wire must made using a wire AWG 12 (minimum 2.5 square millimeter).

Screw: 5 mm of diameter, length from 6 mm to 10 mm (refer to Figure 2-4). **Connection of Ground Wire to LCB**

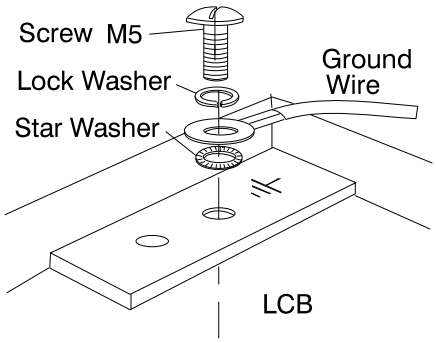


Figure 2-4. Standard Connection

Controller Expansion Unit Power Cables

Special power cables are provided to connect units installed in the controller expansion to the ac outlet distribution box.

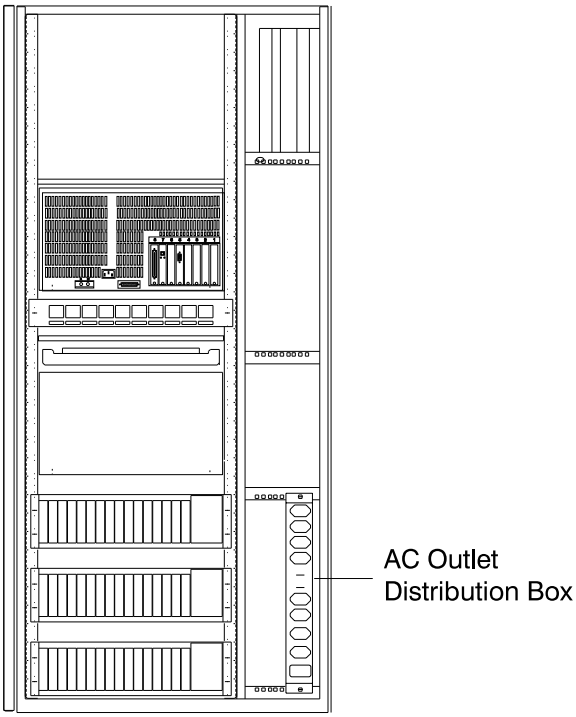


Figure 2-5. Controller Expansion ac Outlet Distribution Box.

Figure 2-6. Power Cable for Units Connected to the ac Outlet Distribution Box

Table 2-4. Power Cable for Units Installed in the Controller Expansion Connected to the ac Outlet Distribution Box

Cable Type	Length	Cable PN
Standard Fixed	2.5 m (8 ft.)	58G5783

Chapter 3. External Cables for 3746 Models 900 and 950

ESCON Cable

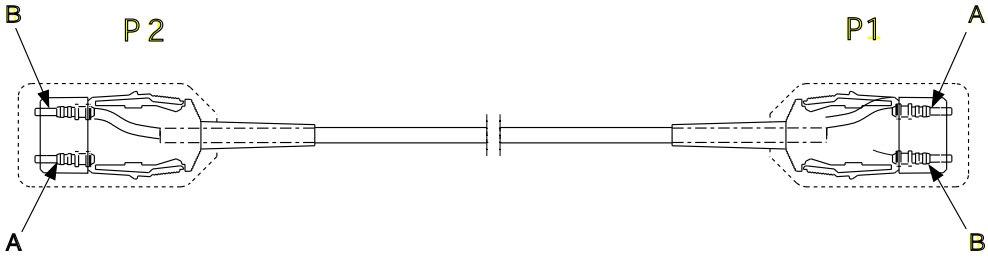


Figure 3-1. ESCON Cable

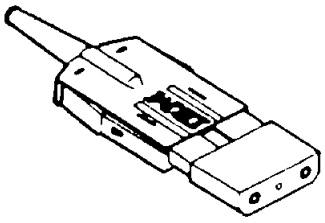


Figure 3-2. Duplex Connector

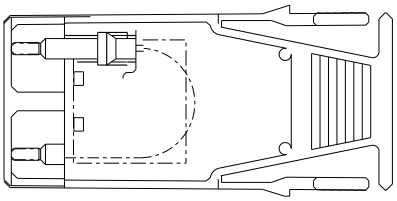


Figure 3-3. ESCP Wrap Plug Part Number 560670

Table 3-1. Fiber Cable Pin Assignment

FROM P1	TO P2	COLOR
A	B	WHITE AND BLACK
B	A	WHITE

Table 3-2. Cable Length Ordering Information for EMEA

Cable PN	Feature Code	Length (Meters/Feet)
74F5412	5501 / 5502	4/12
74F5413	5501 / 5502	7/20
74F5414	5501 / 5502	13/40
74F5415	5501 / 5502	22/70
74F5416	5501 / 5502	31/100
74F9718	5501 / 5502	46/150
74F5417	5501 / 5502	61/200
74F9719	5501 / 5502	77/250
74F9720	5501 / 5502	92/300
74F9721	5501 / 5502	107/350
74F5418	5501 / 5502	122/400
74F5436	5501 / 5502	500/1640 maximum (1)

Note: (1) Length to be specified on purchase order.

Table 3-3. Cable Length Ordering Information for U.S

Cable PN	Feature Code	Length (Meters/Feet)
14F3797	5501 / 5502	4/12
14F3797	5501 / 5502	7/20
14F3797	5501 / 5502	13/40
14F3797	5501 / 5502	22/70
14F3797	5501 / 5502	31/100
14F3797	5501 / 5502	46/150
14F3797	5501 / 5502	61/200
14F3797	5501 / 5502	77/250
14F3797	5501 / 5502	92/300
14F3797	5501 / 5502	107/350
14F3797	5501 / 5502	122/400
14F3797	5501 / 5502	500/1640 maximum (1)

Note: (1) Length to be specified on purchase order.

Local Area Network Cable

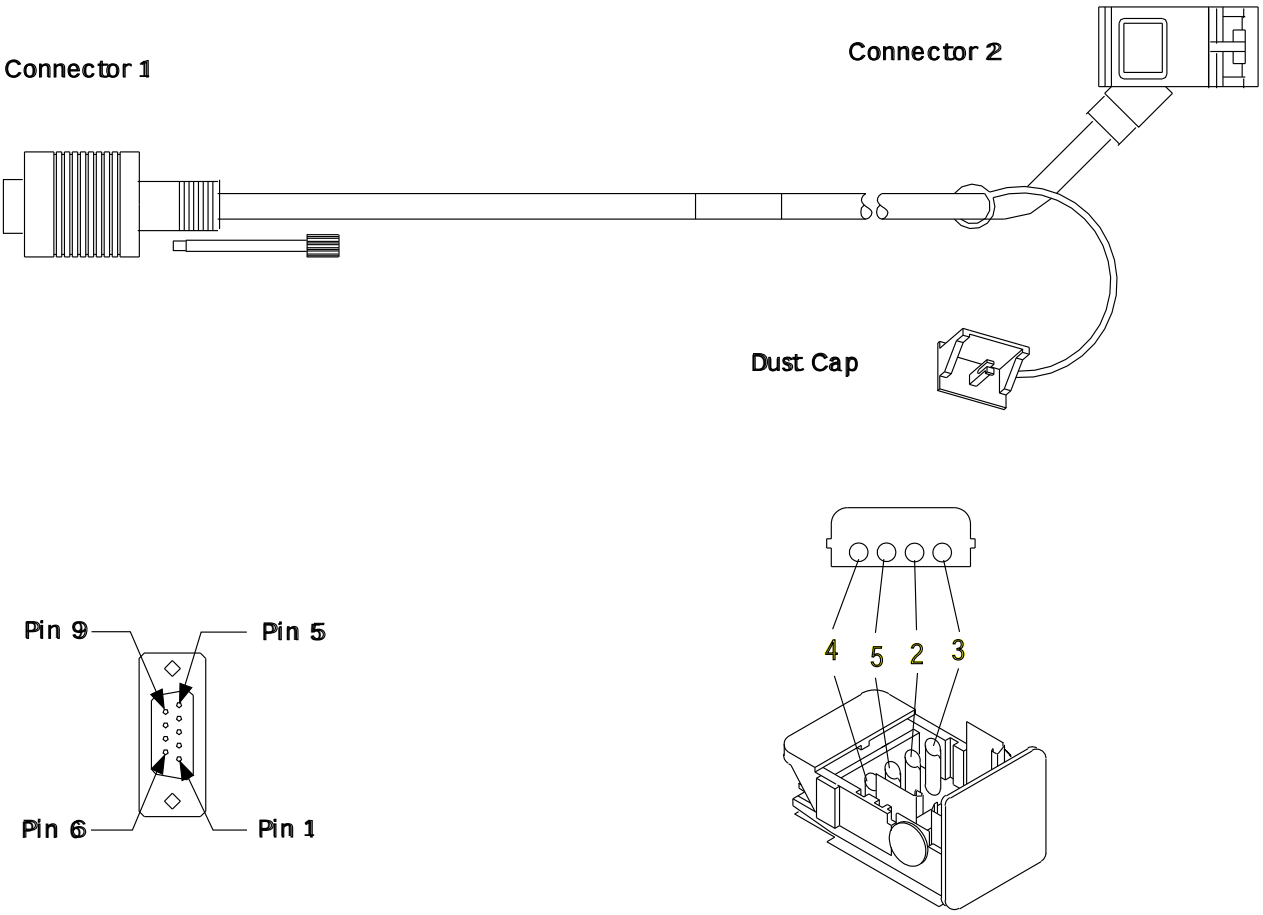


Figure 3-4. LAN Cable

Interchange Circuit for Standard LAN Cable

Table 3-4. LAN Cable Pin Assignment

Wire Nbr	Wire Color	Connector 1 Position	Connector 2 Position
1	SHIELD	GND	SHIELD
2	ORN	9	ORN
3	BLACK	5	BLACK
4	RED	1	RED
5	GREEN	6	GREEN

Table 3-5. Cable Length Ordering Information for EMEA

Cable PN	Feature Code	Length (Meters/Feet)
72F1236	5601	9/30 Fixed length
72F1236	5601	9/30 (max) Custom length
72F1236	5601	44/144 (max) Custom length

Table 3-6. Cable Length Ordering Information for U.S

Cable PN	Feature Code	Length (Meters/Feet)
72F1236	5601	22/70 Fixed length
72F1242	5601	22/70 Plenum Fixed length
72F1236	5601	22/70 (max) Custom length
72F1242	5601	22/70 (max) Plenum Custom length
72F1236	5601	44/144 (max) Custom length
72F1242	5601	44/144 (max) Plenum Custom length

Unshielded Twisted-Pair Cables

Twisted-Pair Connector Pin Assignment

This cable must use the 802.5 standard pin layout.

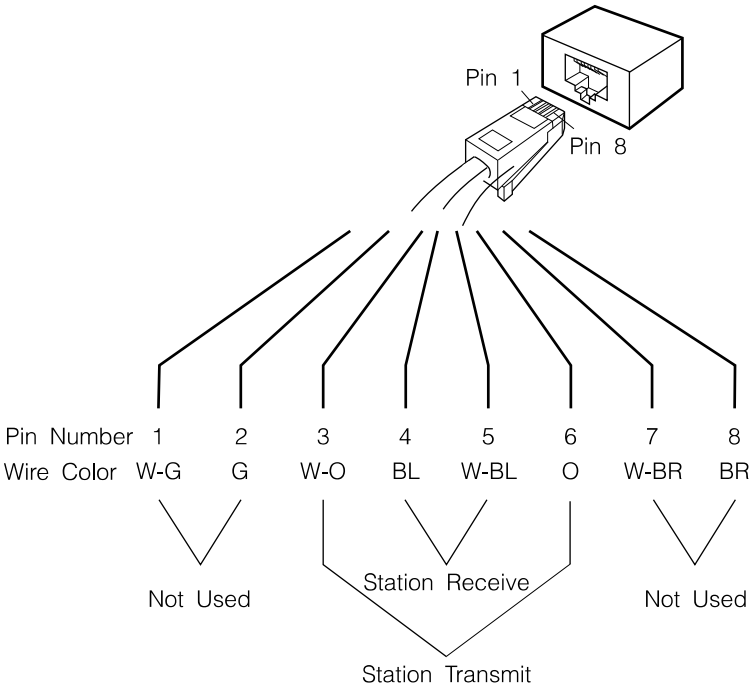


Figure 3-5. Twisted-Pair Connector

Token-Ring UTP Media Filter

The Token-Ring UTP media filter (part number 43G3875) links a 4 and 16Mbps token-ring network using UTP cabling.

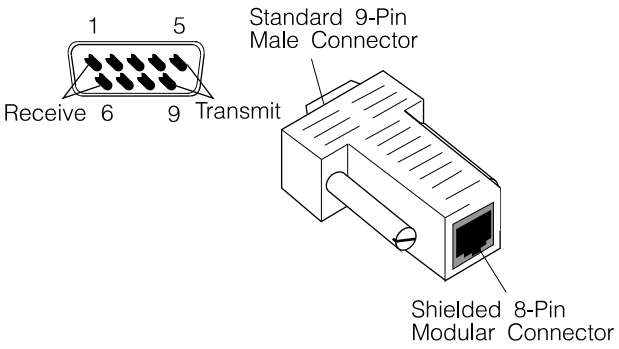


Figure 3-6. IBM Token-Ring UTP Media Filter (Part Number 43G3875)

LIC11

LIC11

LIC11 Interfaces	Description
Number	1
Characteristics	Allows the connection of one pair of Line Connection Boxes (LCBs). which supports up to 30 ports with X.21, V.35, and V.24/EIA-232 interfaces.
Speeds	Maximum port speed on an LCB is 256 kbps.

LIC11 Wrap Plug

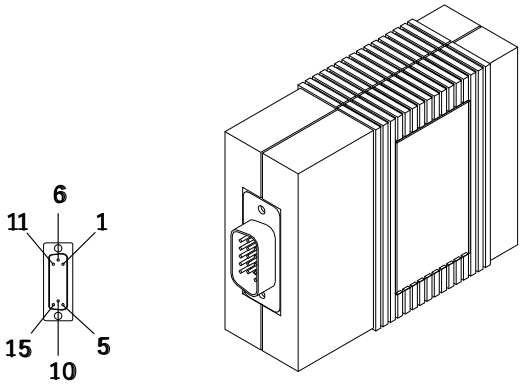


Figure 3-7. LIC11 Wrap Plug (Part Number 58G9425)

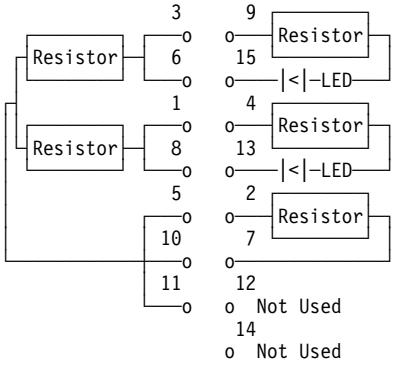
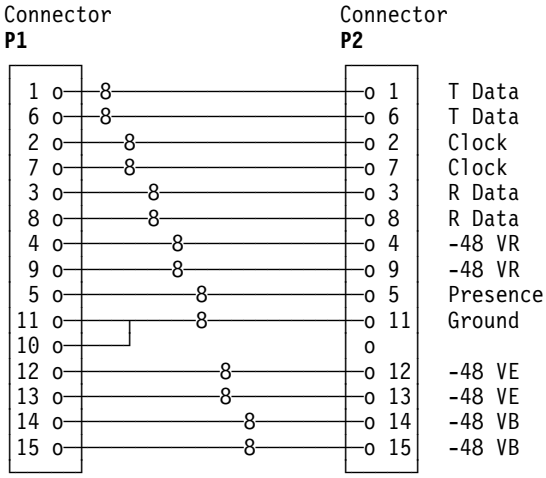


Figure 3-8. LIC11 Wrap Plug Pin Assignment

LIC11 to Line Connection Box Base (LCBB) Cables

Interchange Circuits



Legend: †8– A twisted pair
†8–

Figure 3-9. Interchange Circuits for Low/Medium-Speed Line Attachment Cables

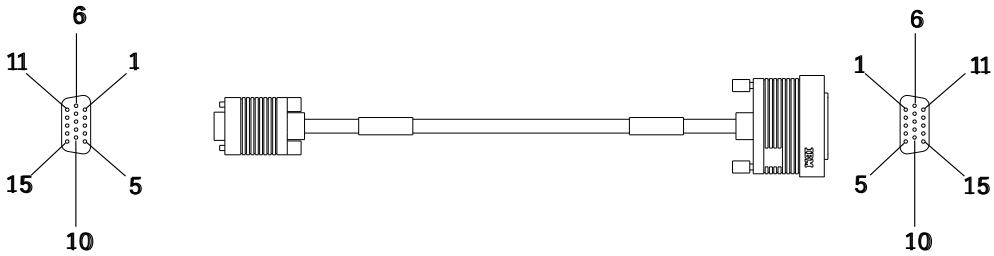


Figure 3-10. LIC11 Low/Medium Speed Attachment Cable

LIC11 Cable List

Table 3-7. LIC11 Low/Medium-Speed Line Attachment Cables

Cable Part Number		Feature Code	Length Meters (Feet)
World Wide	**World Wide Except Canada**		
58G5601 (1) 17G5915 (2) 58G5602 17G5916 (2) 58G5603 17G5917 (2) 58G5604 17G5918 (2) 58G5605 17G5919 (2) 58G5606	58G5705 (1) 58G5717 (2) 58G5706 58G5718 (2) 58G5707 58G5719 (2) 58G5708 58G5720 (2) 58G5709 58G5721 (2) 58G5710	9913 (1) 9715 (3) 9714 (3) 9717 (3) 9716 (3) 5219 5218 5221 5220 5223 5222	1.3 (4) 7 (23) 7 (23) 15 (50) 15 (50) 35 (115) 35 (115) 70 (230) 70 (230) 105 (345) 105 (345)

Notes:

1. Cable from LIC11 to LCBB installed in the 3746-900 frame and identified by a 'specify code'.
2. Plenum Cable for U.S and Canada only.
3. This code is a specify code.

Line Connection Box Base to Line Connection Box Expansion Cable

Interchange Circuits

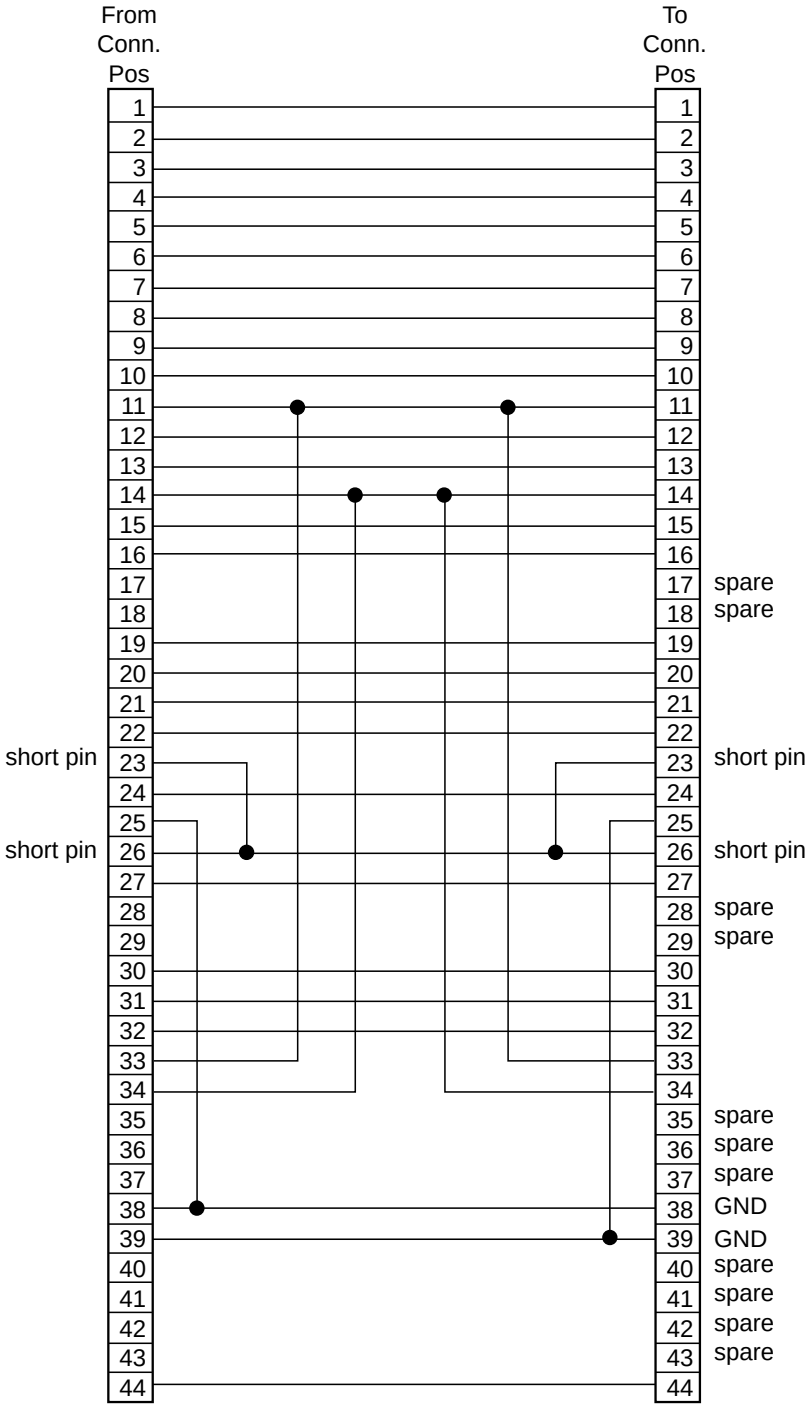


Figure 3-11. Interchange Circuits for LCBB-to-LCBE Cable (PN 58G5700)

Note: This cable is 35 cm (1.15 feet) long.

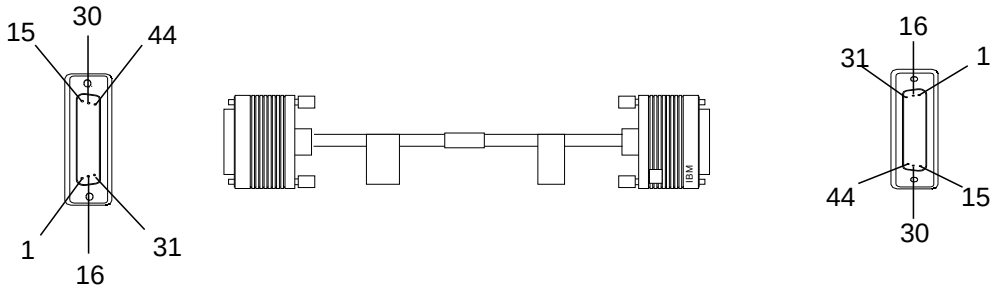


Figure 3-12. LCBB-to-LCBE Cable

Active Remote Connector (ARC) and Cables on 3746 Models 900 and 950

Two main Models of ARC can be installed on the 3746-950

- ARC model A (ARC with an attached cable, refer to “Active Remote Connector (ARC) Assembly A” on page 3-12).
- ARC model B (ARC with a detachable cable, refer to “Active Remote Connector Assembly B and Cables List” on page 3-26).

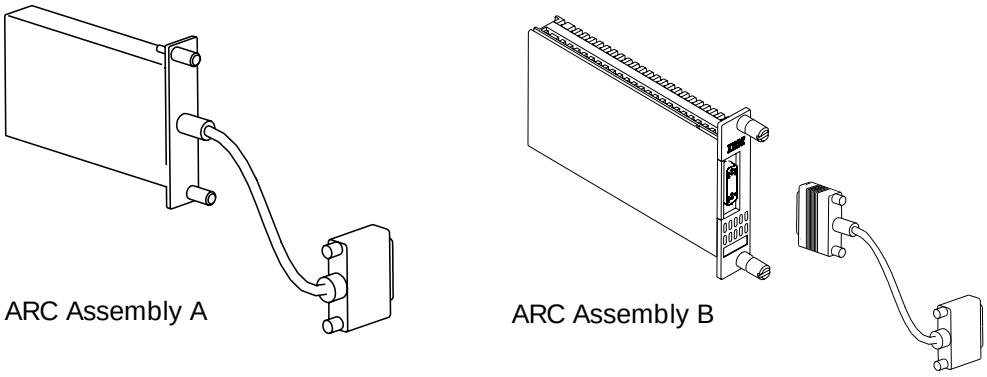


Figure 3-13. ARC Assembly A and B

Active Remote Connector (ARC) Assembly A

Table 3-8. Active Remote Connector (ARC) Assembly A

ARC Type	ARC Name	Feature Code	Length m (ft)	Wrap Plug
ARC V.24 DTE	ARC1B	6400	15 (50)	61F4523
ARC V.24 DCE	ARC1A1 ARC1A2	6405 6415	5 (16) 12 (40)	61F4522 61F4522
ARC V.35 DTE (see Note 1)	ARC3B	6500	15 (50)	61F4527
ARC V.35 DCE (see Note 2)	ARC3A1 ARC3A2	6505 6515	5 (16) 15 (50)	61F4526 61F4526
ARC X.21 DTE	ARC4B	6600	15 (50)	61F4530
ARC X.21 DCE	ARC4A1 ARC4A2	6605 6615	5 (16) 15 (50)	61F4529 61F4529
ARC X.21 DCE Transfix	ARC4A3 ARC4A4	6630 6635	5 (16) 15 (50)	61F4529 61F4529
ARC/3745 V.24 DTE (see Note 3)	ARC1D	**(NLP)**	5 (16)	61F4525
ARC/3745 V.24 DCE (see Note 3)	ARC1C	6485	5 (16)	61F4525
ARC/3745 V.35 DTE (see Note 3)	ARC3D	**(NLP)**	5 (16)	61F4578
ARC/3745 V.35 DCE (see Note 3)	ARC3C	6585	5 (16)	61F4528
ARC/3745 X.21 DTE (see Note 3)	ARC4D	**(NLP)**	5 (16)	65X8927
ARC/3745 X.21 DCE (see Note 3)	ARC4C	6625	5 (16)	65X8927

Note:

1. When connected to a **French DTE**, connect the adapter (PN 65X9899) between the cable and the DTE.
2. When connected to a **French DCE**, connect the adapter (PN 1749352) between the cable and the DCE.
3. Connect these cables to the 3745 cables according to the ARC type. If 3745 RPQ plenum cables must be connected, see: *Migration and Planning Guide*, GA33-0183

Note: (NLP) No longer provided.

ARC V.24 Direct Attachment (ARC1B)

Table 3-9. ARC V24 Direct Attachment Cable Pin Assignments

Wire Number	Signal Name	Connector Position
1	XMIT DATA	2
2	RCVE DATA	3
3	DSRWRAP	25
4	REQ TO SEND	4
4	RFS	5
5	CARRIER DETECTOR	8
6	DTR / TI	
7	CLKWRAP	14
8	XMIT CLOCK	15
8	RCVE CLOCK	17
9	S GND	7
10	DTR/DSR	6/20

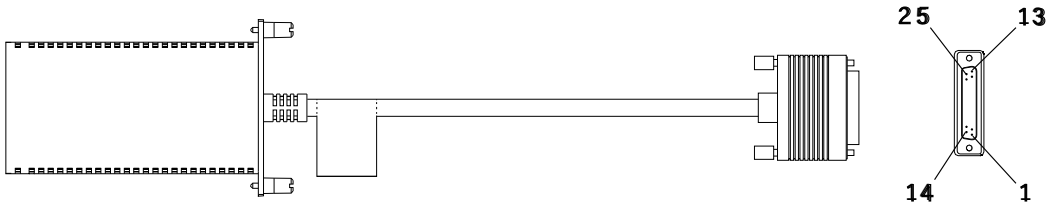


Figure 3-14. ARC/Cable V.24 Direct Attachment (ARC1B)

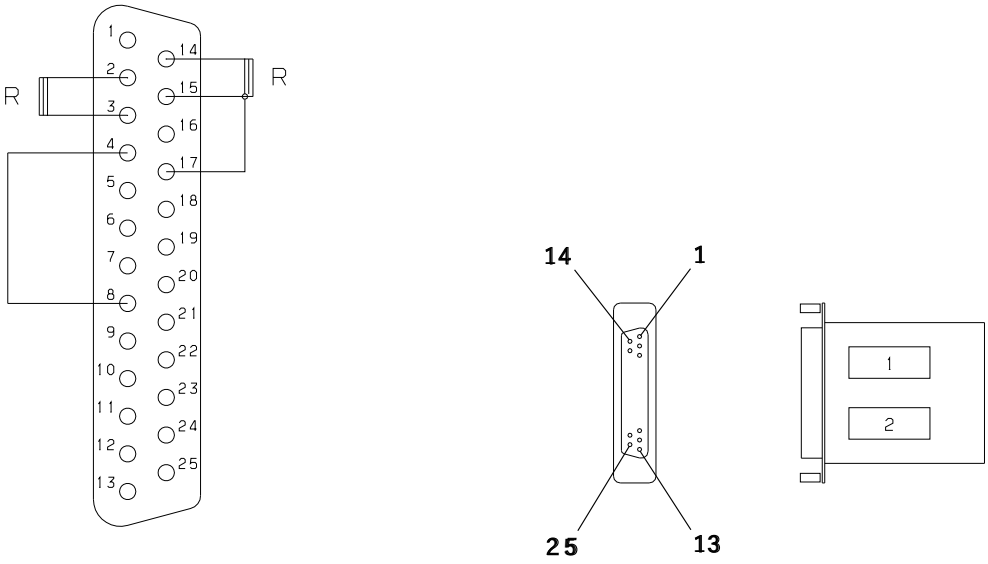


Figure 3-15. Wrap Plug for ARC1B (Part Number 61F4523)

ARC V.24 DCE (ARC1A1 and ARC1A2)

Table 3-10. ARC V24 DCE Cable Pin Assignments

Wire Number	Signal Name	Connector Position
1	XMIT CLOCK	15
2	S GND	7
3	RCVE CLOCK	17
4		
5	RCVE DATA	3
6	XMIT DATA	2
7	CALL INDIC	22
8	DATA SET READY	6
9	R F S	5
10	TEST INDICATOR	25
11	CARRIER DETECTOR	8
12	LOCAL LOOP BACK	18
13	DATA TERM READY	20
14	DATA RATE SEL	23
15	REQ TO SEND	4
16	NEW SYNCH	11 and 14
17	REM LOOP BACK	21

Figure 3-16. ARC/Cable V.24 DCE (ARC1A1 and ARC1A2)

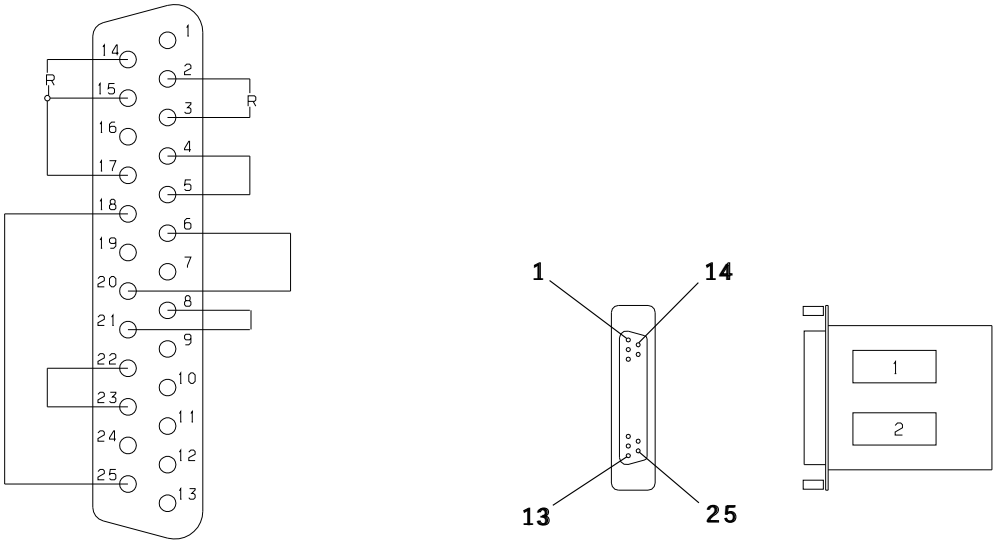


Figure 3-17. Wrap Plug for ARC1A1 and ARC1A2 (Part Number 61F4522)

ARC V.35 Direct Attachment (ARC3B)

Table 3-11. ARC V.35 Direct Attachment Cable Pin Assignments

Wire Number	Signal Name	Connector Position
1	+104 RA	R
T1	-104 RB	T
2	+115 RCLK A	V
T2	-115 RCLK B	X
3	+114 TCLK A	Y
T3	-114 TCLK B	AA
4	+103 TA	P
T4	-103 TB	S
5	+TCLKWRAP	HH
T5	-TCLKWRAP	KK
11	-RCLWRAP	LL
12	+RCLWRAP	JJ
13	109 RLSD	F
14	102 GND	B
15	105 RTS	C
16	106 RFS	D
17	107 DSR/TI	
18	DSRWRAP	NN
19	DTR/DSR	E/H

Figure 3-18. ARC/Cable V.35 Direct Attachment (ARC3B)

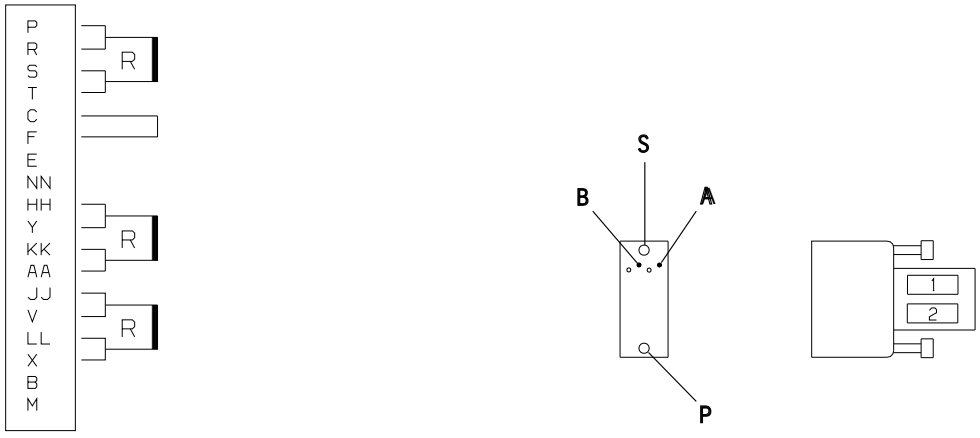


Figure 3-19. Wrap Plug for ARC3B (Part Number 61F4527)

ARC V.35 DCE (ARC3A1 and ARC3A2)

Table 3-12. ARC V.35 DCE

Wire Number	Signal Name	Connector Position
1	+104 RA	R
T1	-104 RB	T
2	+115 RCLK A	V
T2	-115 RCLK B	X
3	+114 TCLK A	Y
T3	-114 TCLK B	AA
4	+103 TA	P
T4	-103 TB	S
5	+CLKWRAP	HH
T5	-CLKWRAP	KK
11	+106 RSF	O
12	142 T1	NN
13	141 RLOOP	K
14	109 RLSD	F
15	140 MODEM TEST	N
16	102 GND	B
17	106 RT3	C
18	108 DTR	H
19	107 DSR	E

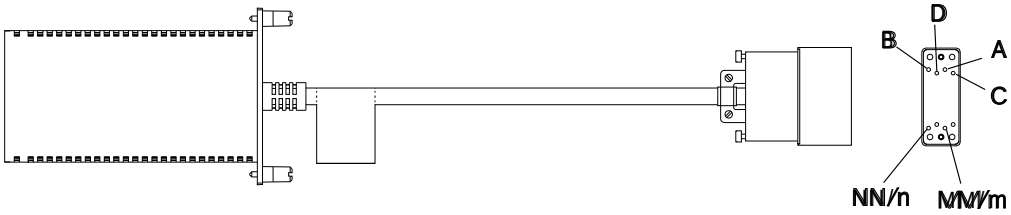


Figure 3-20. ARC/Cable V.35 DCE (ARC3A1 and ARC3A2)

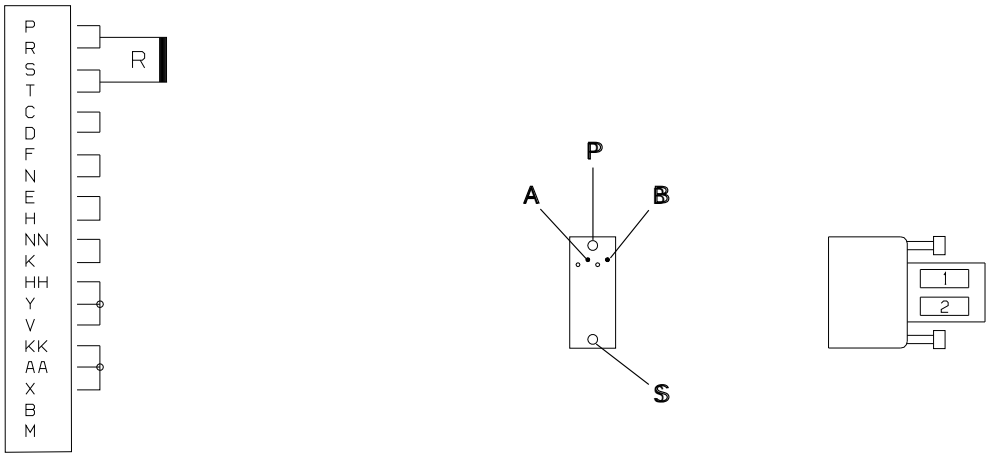


Figure 3-21. Wrap Plug for ARC3A1 and ARC3A2 (Part Number 61F4526)

ARC X.21 Direct Attachment (ARC4B)

Table 3-13. ARC X.21 Direct Attachment Cable Pin Assignments

Wire Number	Signal Name	Connector Position
1	RA (+R)	4
T1	RB (-R)	11
2	IA (+I)	5
T2	IB (-I)	12
3	SA (+S)	6
T3	SB (-S)	13
4	TA (+T)	2
T4	TB (-T)	9
5	CA (+C)	3
T5	CB (-C)	10
6	XA	7
T6	XB	14
7	GND	8
T7	IDI	15

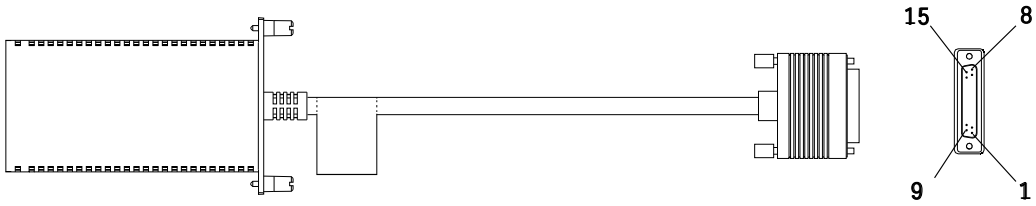


Figure 3-22. ARC/Cable X.21 Direct Attachment (ARC4B)

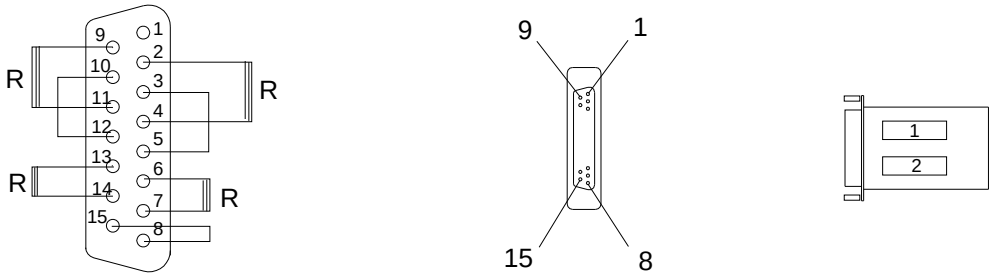


Figure 3-23. Wrap Plug for ARC4B (Part Number 61F4530)

ARC X.21 DCE (ARC4A1 and ARC4A2)

Table 3-14. ARC X.21 DCE Cable Pin Assignments for ARC 4A1 and 4A2

Wire Number	Signal Name	Connector Position
1	RA (+R)	4
T1	RB (-R)	11
2	IA (+I)	5
T2	IB (-I)	12
3	SA (+S)	6
T3	SB (-S)	13
4	TA (+T)	2
T4	TB (-T)	9
5	CA (+C)	3
T5	CB (-C)	10
6	XA	7
T6	XB	14
7	GND	8
T7	IDI	15

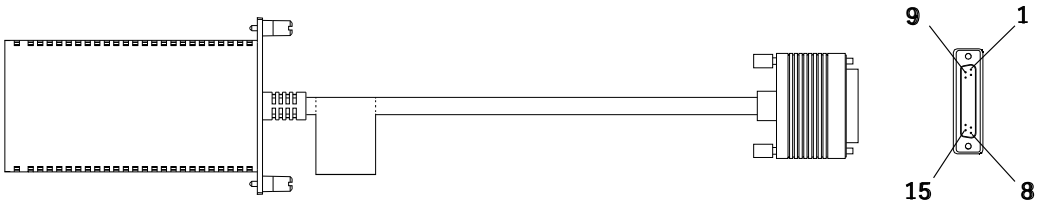


Figure 3-24. ARC/Cable X.21 DCE (ARC4A1 and ARC4A2)

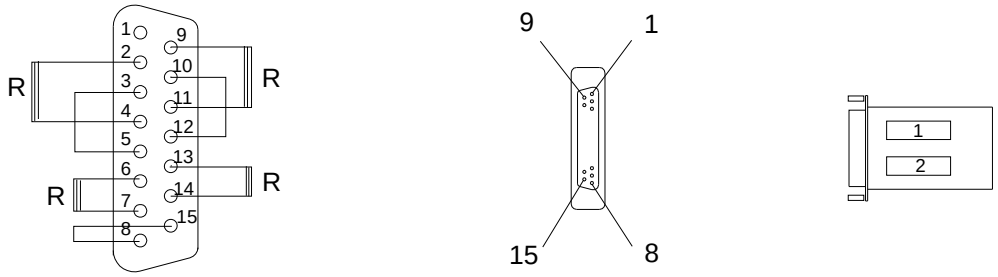


Figure 3-25. Wrap Plug for ARC4A1 and ARC4A2 (Part Number 61F4529)

ARC X.21 DCE (ARC4A3 and ARC4A4 Transfix, France Only)

Table 3-15. ARC X.21 DCE Cable Pin Assignments for ARC4A3 and ARC4A4

Wire Number	Signal Name	Connector Position
1	RA (+R)	4
T1	RB (-R)	11
2	SA (+S)	6
T2	SB (-S)	13
3	TA (+T)	2
T3	TB (-T)	9
4	XA	7
T4	XB	14
5	GND	8
T5	IDI	15

Figure 3-26. ARC/Cable X.21 DCE (ARC4A3 and ARC4A4)

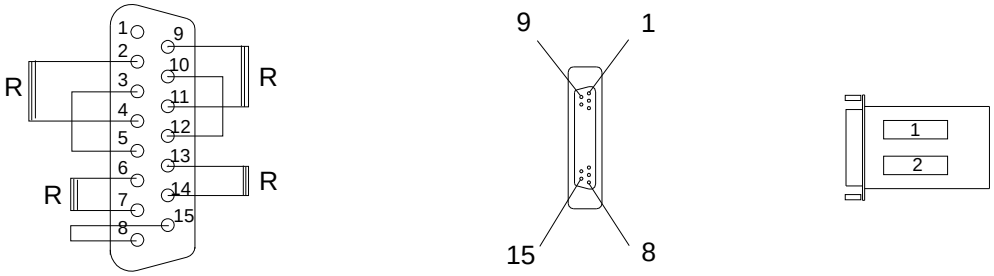


Figure 3-27. Wrap Plug for ARC4A3 and ARC4A4 (Part Number 61F4529)

ARC/3745 V.24 Direct Attachment (ARC1D)

Note: This cable is no longer provided.

Table 3-16. ARC/3745 V.24 Direct Attachment

Wire Number	Signal Name	Connector Position
1	XMIT DATA	14
2	RCVE DATA	16
3	REQ TO SEND	18
4	R F S	17
5	DSR	20
6	DTR	2
7	NEW SYNCH	9
8	XMIT CLOCK	22
9	RCVE CLOCK	25
10	S GND	7 and 15
11	ID 0	6
12	ID 1	8
13	ID 2	21

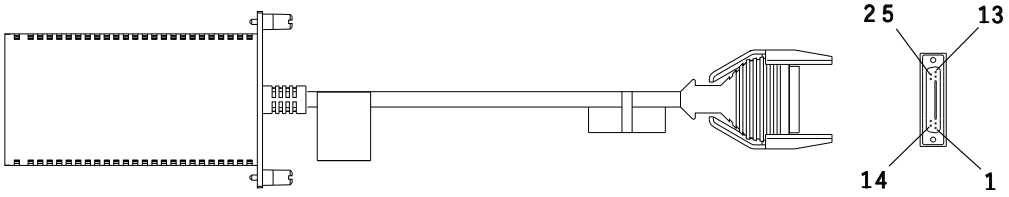


Figure 3-28. ARC/Cable 3745 V.24 DTE (ARC1D)

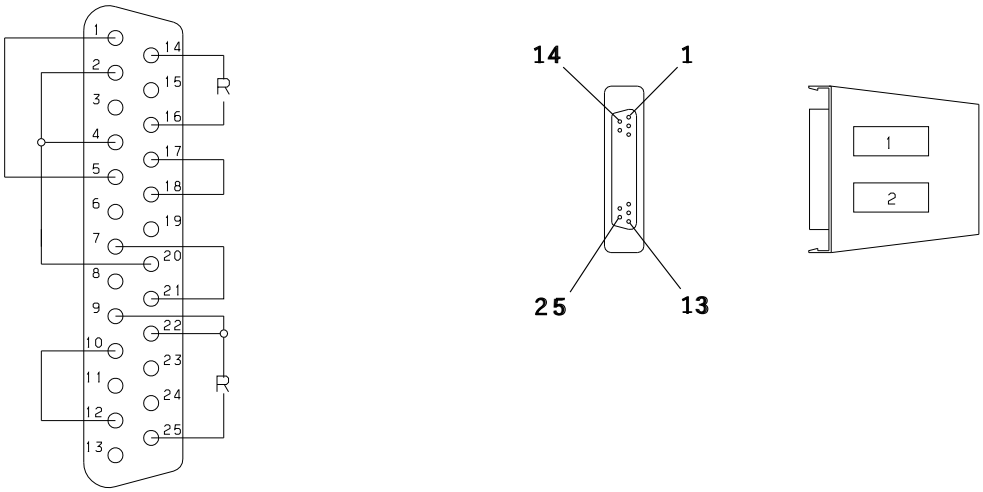


Figure 3-29. Wrap Plug for ARC1D (Part Number 61F4525)

ARC/3745 V.24 DCE (ARC1C)

Table 3-17. ARC V.24 DCE

Wire Number	Signal Name	Connector Position
1	XMIT CLOCK	22
2	S GND	7 and 15
3	RCVE CLOCK	25
4	ID 0	6
5	XMIT DATA	14
6	ID 1	8
7	RCVE DATA	16
8	ID 2	21
9	DATA SET READY	20
10	CALL INDICATOR	4
11	CLEAR TO SEND	17
12	TEST INDICATOR	12
13	CARRIER DETECTOR	1
14	LOCAL LOOP BACK	10
15	DATA TERM READY	2
16	DATA RATE SEL	5
17	REQ TO SENDTOR	18
18	NEW SYNCH	9

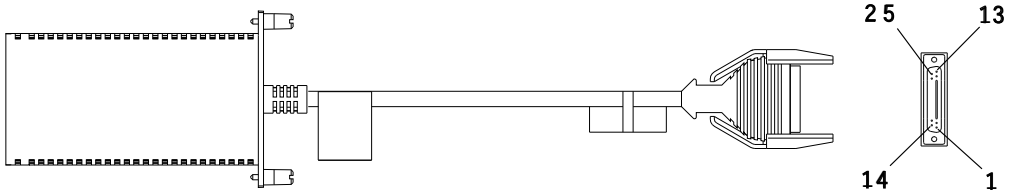


Figure 3-30. ARC/Cable 3745 V.24 DCE (ARC1C)

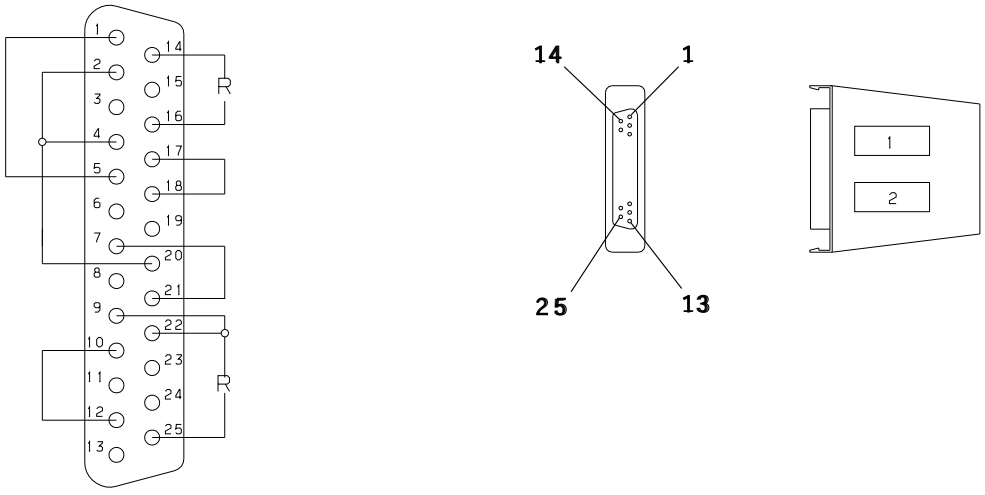


Figure 3-31. Wrap Plug for ARC1C (Part Number 61F4525)

ARC/3745 V.35 Direct Attachment (ARC3D)

Note: This cable is no longer provided.

Table 3-18. ARC/3745 V.35 Direct Attachment

Wire Number	Signal Name	Connector Position
1	+104 RA	14
T1	-104 RB	16
2	+115 RCLK A	24
T2	-115 RCLK B	25
3	+114 TCLK A	4
T3	-114 TCLK B	5
4	+103 TA	22
T4	-103 TB	9
5	+RCLKWRAP	1
T5	-RCLKWRAP	11
6	+TCLKWRAP	3
T6	-TCLKWRAP	13
13	RTS	18
14	DTR	2
15	DSR	20
16	R F S	17
17	S GND	7 and 15
18	ID0	6
19	ID1	8
20	ID2	21

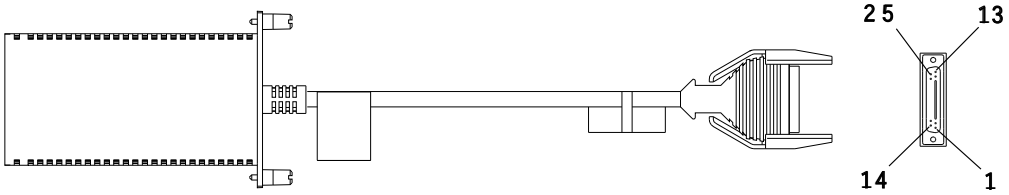


Figure 3-32. ARC/Cable 3745 V.35 Direct Attachment (ARC3D)

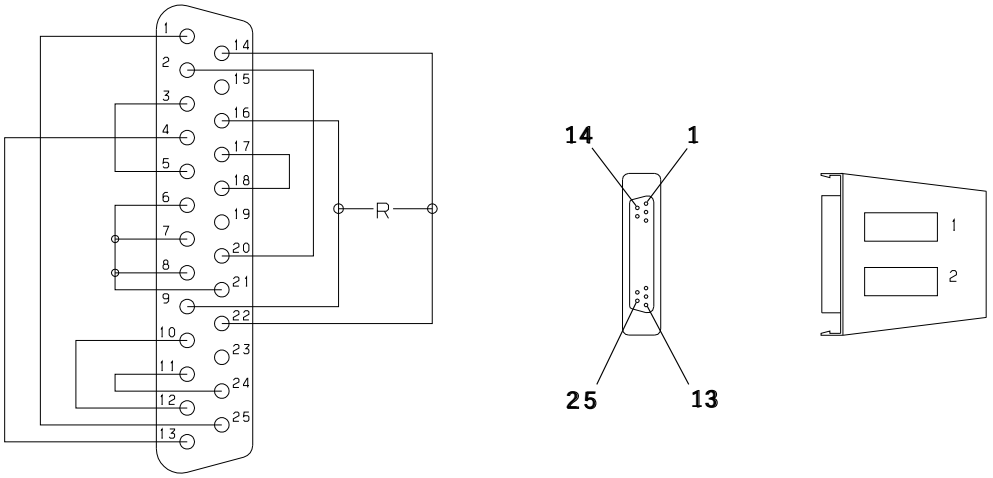


Figure 3-33. Wrap Plug for ARC3D (Part Number 61F4578)

ARC/3745 V.35 DCE (ARC3C)

Table 3-19. ARC/3745 V.35 DCE

Wire Number	Signal Name	Connector Position
1	+104 RA	22
T1	-104 RB	9
2	+115 RCLK A	25
T2	-115 RCLK B	24
3	+114 TCLK A	5
T3	-114 TCLK B	4
4	+103 TA	14
T4	-103 TB	16
5	+TCLKWRAP	3
T5	-TCLKWRAP	13
11	105 RTS	18
12	108 DTR	2
13	107 DSR	20
14	CBL ID0	6
15	109 RLS0	1
16	CBL ID1	8
17	106 RFS	17
18	CBL ID2	21
19	102 GND	7 and 15

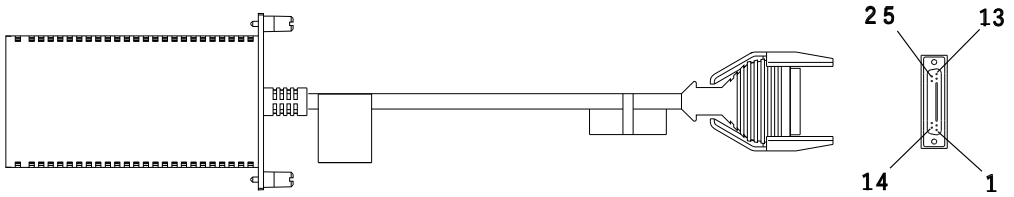


Figure 3-34. ARC/Cable 3745 V.35 DCE (ARC3C)

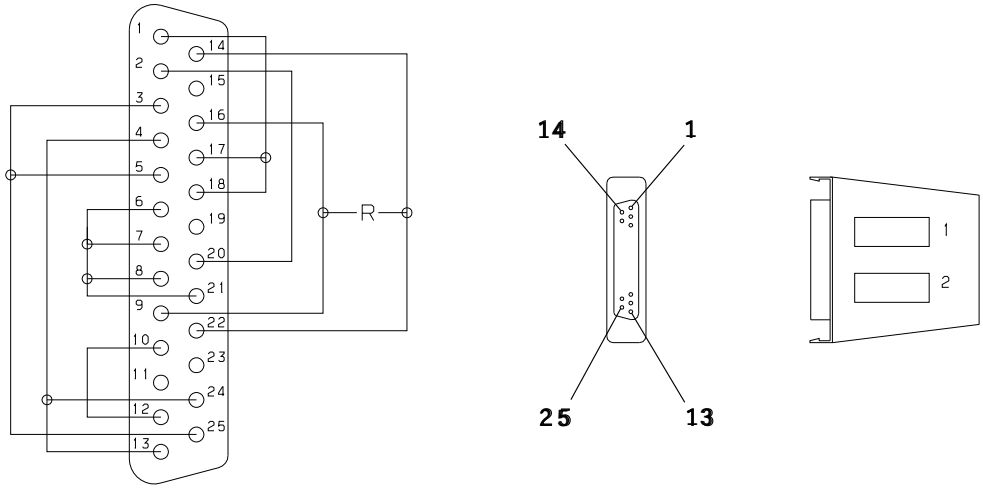


Figure 3-35. Wrap Plug for ARC3C (Part Number 61F4528)

ARC/3745 X.21 Direct Attachment (ARC4D)

Note: This cable is no longer provided.

Table 3-20. ARC/3745 X.21 Direct Attachment (ARC4D)

Wire Number	Signal Name	Connector Position
1	RA (+R)	14
T1	RB (-R)	2
2	IA (+I)	18
T2	IB (-I)	5
3	SA (+S)	25
T3	SB (-S)	12
4	TA (+T)	16
T4	TB (-T)	4
5	CA (+C)	17
T5	CB (-C)	1
6	XA	22
T6	XB	10
7	GND	7 and 15
8	ID0	6
9	ID1	8
10	ID2	21

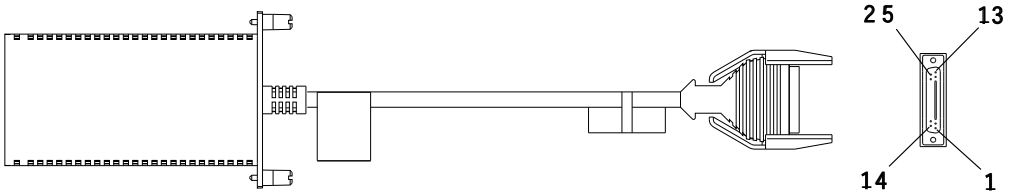


Figure 3-36. ARC/Cable 3745 X.21 DTE (ARC4D)

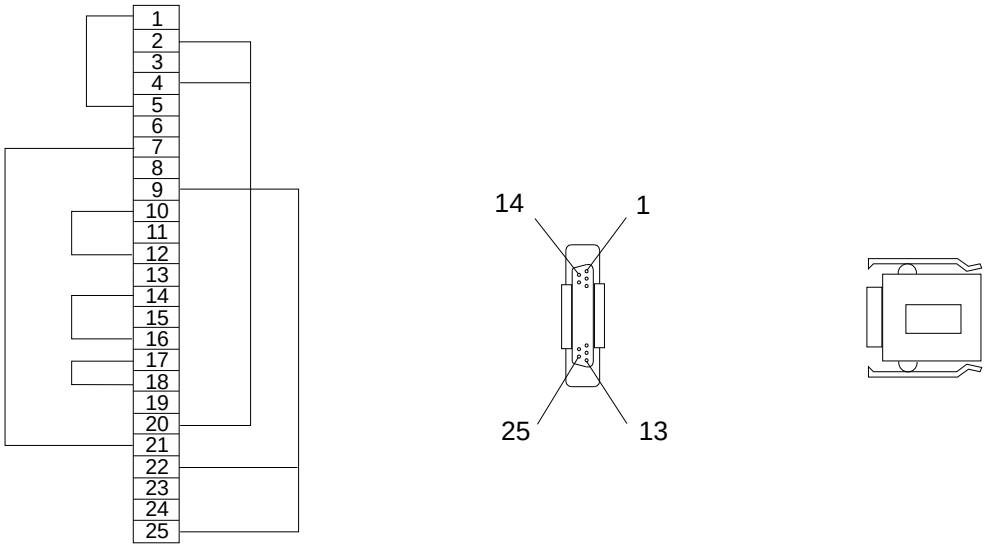


Figure 3-37. Wrap Plug for ARC4D (Part Number 65X8927)

ARC/3745 X.21 DCE (ARC4C)

Table 3-21. ARC/3745 X.21 DCE (ARC4C)

Wire Number	Signal Name	Connector Position
1	TA (+T)	14
T1	TB (-T)	2
2	RA (+R)	16
T2	RB (-R)	4
3	IA (+I)	17
T3	IB (-I)	1
4	CA (+C)	18
T4	CB (-C)	5
5	SA (+S)	22
T5	SB (-S)	10
6	XA	25
T6	XB	12
7	GND	7 and 15
8	ID0	6
9	ID1	8
10	ID2	21

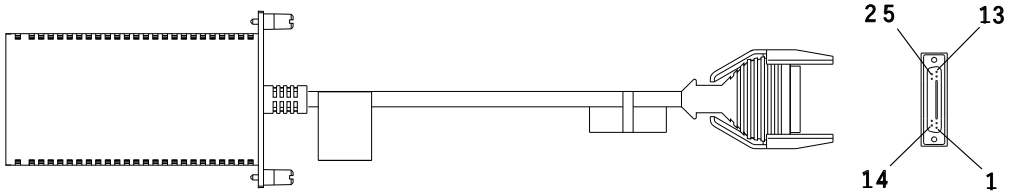


Figure 3-38. ARC/Cable 3745 X.21 DCE (ARC4C)

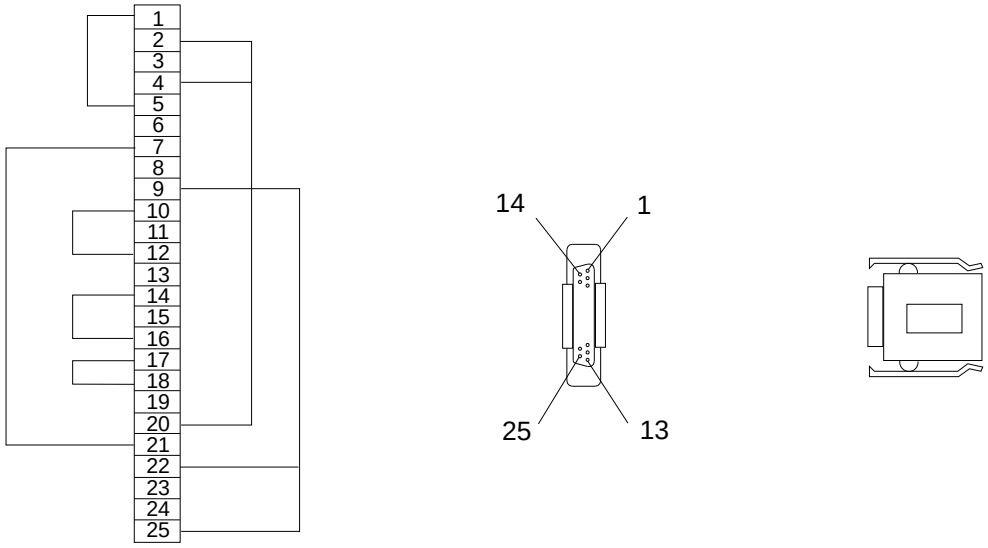


Figure 3-39. Wrap Plug for ARC4C (Part Number 65X8927)

Active Remote Connector Assembly B and Cables List

Active Remote Connector (ARC) Assembly B with Cables

Table 3-22. ARC V.24 and Standard Cables

ARC Type	To	ARC Name	Length m (ft)	Feature Code
V.24 V.24 V.24 V.24	DCE DCE DCE DCE	ARC1A0	1.2 (4) 2.4 (8) 5 (17) 12 (40)	6406 6404 6405 6415
V.24	DTE	ARC1B0	15 (50)	6400
V.24 (3745)	DCE		5 (17)	6485

Table 3-23. ARC V.35 and Standard Cables

ARC Type	To	ARC Name	Length m (ft)	Feature Code
V.35 (see Note 1) V.35 (see Note 1) V.35 (see Note 1) V.35 (see Note 1)	DCE DCE DCE DCE	ARC3A0	1.2 (4) 2.4 (8) 5 (17) 15 (50)	6506 6504 6505 6515
V.35 (see Note 2)	DTE	ARC3B0	15 (50)	6500
V.35 (3745)	DCE		5 (17)	6585

Note:

1. When connected to a **French DTE**, connect the adapter (PN 65X9899) between the cable and the DTE.
2. When connected to a **French DCE**, connect the adapter (PN 1749352) between the cable and the DCE.

Table 3-24. ARC X.21 and Standard Cables

ARC Type	To	ARC Name	Length m (ft)	Feature Code
X.21 X.21 X.21 X.21	DCE DCE DCE DCE	ARC4A0	1.2 (4) 2.4 (8) 5 (17) 15 (50)	6606 6604 6605 6615
X.21	DTE	ARC4B0	15 (50)	6600
X.21 (Transfix)	DCE	ARC4E0	15 (50)	6635
X.21 (3745)	DCE		5 (17)	6625

Cables for ARC Assembly B

Table 3-25. Standard Cables for ARC

Cable Type	To	Length m (ft)	Current Part Number	Old Part Number (See Note 1)
V.24	DCE	.6 (2)	(NLP)	58G5610
V.24	DCE	1.2 (4)	02L3280	58G5611
V.24	DCE	2.4 (8)	02L3281	58G5612
V.24	DCE	5 (17)	02L3281	58G5613
V.24	DCE	10 (33)	(NLP)	58G5614
V.24	DCE	12 (40)	02L3283	58G5615
V.24	DTE	15 (50)	02L3284	58G5616
V.24 (3745)	DCE	.6 (2)	(NLP)	58G5640
V.24 (3745)	DCE	1.2 (4)	(NLP)	58G5641
V.24 (3745)	DCE	2.4 (8)	(NLP)	58G5642
V.24 (3745)	DCE	5 (17)	58G5643	58G5643
V.24 (3745)	DTE	5 (17)	(NLP)	58G5644
V.35	DCE	.6 (2)	(NLP)	58G5620
V.35	DCE	1.2 (4)	02L3285	58G5621
V.35	DCE	2.4 (8)	02L3286	58G5622
V.35	DCE	5 (17)	02L3287	58G5623
V.35	DCE	10 (33)	(NLP)	58G5624
V.35	DCE	15 (50)	02L3288	58G5625
V.35	DTE	15 (50)	02L3289	58G5626
V.35 (3745)	DCE	.6 (2)	(NLP)	58G5645
V.35 (3745)	DCE	1.2 (4)	(NLP)	58G5646
V.35 (3745)	DCE	2.4 (8)	(NLP)	58G5647
V.35 (3745)	DCE	5 (17)	58G5648	58G5648
V.35 (3745)	DTE	5 (17)	(NLP)	58G5649
X.21	DCE	.6 (2)	(NLP)	58G5630
X.21	DCE	1.2 (4)	02L3290	58G5631
X.21	DCE	2.4 (8)	02L3291	58G5632
X.21	DCE	5 (17)	02L3292	58G5633
X.21	DCE	10 (33)	(NLP)	58G5634
X.21	DCE	15 (50)	02L3293	58G5635
X.21	DTE	15 (50)	02L3294	58G5636
X.21 (Transfix)	DCE	5 (17)	(NLP)	58G5637
X.21 (Transfix)	DCE	15 (50)	02L3295	58G5638
X.21 (3745)	DTE	5 (17)	(NLP)	58G5654
X.21 (3745)	DCE	.6 (2)	(NLP)	58G5650
X.21 (3745)	DCE	1.2 (4)	(NLP)	58G5651
X.21 (3745)	DCE	2.4 (8)	(NLP)	58G5652
X.21 (3745)	DCE	5 (17)	56G5653	58G5653

Notes:

1. Old cables can be used but not ordered for 3746-9x0.
2. NLP: This cable is no longer provided.

Front ARC Assembly B

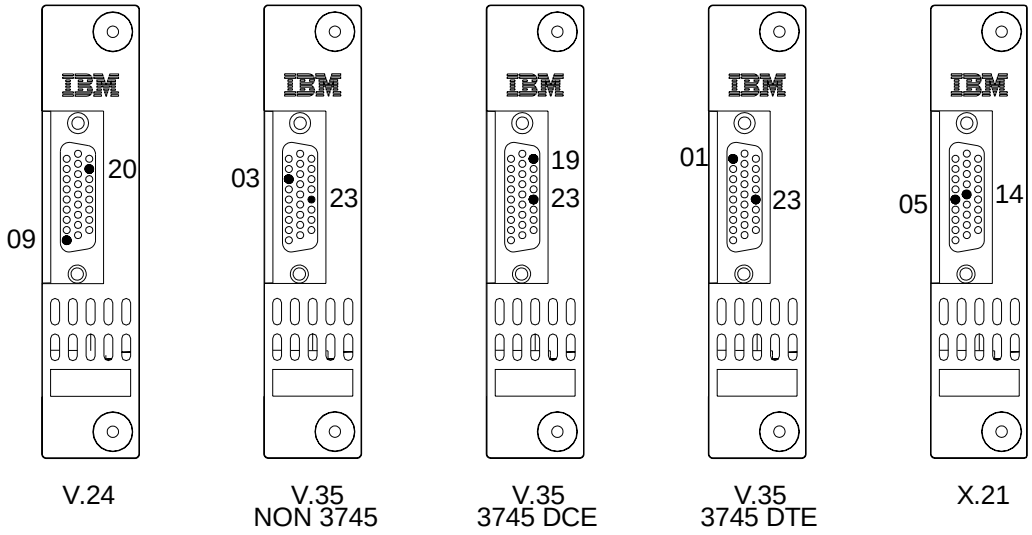


Figure 3-40. Front ARC Connector

Note: The ARC V.35 3745 DTE is no longer provided.

ARC Wrap Plug Pin Assignment

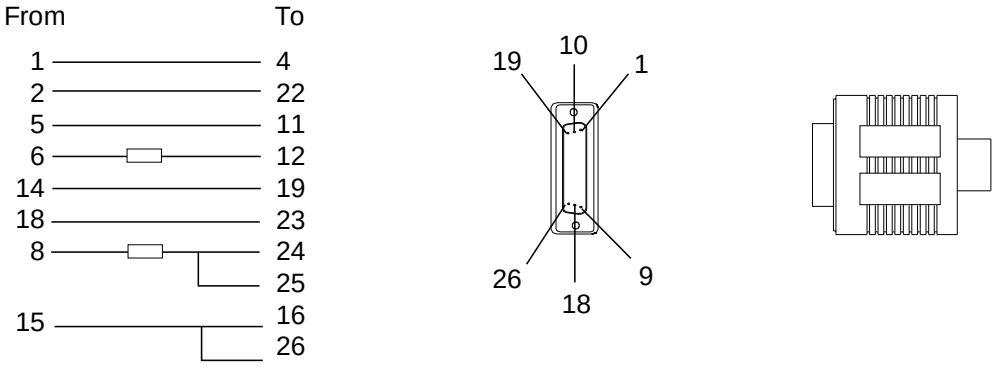


Figure 3-41. ARC V.24 Wrap Plug Pin Assignment (PN 58G5660)

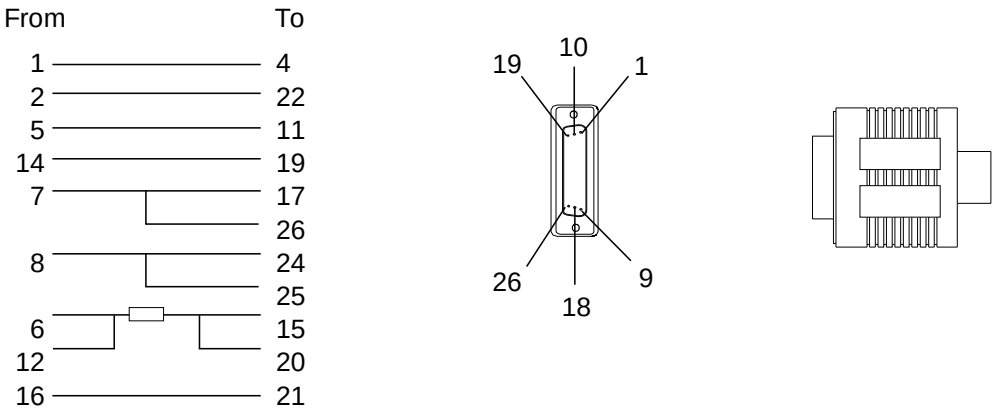


Figure 3-42. ARC V.35 Wrap Plug Pin Assignment (PN 58G5661)

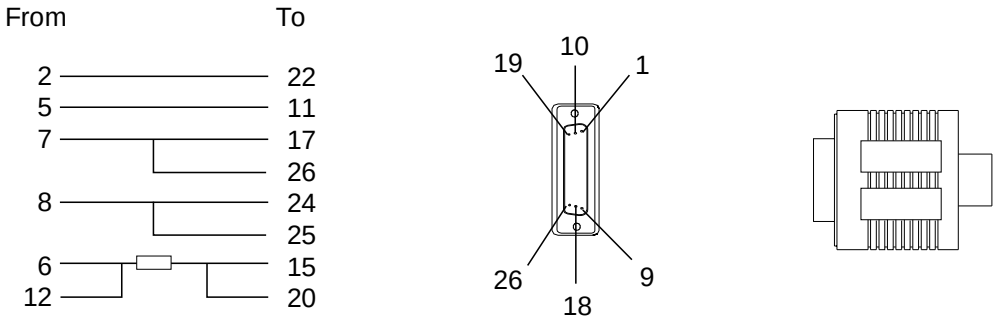


Figure 3-43. ARC V.35 DTE 3745 Wrap Plug Pin Assignment (PN 58G5658)

Note: The wrap plug (PN 58G5658) is no longer provided.

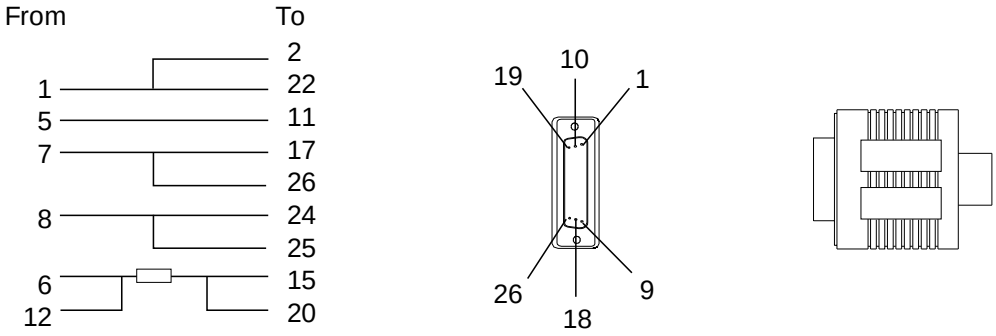


Figure 3-44. ARC V.35 DCE 3745 Wrap Plug Pin Assignment (PN 58G5659)

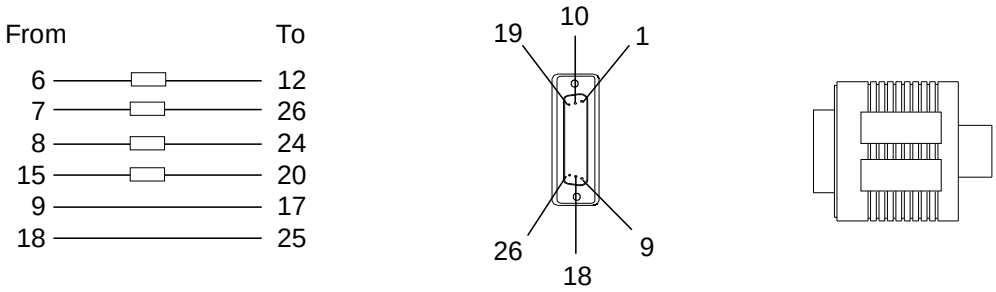


Figure 3-45. ARC X.21 Wrap Plug Pin Assignment (PN 58G5662)

ARC Cable V.24 Attachement to DTE

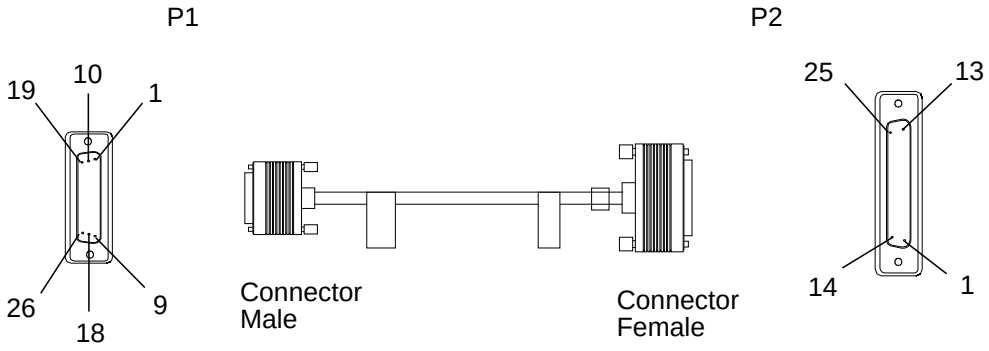
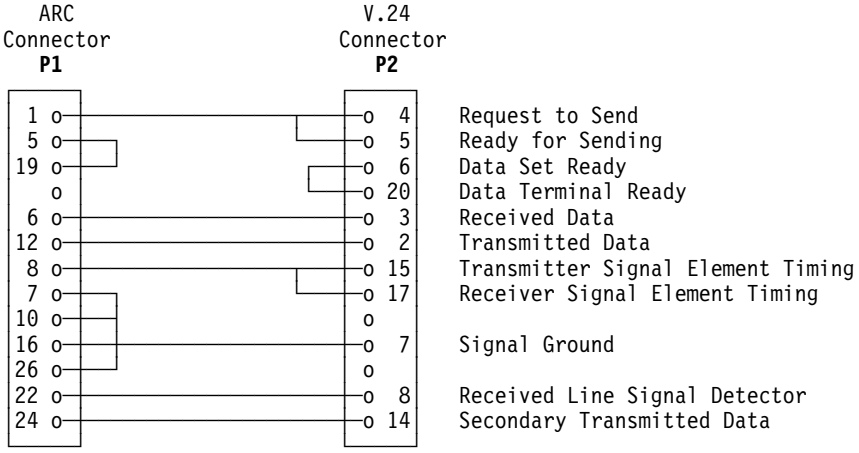


Figure 3-46. V.24 Cable: ARC to DTE

Interchange Circuits



Legend: —8— A twisted pair
—8—

Figure 3-47. V.24 Cable: ARC to DTE Pin Assignment

ARC Cable V.24 Attachement to DCE

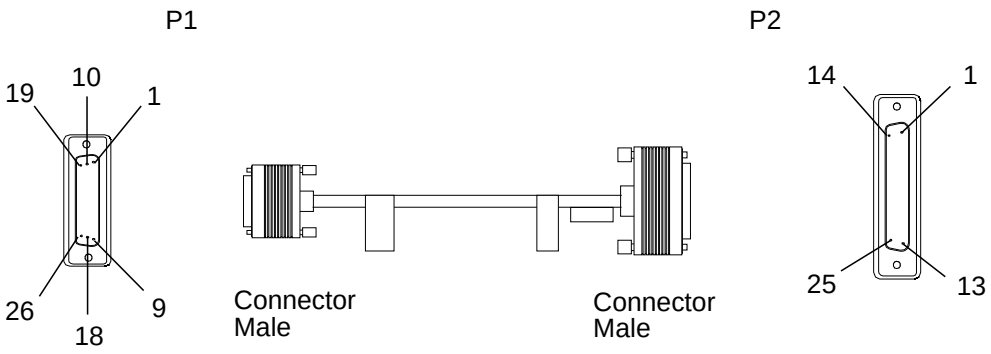
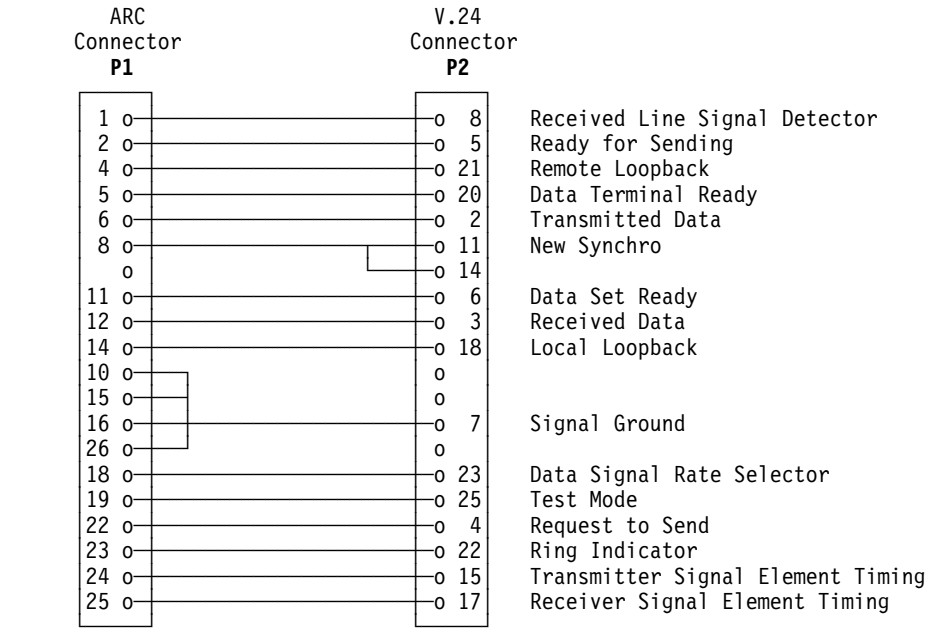


Figure 3-48. V.24 Cable: ARC to DCE

Interchange Circuits



Legend: –8– A twisted pair
–8–

Figure 3-49. V.24 Cable: ARC to DCE Pin Assignment

ARC Cable V.35 Attachement to DTE

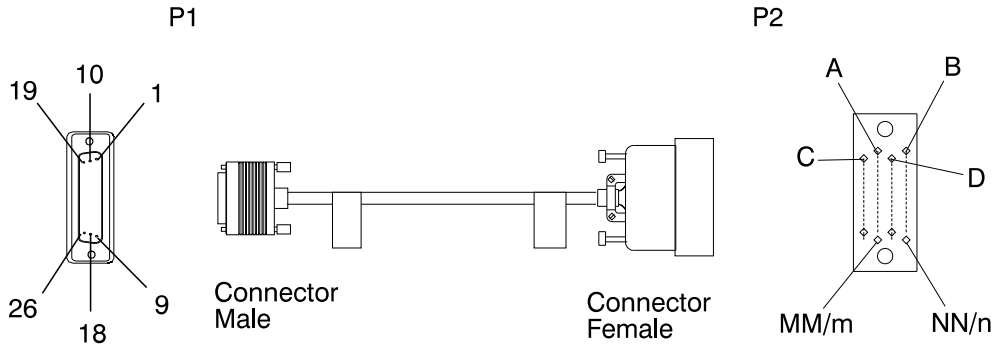
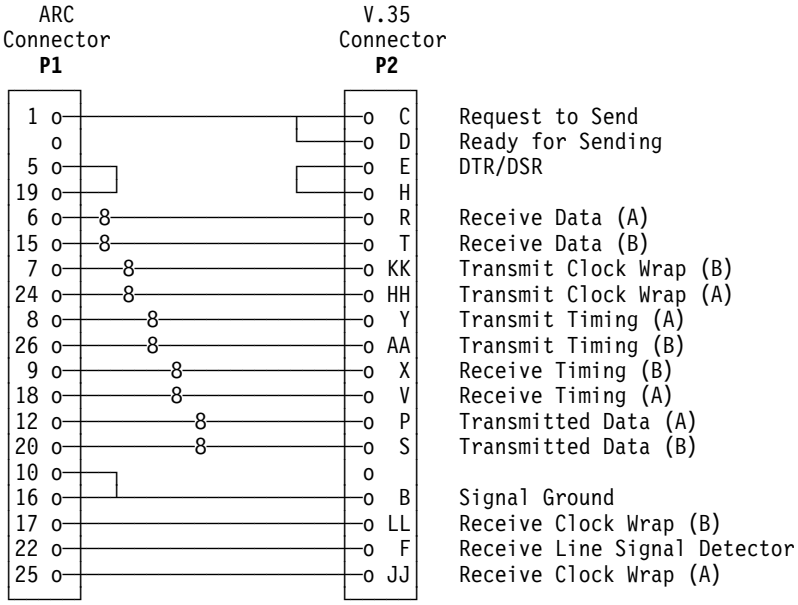


Figure 3-50. V.35 Cable: ARC to DTE

Interchange Circuits



Legend: –8– A twisted pair
–8–

Figure 3-51. V.35 Cable: ARC to DTE Pin Assignment

ARC Cable V.35 Attachement to DCE

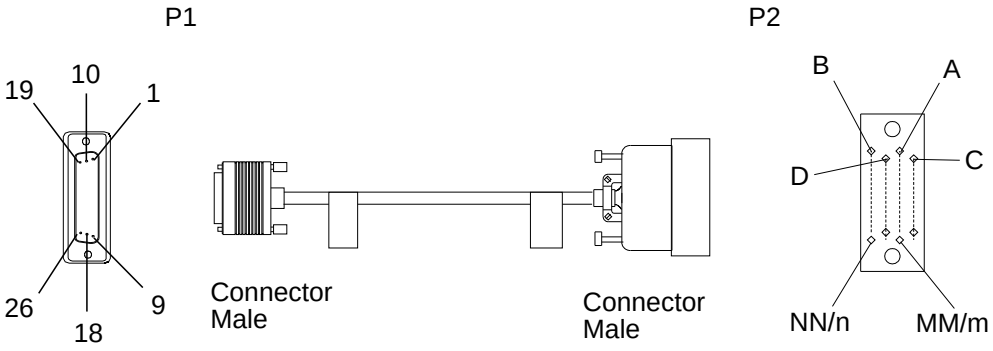
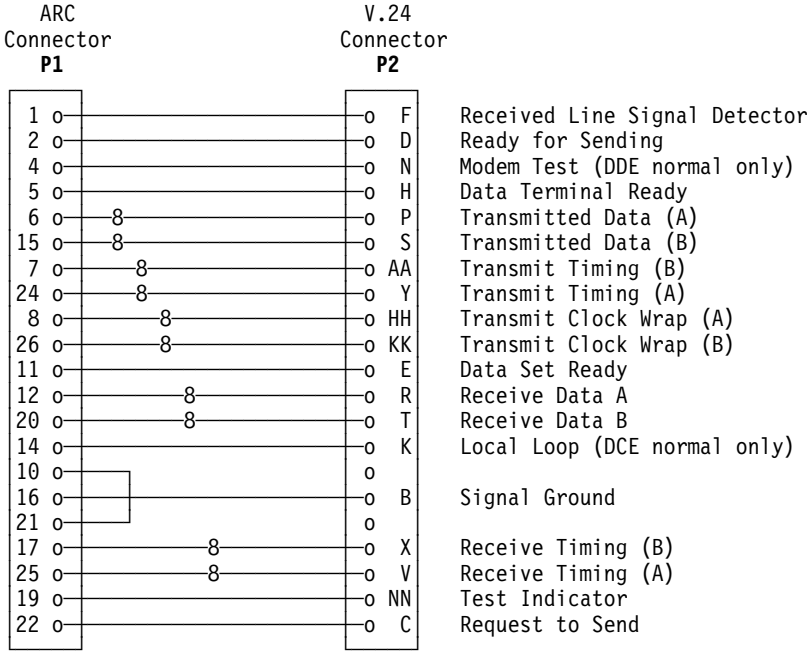


Figure 3-52. V.35 Cable: ARC to DCE

Interchange Circuits



Legend: –8– A twisted pair
–8–

Figure 3-53. V.35 Cable: ARC to DCE Pin Assignment

ARC Cable X.21 Attachement to DTE

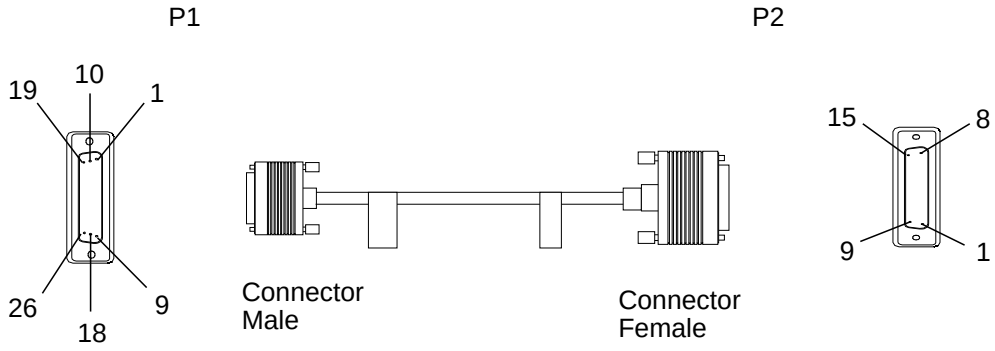
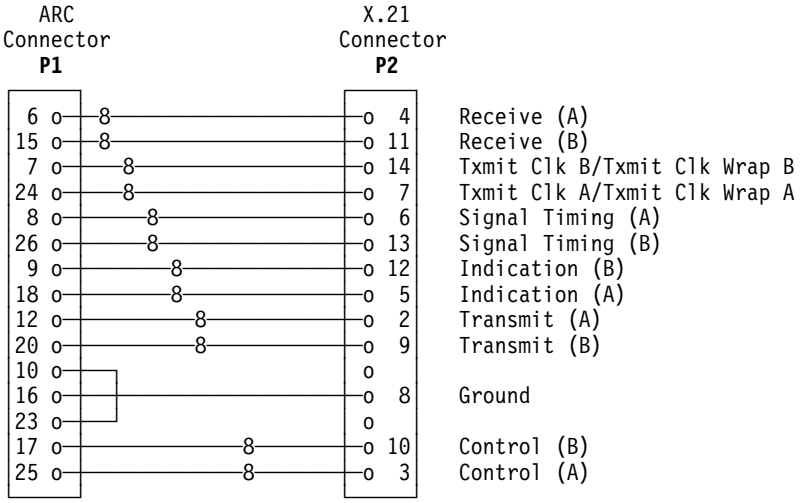


Figure 3-54. X.21 Cable: ARC to DTE

Interchange Circuits



Legend: —8— A twisted pair
—8—

Figure 3-55. X.21 Cable: ARC to DTE Pin Assignment

ARC Cable X.21 Attachement to DCE

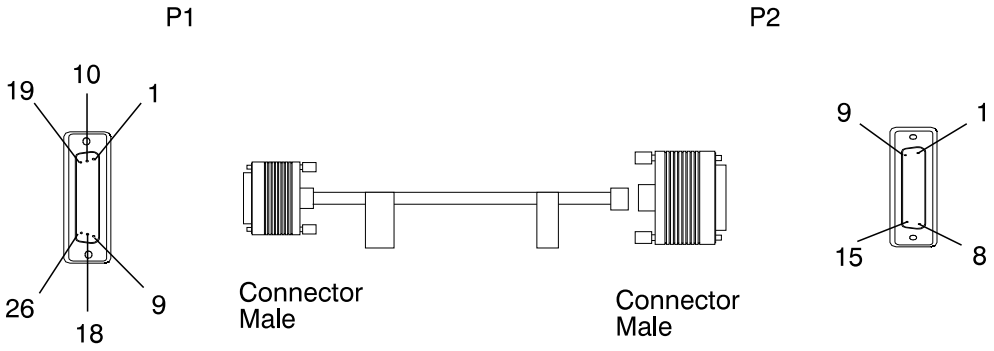
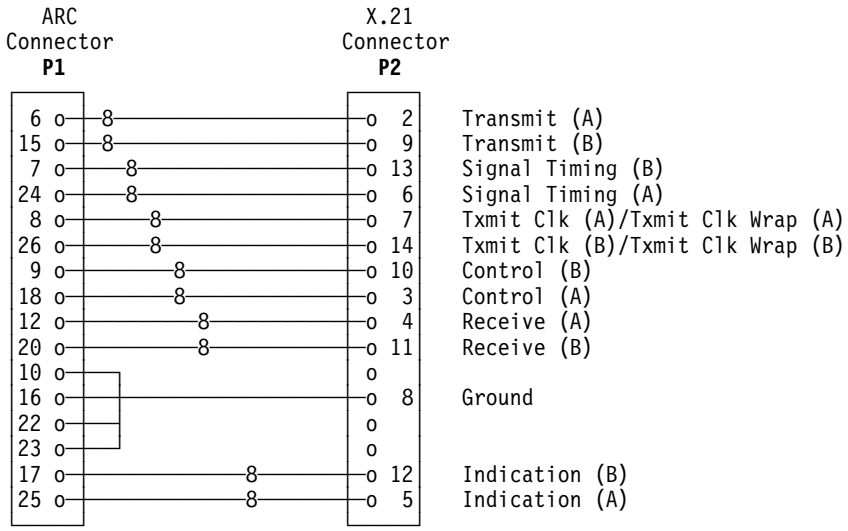


Figure 3-56. X.21 Cable: ARC to DCE

Interchange Circuits



Legend: —8— A twisted pair
—8—

Figure 3-57. X.21 Cable: ARC to DCE Pin Assignment

ARC Cable X.21 Attachement Transfix

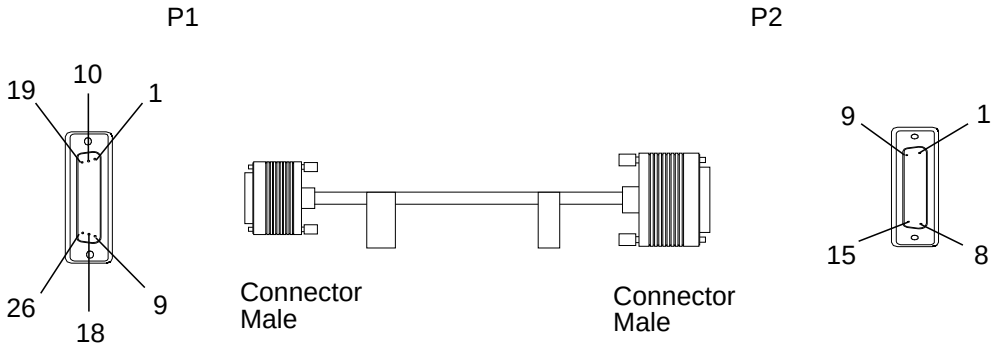
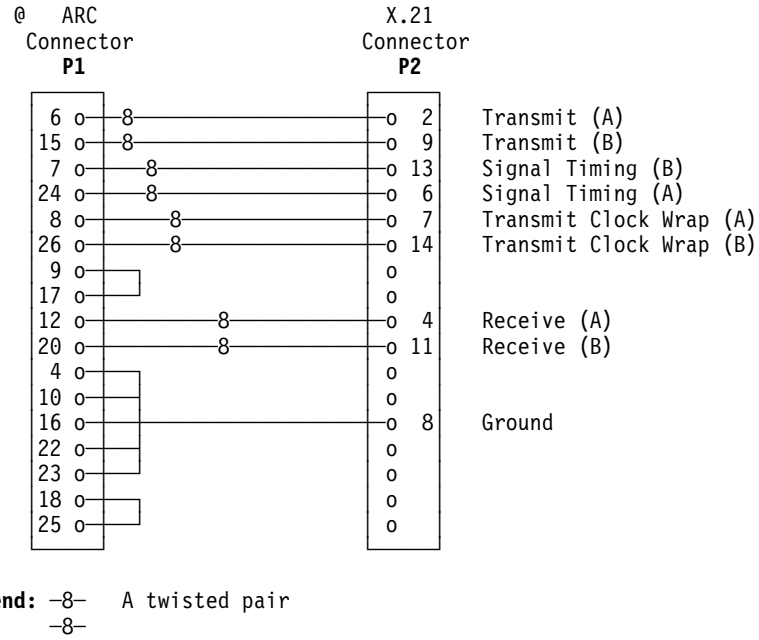


Figure 3-58. X.21 Cable: ARC to Transfix

Interchange Circuits



Legend: —8— A twisted pair
—8—

Figure 3-59. X.21 Cable: ARC to Transfix

ARC Cable V.24 Attachement to DTE 3745

Note: This cable is no longer provided.

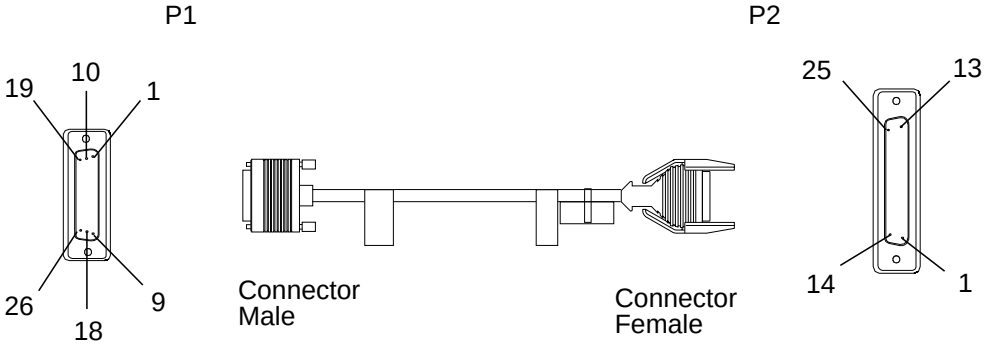
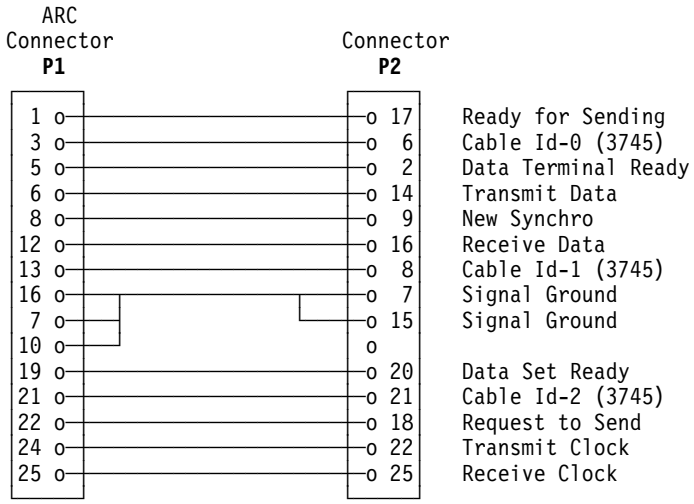


Figure 3-60. V.24 Cable: ARC to DTE 3745

Interchange Circuits



Legend: —8— A twisted pair
—8—

Figure 3-61. V.24 Cable: ARC to DTE Pin Assignment

ARC Cable V.24 Attachement to DCE 3745

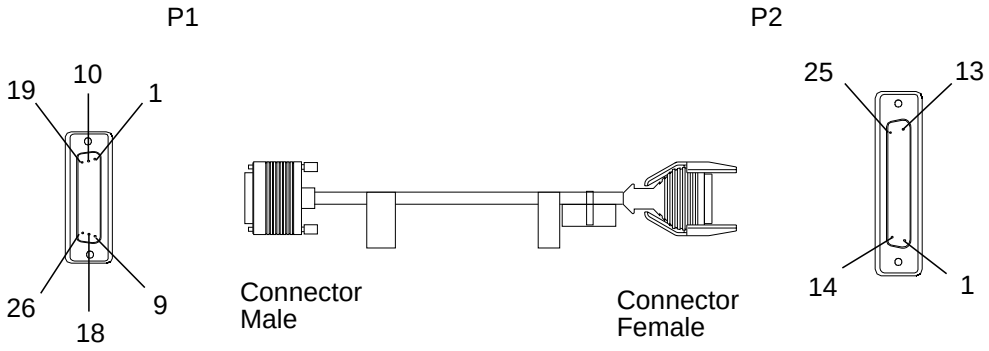
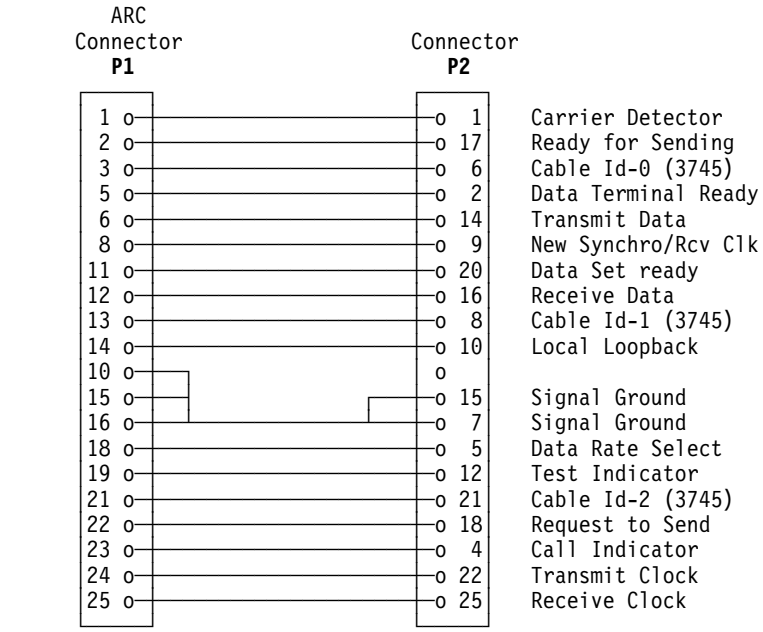


Figure 3-62. V.24 Cable: ARC to DCE 3745

Interchange Circuits



Legend: —8— A twisted pair
—8—

Figure 3-63. V.24 Cable: ARC to DCE Pin Assignment

ARC Cable V.35 Attachement to DTE 3745

Note: This cable is no longer provided.

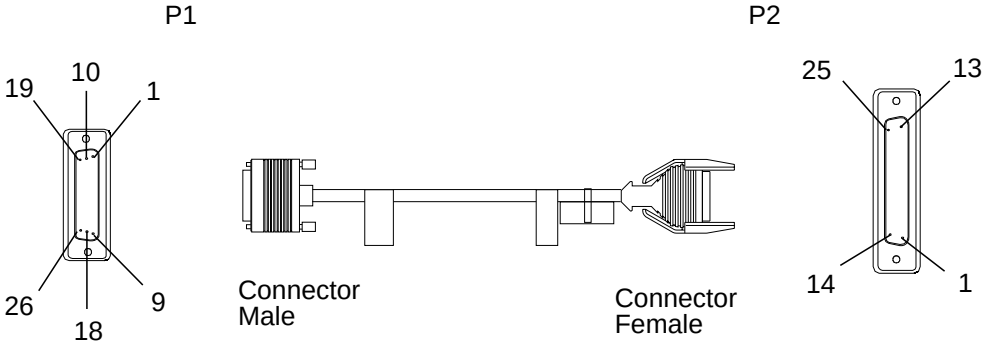


Figure 3-64. V.35 Cable: ARC to DTE 3745

Interchange Circuits

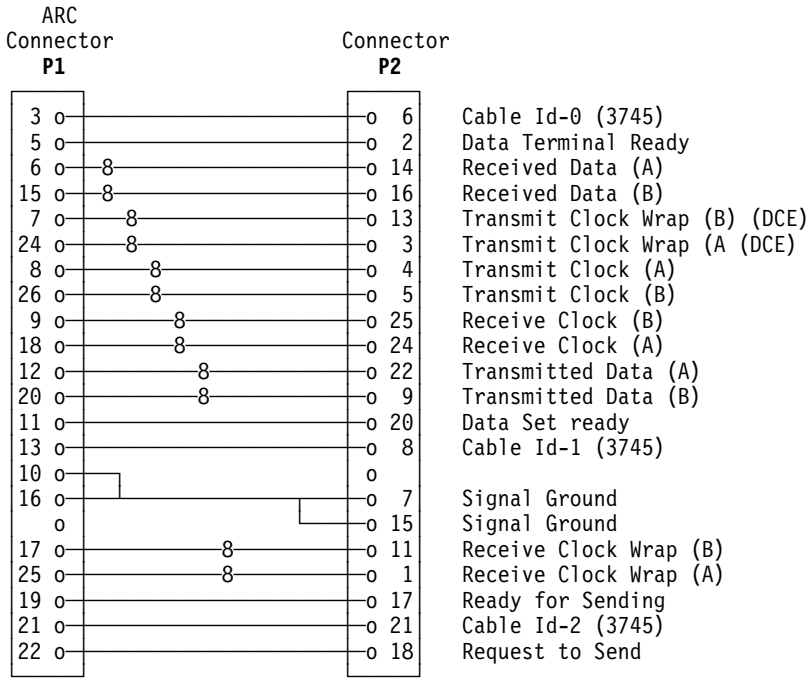


Figure 3-65. V.35 Cable: ARC to DTE 3745 Pin Assignment

ARC Cable V.35 Attachement to DCE 3745

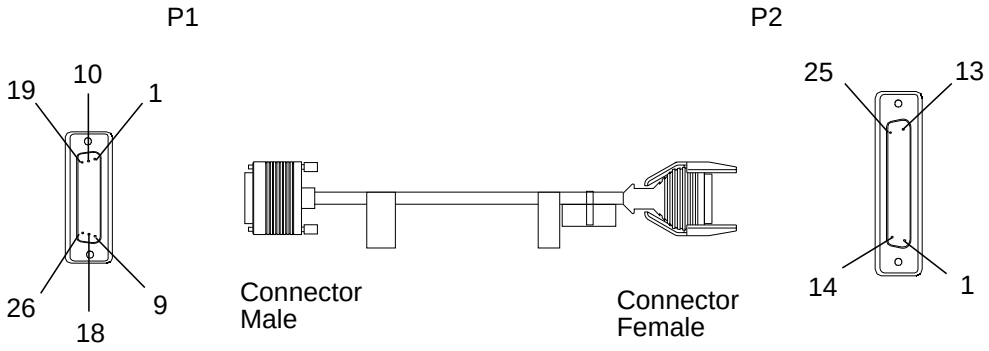
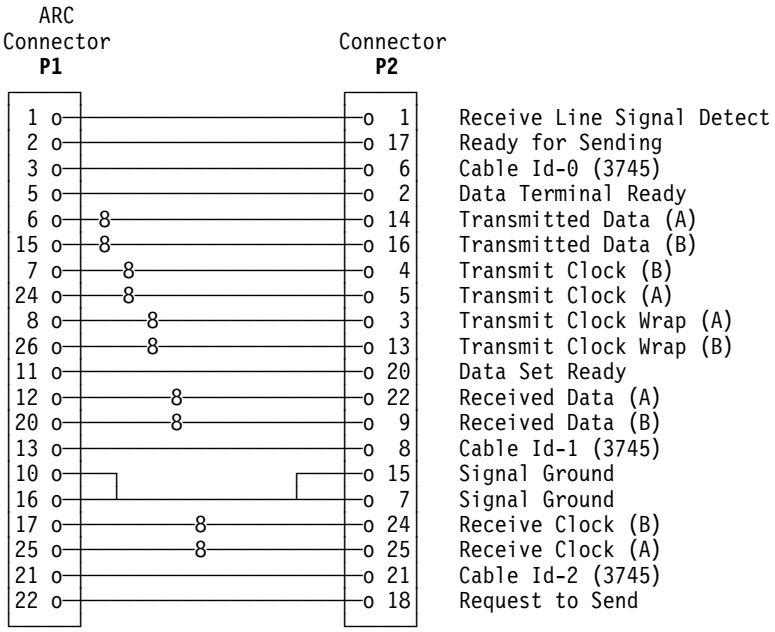


Figure 3-66. V.35 Cable: ARC to DCE 3745

Interchange Circuits



Legend: —8— A twisted pair
—8—

Figure 3-67. V.35 Cable: ARC to DCE 3745 Pin Assignment

ARC Cable X.21 Attachement to DTE 3745

Note: This cable is no longer provided.

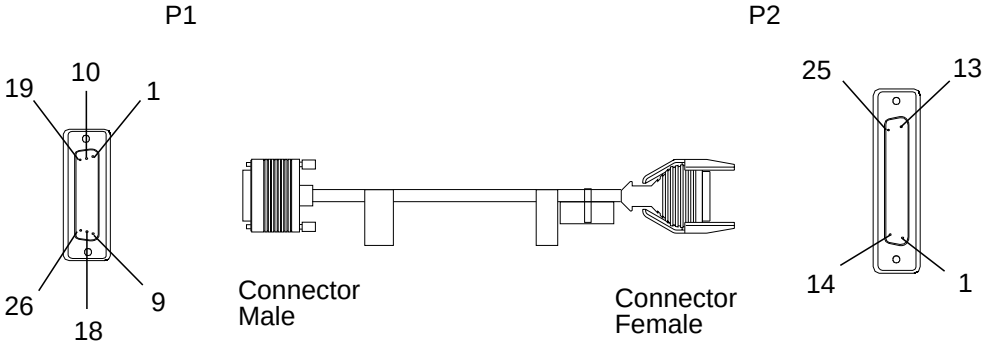
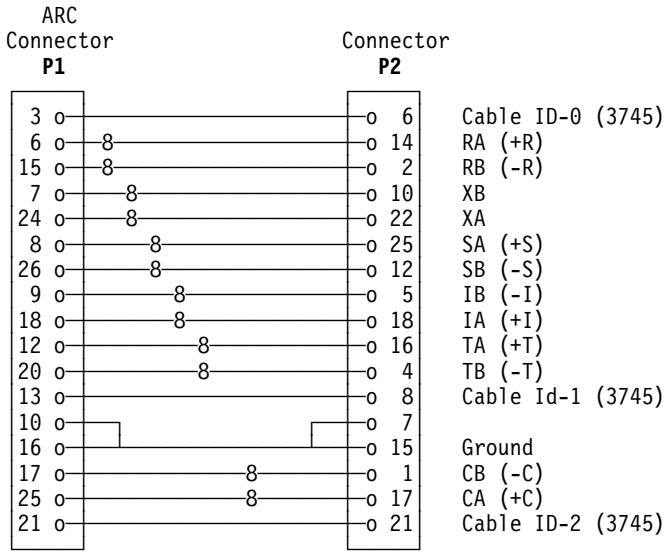


Figure 3-68. X.21 Cable: ARC to DTE 3745

Interchange Circuits



Legend: —8— A twisted pair
—8—

Figure 3-69. X.21 Cable: ARC to DTE 3745 Pin Assignment

ARC Cable X.21 Attachement to DCE 3745

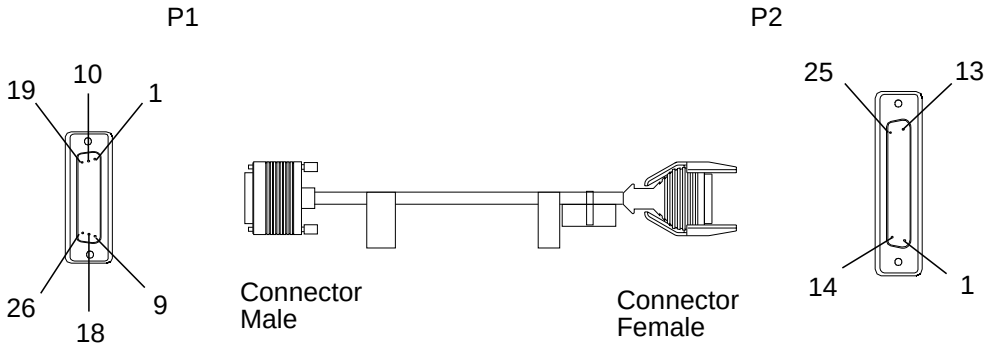
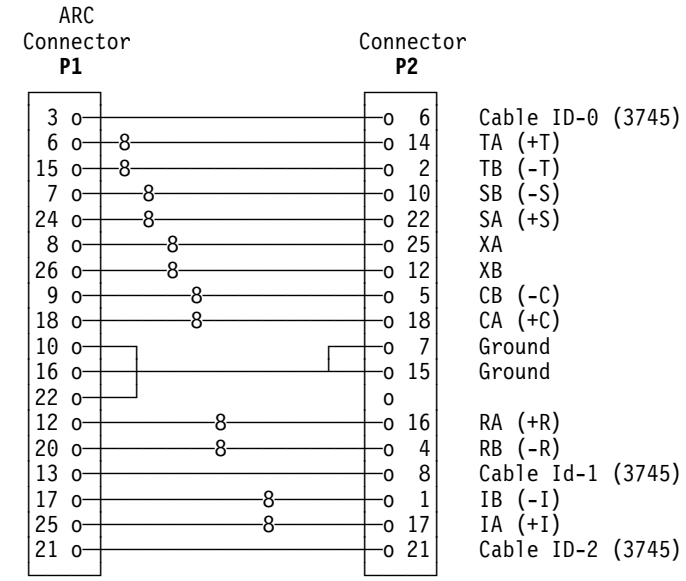


Figure 3-70. X.21 Cable: ARC to DCE 3745

Interchange Circuits



Legend: —8— A twisted pair
—8—

Figure 3-71. X.21 Cable: ARC to DCE 3745 Pin Assignment

Adapter for ARC3A1 or ARC3A2 (V.35 DCE) for France Only

This adapter **(Part Number 1749352)** is connected between the DCE and the ARC V.35 in **France** only.

Table 3-26. Adapter Part Number 1749352 for the V.35 DCE

Wire Number	Wire Color	Connector 1 Position	Connector 2 Position
T1	none	B	B
1	black	C	C
T2	none	D	D
2	brown	L	L
T3	none	F	F
3	red	N	N
T4	none	E	E
4	orange	H	H
T5	none	R	R
5	blue	T	T
T6	none	V	V
6	violet	X	X
T7	none	P	P
7	grey	S	S
T8	none	Y	Y
8	white	AA	AA

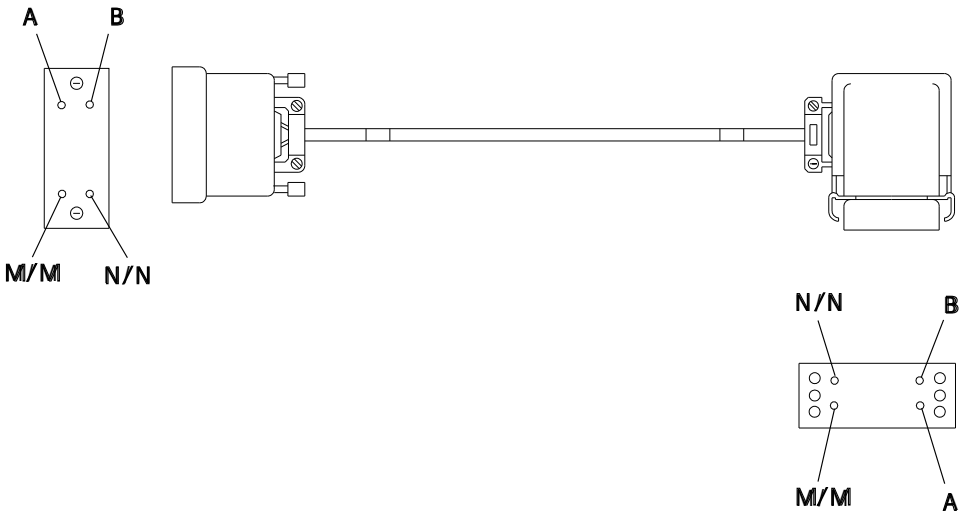


Figure 3-72. Adapter Part Number 1749352

Adapter for ARC3B (V.35 DTE) for France Only

This adapter **(Part Number 65X9899)** is connected between the DTE and the ARC V.35 in **France** only.

Table 3-27. Adapter Part Number 65X9899 for V.35 DTE

Wire Number	Wire Color	Connector 1 Position	Connector 2 Position
1	black	F	F
2	white	C	C
3	red	D	D
4	green	E	E
5	orange	R	R
6	blue	T	T
7	white black	P	P
8	red black	S	S
9	green black	V	V
10	orange black	X	X
11	blue black	Y	Y
12	black white	AA/a	AA/a
13	red white	H	H
14	green white	B	B
15	blue white	L	L

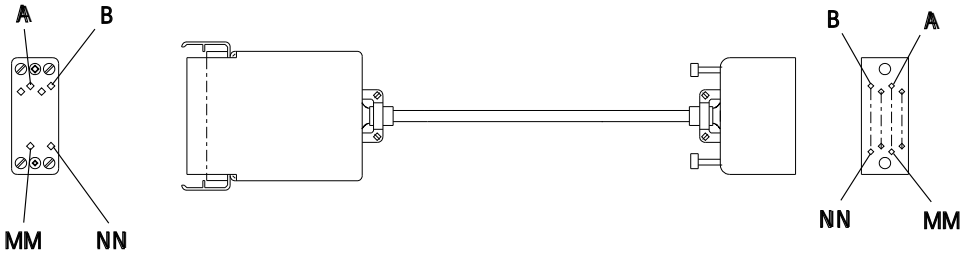
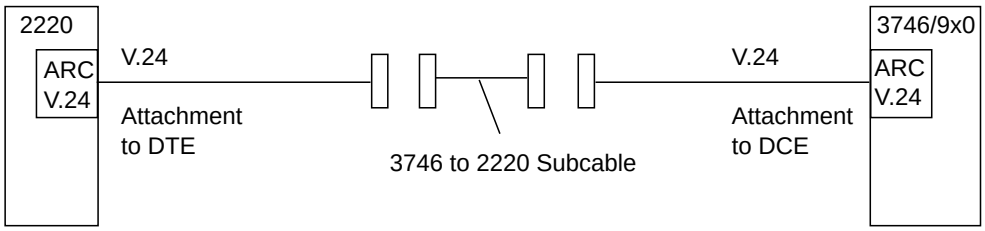
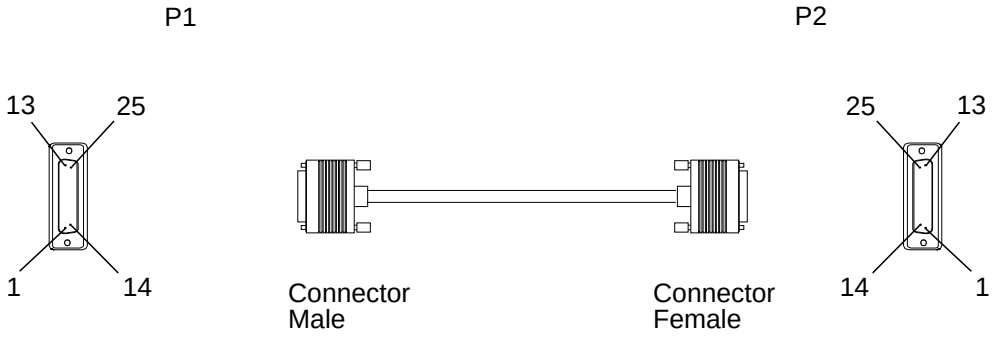


Figure 3-73. Adapter Part Number 65X9899

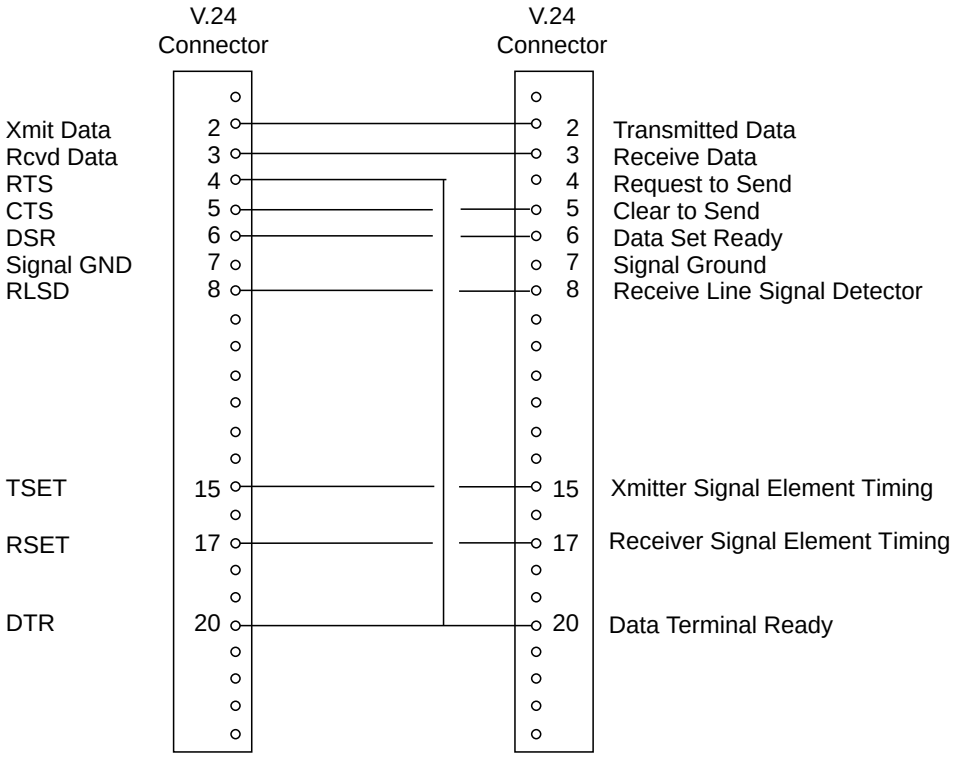
Subcable for 3746 to 2220 Connection

3746 Connection to 2220 Via V.24 Cable

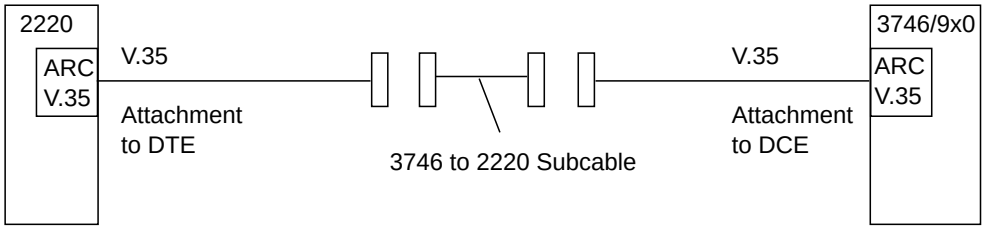


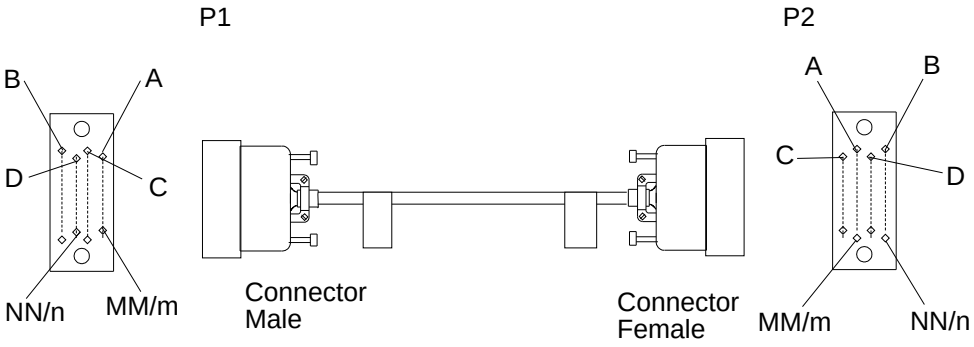


Interchange Circuits

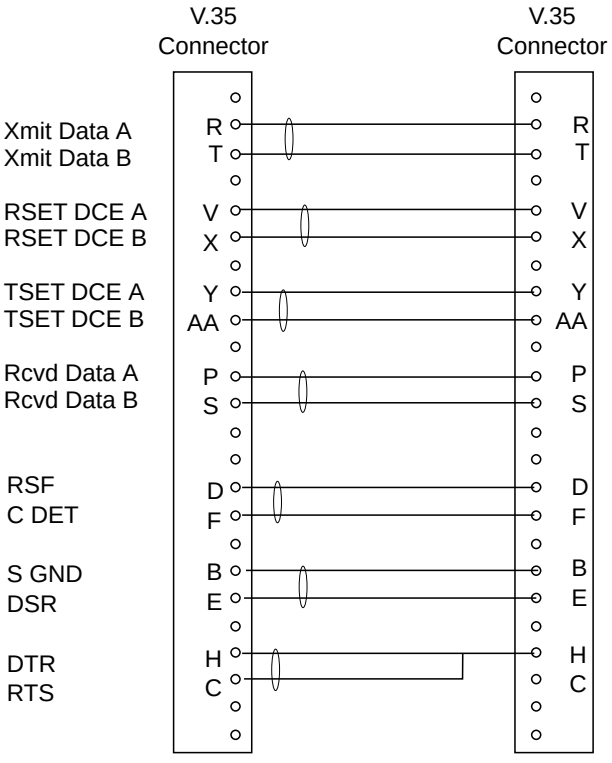


3746 Connection to 2220 Via V.35 Cable





Interchange Circuits



Legend:

Twisted Pair

LIC12

LIC12

LIC12 Interface	Description
Number	1
Characteristics	V.35 or X.21 leased line
Speed	56Kbps up to 2.048 Mbps

LIC12 Wrap Plug

The part number of the wrap plug is **58X9349** for **V.35**
The part number of the wrap plug is **58X9354** for **X.21**

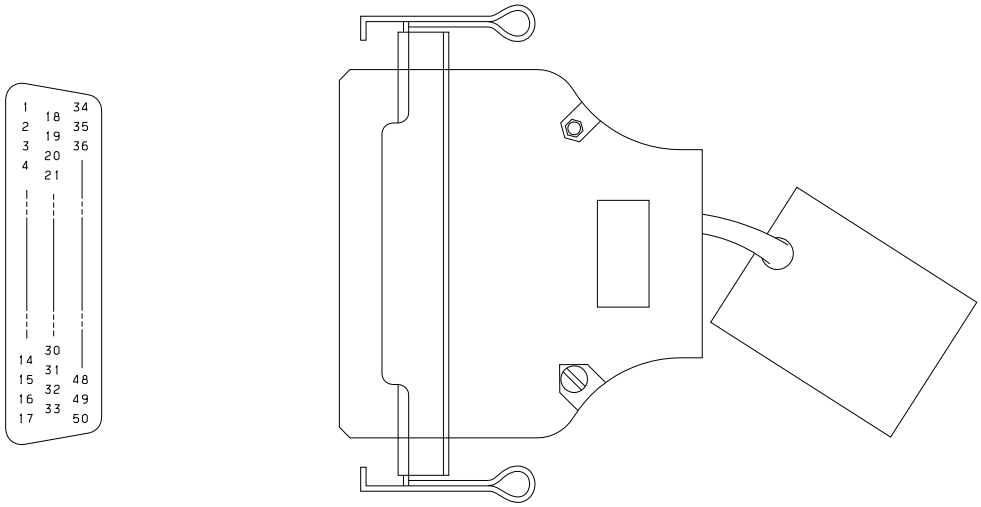


Figure 3-74. LIC12 Wrap Plug (Part Number 58X9349 and Part Number 58X9354)

See “HPTSS Wrap Plugs” on page 3-58 for wrap plug pin assignment

Attachment Cable

See “LIC12 DTE/DCE Cable Connectors” on page 3-49 for cable characteristics.

LIC12 Cable List

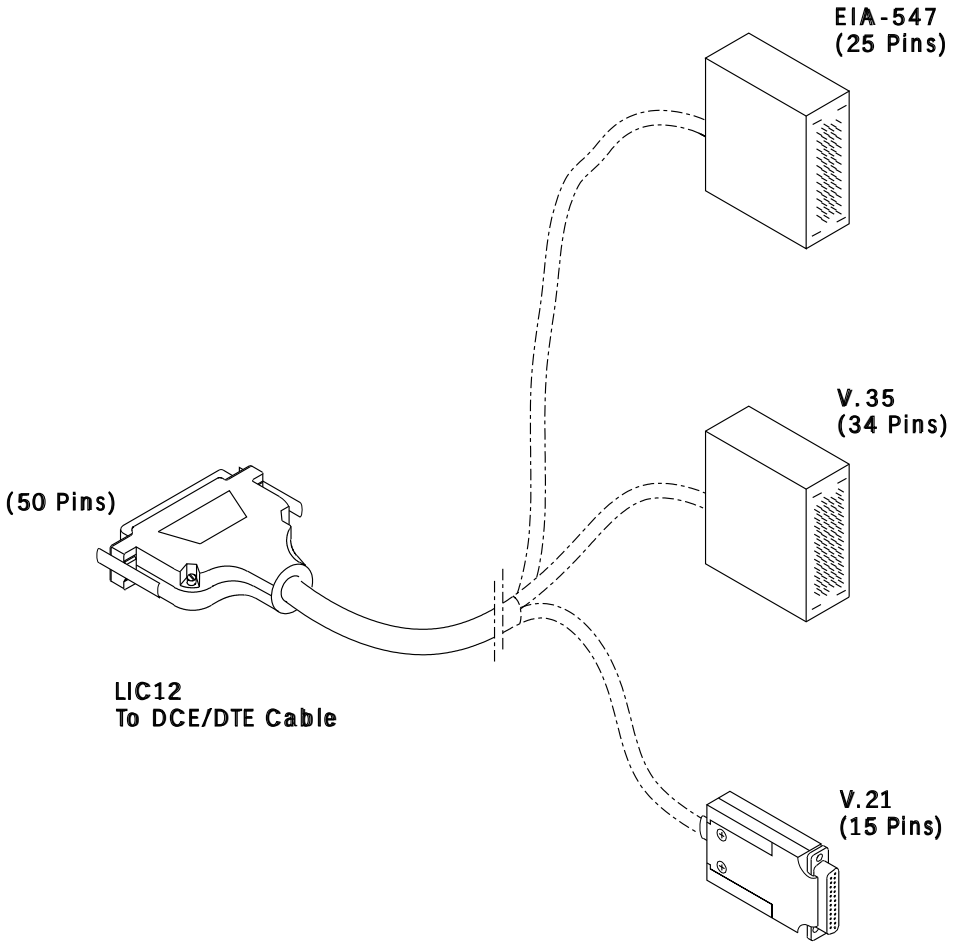
Table 3-28. High-speed Line Attachment Cables

Part Number	Cable Type	Cable Group	Fixed Length (Meters/Feet)	Variable Length (Meters/Feet)	
				Short Cable	Long Cable
58X9344	V.35 DCE	5831	10/33	up to 10/33	up to 35/115
76F8633(1)	V.35 DCE	7007	10/33	up to 10/33	up to 35/115
58X9345	X.21 DCE	5833	10/33	up to 10/33	
76F8634(1)	X.21 DCE	7009	10/33	up to 10/33	
58X9347	V.35 DTE	5837	10/33	up to 10/33	up to 100/328
76F8635(1)	V.35 DTE	7011	10/33	up to 10/33	up to 100/328
58X9348	X.21 DTE	5839	10/33	up to 10/33	
76F8636(1)	X.21 DTE	7013	10/33	up to 10/33	
58X9346	X.21 Transfix	5835	10/33	up to 10/33	
11F4837	X.21 EIA-547 DCE	5844	10/33	up to 10/33	up to 35/115
76F8637(1)	X.21 EIA-547 DCE	7015	10/33	up to 10/33	up to 35/115
11F4838	X.21 EIA-547 DTE	5845	10/33	up to 10/33	up to 100/328
76F8638(1)	X.21 EIA-547 DTE	7017	10/33	up to 10/33	up to 100/328

Notes:

1. Plenum cable for U.S and Canada only
2. Use feature code 5212 for these cables.

LIC12 DTE/DCE Cable Connectors



For cable ordering, see the HPTSS cable descriptions in the following pages.

Feature Code: The HPTSS cable feature code is:

- **5212** for the 3746-900/950.

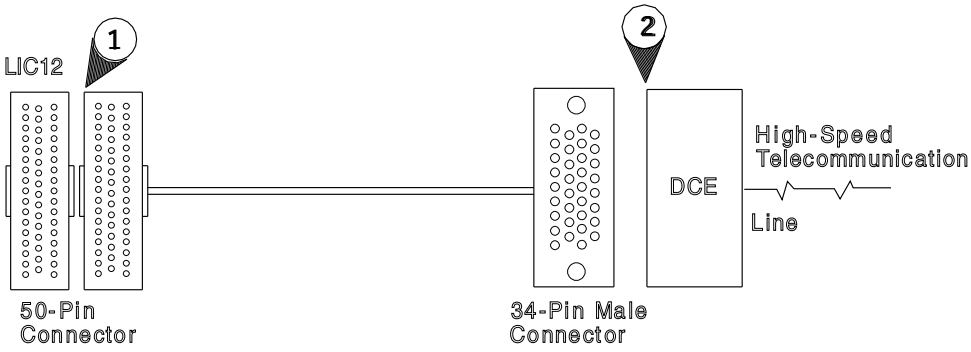
V.35 Interface to DCE

Cable Type	Length, m (ft)	Cable Group	Cable Part Number
Standard Fixed	10 m (33)	5831	58X9344
Variable	Less than 10 m (33)	5830	58X9344
Variable	Up to 35 m (115) (See note below)	NA	58X9344

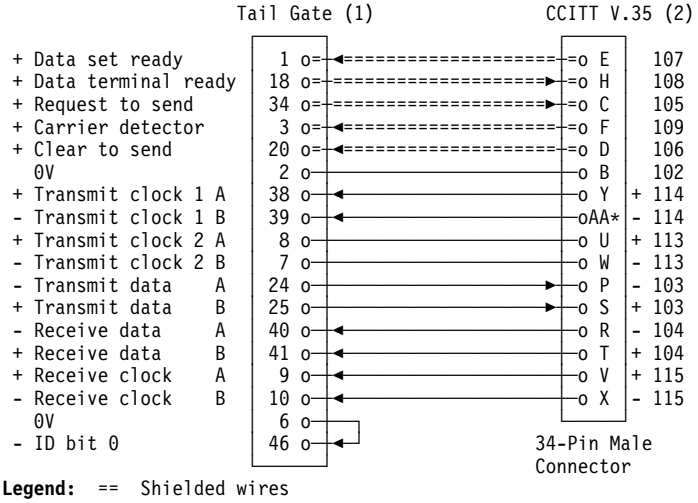
Feature Code: 5212 is for 3746-900/950

Note:

The HPTSS/LIC12 cable length is limited to 10 m (33 ft), if circuit 113 is not supported by the DCE. The 35 m (115 ft) maximum cable length is authorized if circuit 113 is supported by the DCE. Circuit 113 (Transmit Clock 2) is circuit 114 (Transmit Clock 1) from the DCE looped back to the DCE. Circuit 113 and LIC12/HSS Transmit Data are synchronous. The option to support circuit 113 may or may not be available on the manufacturer's DCE. Verify that this support exists by reading the documentation on your DCE, and select the options that correspond to your cable length.



Interchange Circuits



Legend: == Shielded wires
* AA is also named 'a'

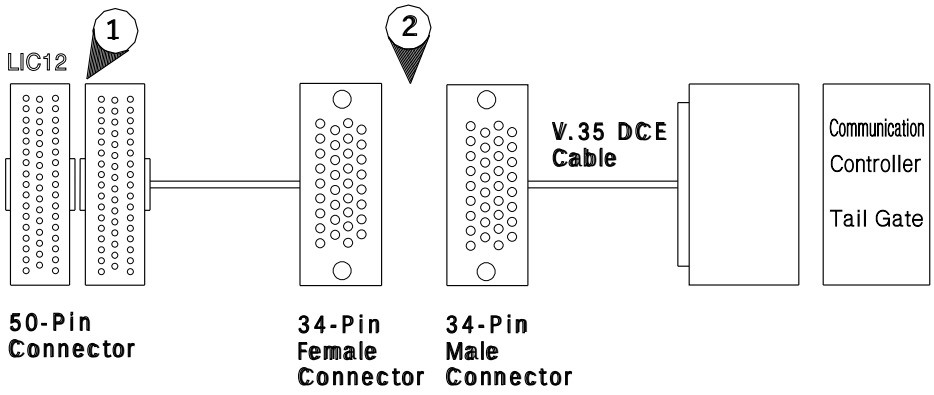
Voltage levels: Refer to “Voltage Interface Measurements” on page 3-57 for information.

V.35 Direct Attach Cable

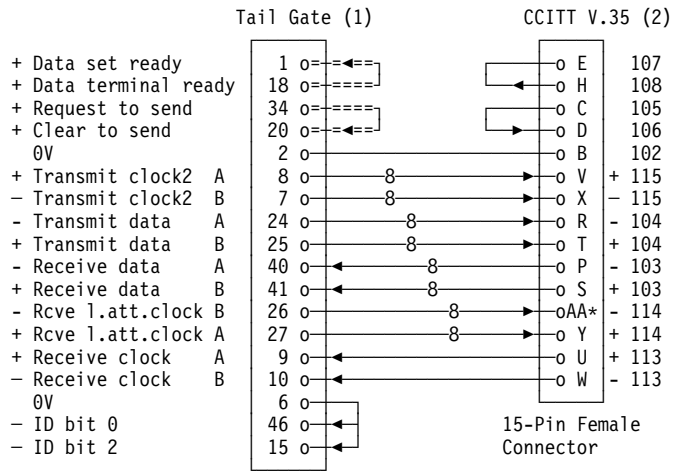
Cable Type	Length, m (ft)	Cable Group	Cable Part Number
Standard Fixed	10 m (33)	5837	58X9347
Variable	Less than 10 m (33)	5836	58X9347
Variable	Up to 100 m (330)	NA	58X9347

Feature Code: 5212 is for 3746-900/950

Cable to DTE



Interchange Circuits



Legend: == Shielded wires * AA is also named 'a'
8 Twisted wires

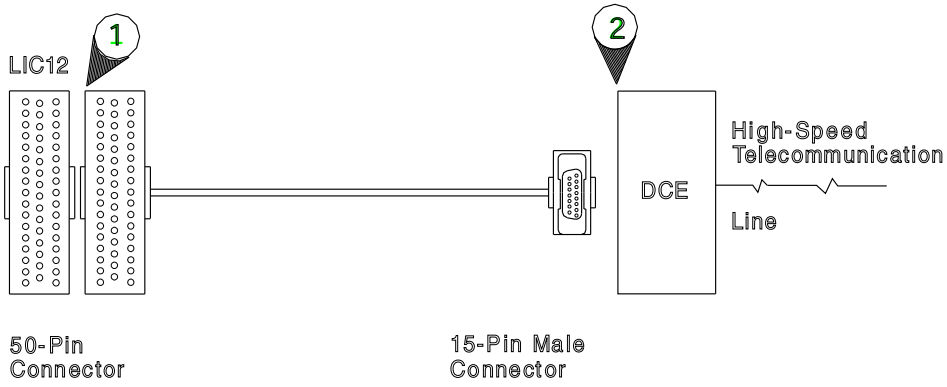
Voltage levels: Refer to "Voltage Interface Measurements" on page 3-57 for information.

X.21 Interface to DCE (Including Transfix France at 1.920Mbps)

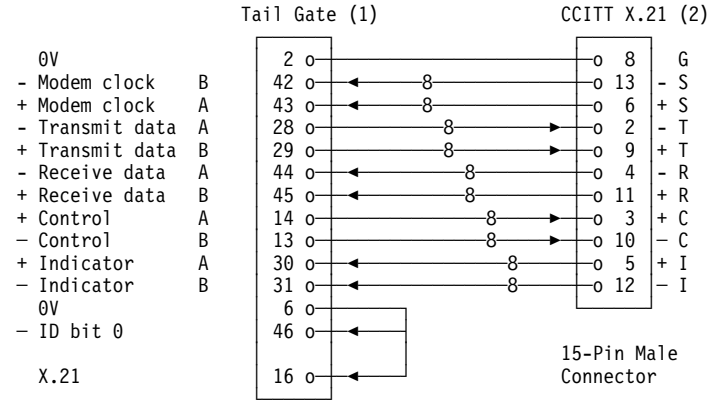
Cable Type	Length, m (ft)	Cable Group	Cable Part Number
Standard Fixed	10 m (33)	5833	58X9345
Variable	Less than 10 m (33)	5832	58X9345

Feature Code: 5212 is for 3746-900/950

Cable to DCE



Interchange Circuits



Legend: 8 Twisted wires

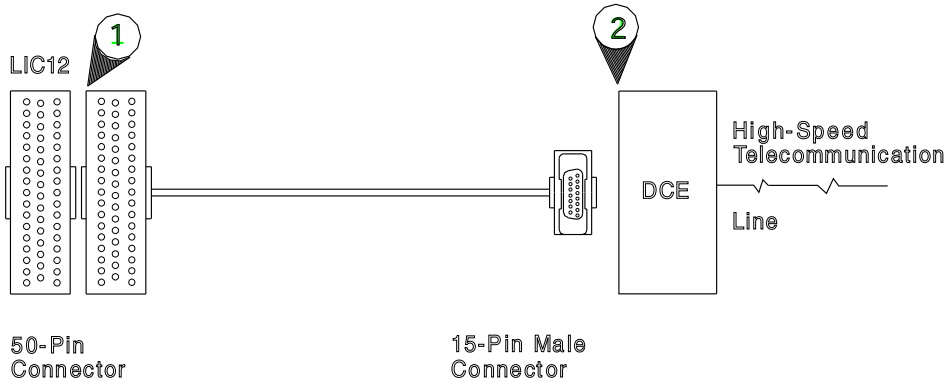
Voltage levels: Refer to “Voltage Interface Measurements” on page 3-57 for information.

X.21 Interface to DCE (Transfix France, Except 1.920 Mbps)

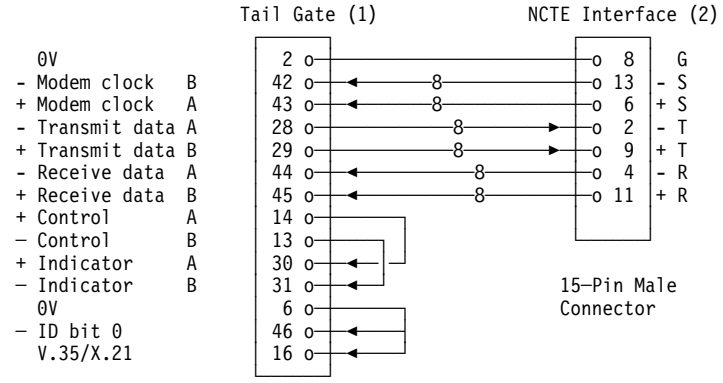
Cable Type	Length, m (ft)	Cable Group	Cable Part Pumber
Standard Fixed	10 m (33)	5835	58X9346
Variable	Less than 10 m (33)	5834	58X9346

Feature Code: 5212 is for 3746-900/950

Cable to DCE



Interchange Circuits



Legend: 8 Twisted wires

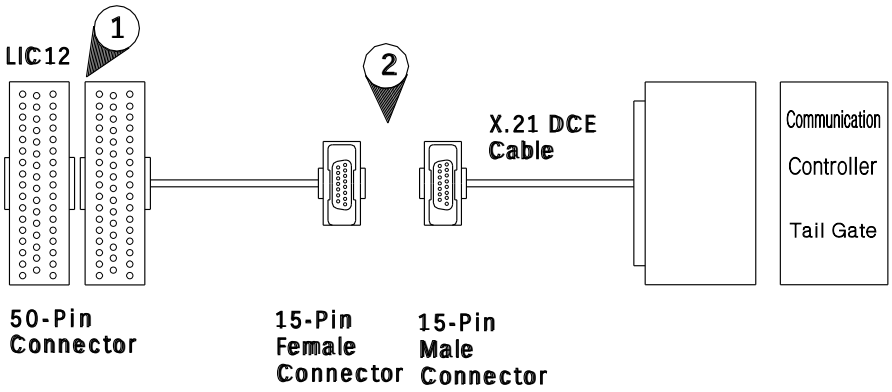
Voltage levels: Refer to “Voltage Interface Measurements” on page 3-57 for information.

X.21 Direct Attach Cable

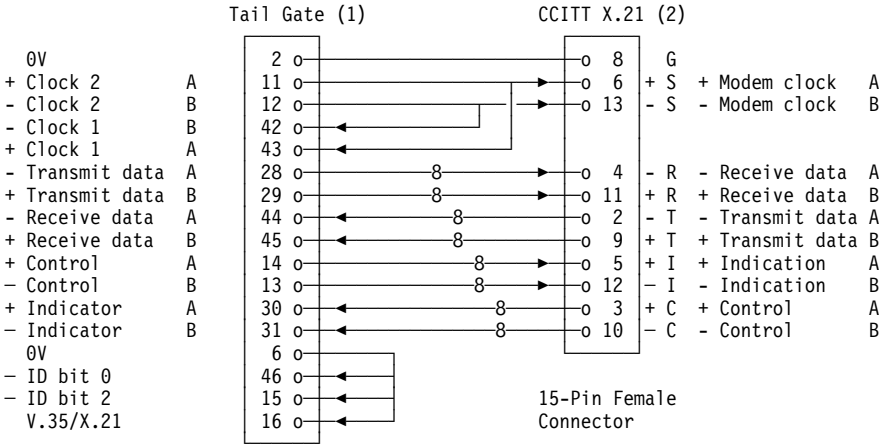
Cable Type	Length, m (ft)	Cable Group	Cable Part Number
Standard Fixed	10 m (33)	5839	58X9348
Variable	Less than 10 m (33)	5838	58X9348

Feature Code: 5212 is for 3746-900/950

Cable to DTE



Interchange Circuits



Legend: 8 Twisted wires

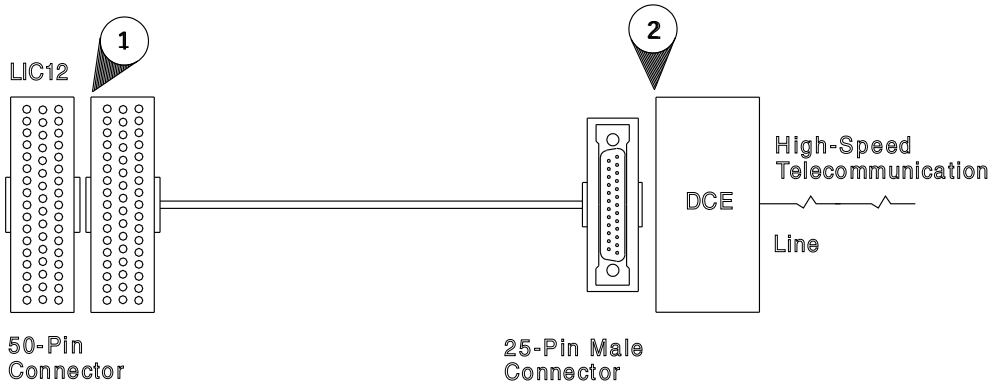
Voltage levels: Refer to “Voltage Interface Measurements” on page 3-57 for information.

EIA-547 Interface to DCE

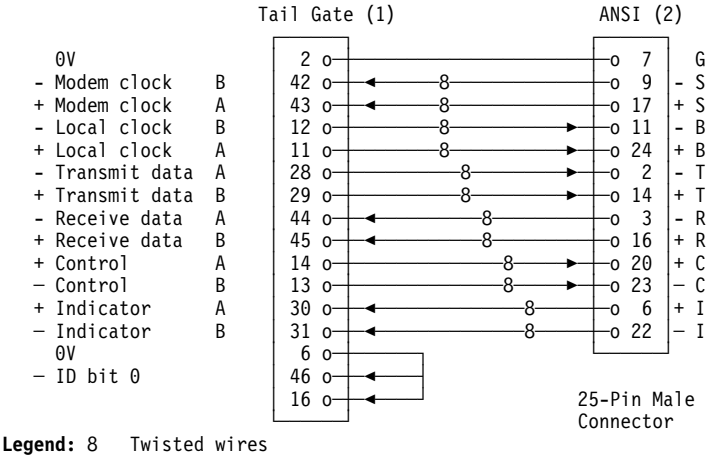
Cable Type	Length, m (ft)	Cable Group	Cable Part Number
Standard Fixed	10 m (33)	5844	11F4837
Variable	Less than 10 m (33)	5842	11F4837
Variable	Up to 35 m (115)	NA	11F4837

Feature Code: 5212 is for 3746-900/950

Cable to DCE



Interchange Circuits



Legend: 8 Twisted wires

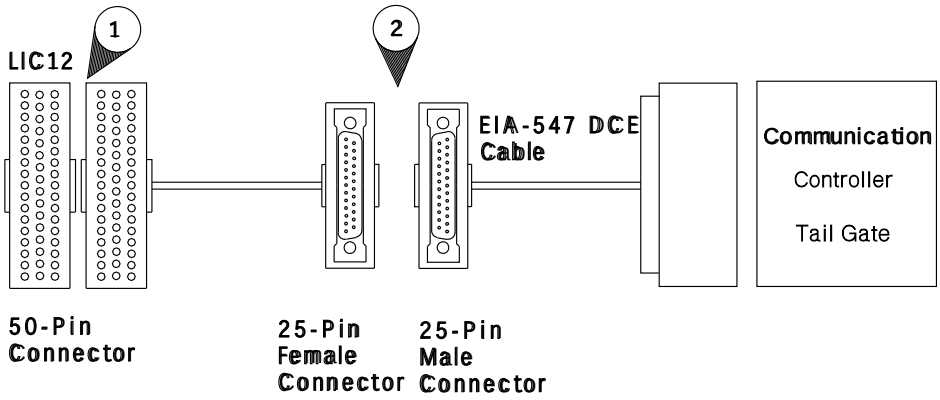
Voltage levels: Refer to "Voltage Interface Measurements" on page 3-57 for information.

EIA-547 Direct Attach Cable

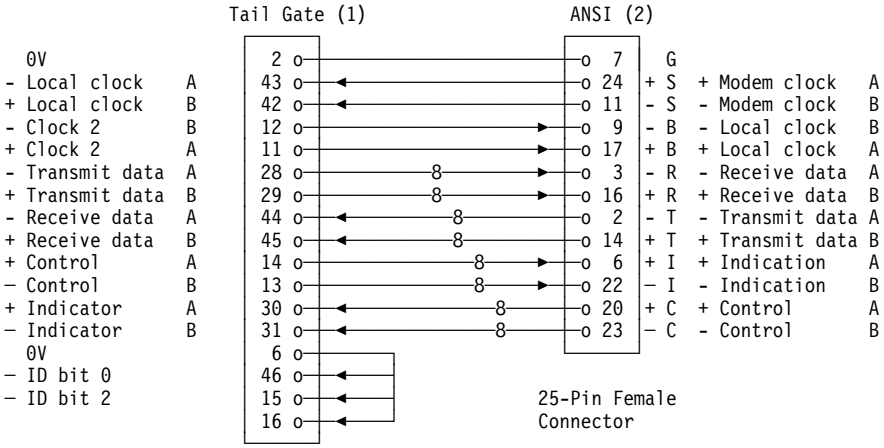
Cable Type	Length, m (ft)	Cable Group	Cable Part Number
Standard Fixed	10 m (33)	5845	11F4838
Variable	Less than 10 m (33)	5843	11F4838
Variable	Up to 100 m (328)	NA	11F4838

Feature Code: 5212 is for 3746-900/950

Cable to DTE



Interchange Circuits



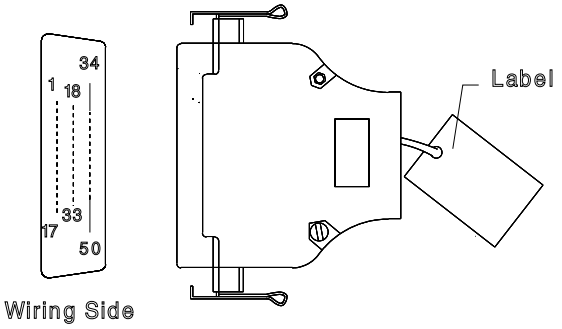
Legend: 8 Twisted wires

Voltage levels: Refer to “Voltage Interface Measurements” on page 3-57 for information.

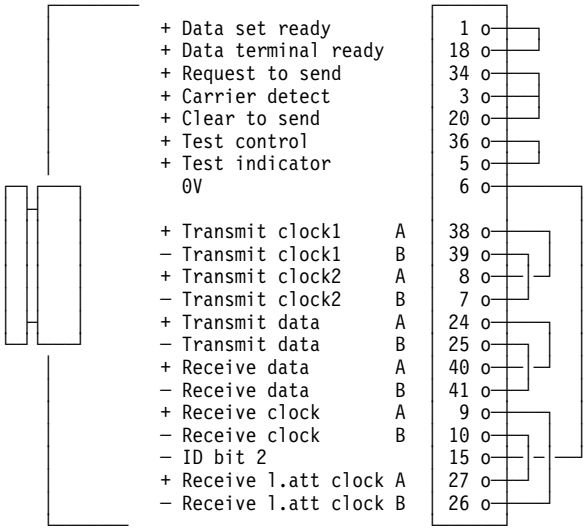
Voltage Interface Measurements

V.35 Interface Signal Name	CCITT Circuit Number	Level	Voltage
CTS	105	ON OFF	> +3 V < −3 V
DTR	108.2	ON OFF	> +3 V < −3 V
TC	140	ON OFF	> +3 V < −3 V
Transmit Data	103	0 1	a>b 0.275 V a<b 0.275 V
Transmit Clock2	113	0 1	a>b 0.275 V a<b 0.275 V
Receive Local Attach	——	0 1	a>b 0.275 V a<b 0.275 V
X.21 Interface			
Transmit Data	T	0 1	a>b 0.275 V a<b 0.275 V
Control	C	0 1	a>b 0.275 V a<b 0.275 V

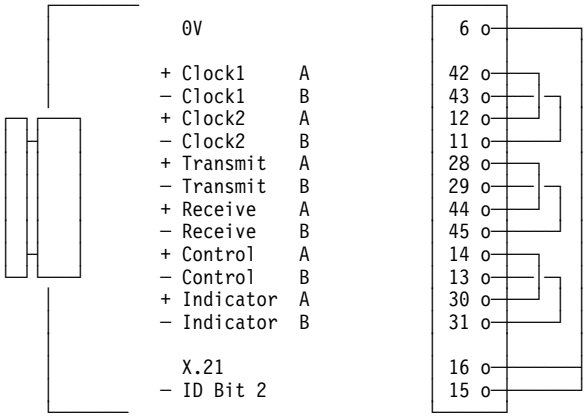
HPTSS Wrap Plugs



Wrap Plug V.35 Part Number 58X9349



Wrap Plug X.21 Part Number 58X9354



LIC16

LIC12

LIC16 Interface	Description
Number	1
Characteristics	E1 (120 Ohms)
Speed	2.048 Mbps

LIC16 Wrap Plug

The part number of the wrap plug is 57G8097.

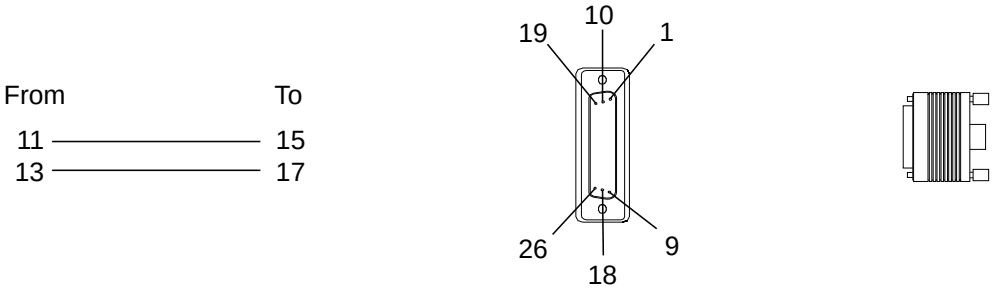


Figure 3-75. LIC16 Wrap Plug Pin Assignment

LIC16 E1 Cable

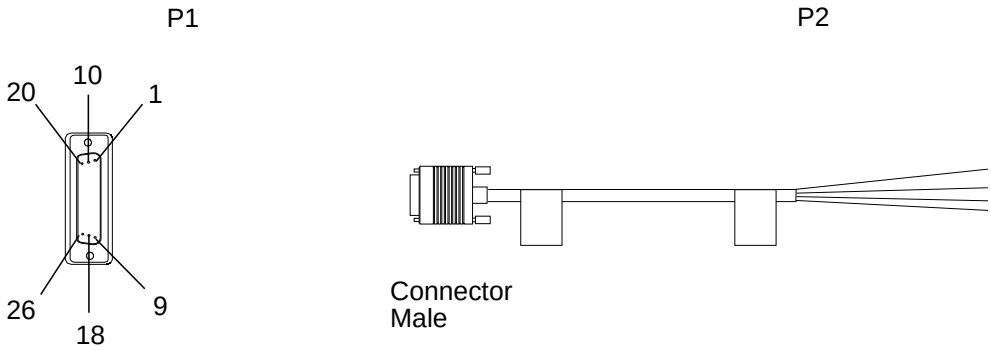


Figure 3-76. LIC16 E1 Cable

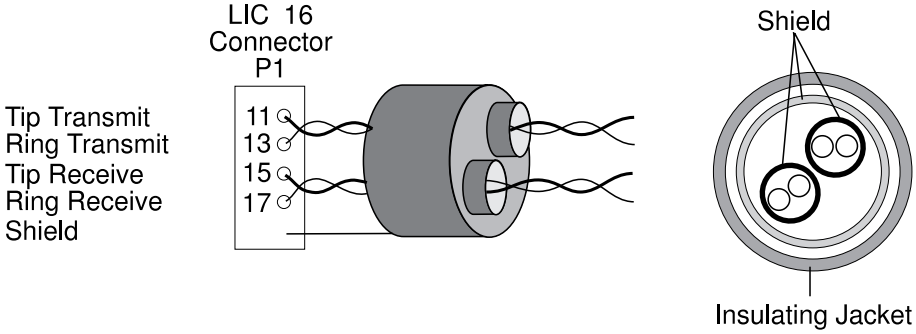


Figure 3-77. LIC16 E1 Cable Pin Assignment

LIC16 E1 Cable List

Table 3-29. LIC16 Cables

Cable Type	Length m(ft)	Cable PN
E1	30 (100)	80G3984

Note: If the customer uses a cable not supplied by IBM, IBM does not guarantee EMC compliance for the 2220 machine.

Homologation and Notes

LIC16 complies with the following EU directives:

EMC - 89/336/EEC

LVD - 73/23/EEC

Telecommunications - 91/263/EEC

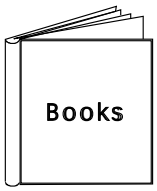
Should the PTT require termination of an ISO/IEC 10173 plug to connect the LIC16 adapter card, then the IBM Service Engineer will terminate such a plug on the flyleads of the cable supplied.

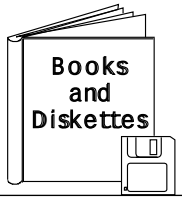
Appendix A. Bibliography

Customer Documentation for the 3745 (Models 210, 310, 410, 610, 21A, 31A, 41A, and 61A), and 3746 (Model 900)

Table A-1 (Page 1 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

This customer documentation has the following formats:





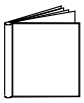
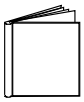
Finding Information		
		3745 Models A and 3746 Books Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.
	SA33-0172	***IBM 3745 Communication Controller*** ***Models 210 to 61A*** ***IBM 3746 Expansion Unit Model 900*** ***Customer Master Index***[1] Provides references for finding information in the customer documentation library.
Evaluating and Configuring		
	GA33-0092	***IBM 3745 Communication Controller*** ***Models 210, 310, 410, and 610*** ***Introduction*** Gives an introduction of the IBM Models 210 to 610 capabilities. For Models A refer to the *Overview*, GA33-0180.
	GA33-0180	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Overview*** Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.

Table A-1 (Page 2 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

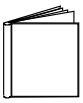
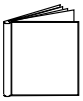
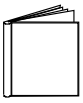
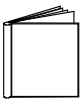
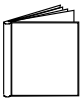
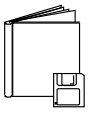
	GA33-0457	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Expansion Unit Model 900*** ***Models 900 and 950*** ***Planning Guide*** Planning for: • Field upgrades • Service processor and alert management configuration • Network integration (NCP, APPN, and IP control) • Physical installation.
Preparing Your Site		
	GC22-7064	***IBM System/360, System/370, 4300 Processor*** ***Input/Output Equipment Installation Manual-Physical Planning*** (Including Technical News Letter GN22-5490) Provides information for physical installation for the 3745 Models 130 to 610. For 3745 Models A and 3746 Model 900, refer to the *Planning Guide*, GA33-0457.
	GA33-0127	***IBM 3745 Communication Controller*** ***Models 210, 310, 410, and 610*** ***Preparing for Connection*** Helps for preparing the 3745 Models 210 to 610 cable installation. For 3745 Models A refer to the *Connection and Integration Guide*, SA33-0129.
Preparing for Operation		
	GA33-0400	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Safety Information***[1] Provides general safety guidelines.
	SA33-0129	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Connection and Integration Guide***[1] Contains information for connecting hardware and integrating network of the 3745 and 3746-900 after installation.
	SA33-0416	***Line Interface Coupler Type 5 and Type 6*** ***Portable Keypad Display*** ***Migration and Integration Guide*** Contains information for moving and testing LIC types 5 and 6.

Table A-1 (Page 3 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900



SA33-0158

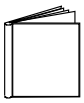
IBM 3745 Communication Controller All Models[3]
IBM 3746 Nways Multiprotocol Controller Model 900

Console Setup Guide[1]

Provides information for:

- Installing local, alternate, or remote consoles for 3745 Models 130 to 610
- Configuring user workstations to remotely control the service processor for 3745 Models A and 3746 Model 900 using:
  - DCAF program
  - Telnet Client program.

Customizing Your Control Program



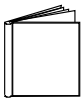
SA33-0178

Guide to Timed IPL and Rename Load Module

Provides VTAM procedures for:

- Scheduling an automatic reload of the 3745
- Getting 3745 load module changes transparent to the operations staff.

Operating and Testing

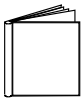


SA33-0098

IBM 3745 Communication Controller
All Models[4]

Basic Operations Guide[1]

Provides instructions for daily routine operations on the 3745 Models 130 to 610.

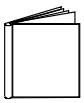


SA33-0177

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller Model 900

Basic Operations Guide[1]

Provides instructions for daily routine operations on the 3745 Models 17A to 61A, and 3746 Model 900 operating as an SNA node (using NCP), APPN/HPR Network Node, and IP Router.



SA33-0097

IBM 3745 Communication Controller
All Models[3]

Advanced Operations Guide[1]

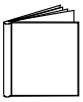
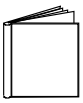
Provides instructions for advanced operations and testing, using the 3745 MOSS console.

On-line Information

Controller Configuration and Management Application

Provides a graphical user interface for configuring and managing a 3746 APPN/HPR Network Node and IP Router, and its resources.
Is also available as a stand-alone application, using an OS/2 workstation.
Defines and explains all the 3746 Network Node and IP Router configuration parameters through its online help.

Table A-1 (Page 4 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

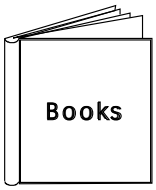
	SH11-3081	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Controller Configuration and Management: User's Guide***[5] Explains how to use CCM and gives examples of the configuration process.
Managing Problems		
	SA33-0096	***IBM 3745 Communication Controller All Models***[3] ***Problem Determination Guide***[1] A guide to perform problem determination on the 3745 Models 130 to 61A.
	On-line Information	***Problem Analysis Guide*** An online guide to analyze alarms, events, and control panel codes on: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.
	SA33-0175	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Alert Reference Guide*** Provides information about events or errors reported by alerts for: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

[1] Documentation shipped with the 3745.
[2] 3745 Models 17A to 61A.
[3] 3745 Models 130 to 61A.
[4] Except 3745 Models A.
[5] Documentation shipped with the 3746-900.

Additional Customer Documentation for the 3745 Models 130, 150, 160, 170, and 17A

Table A-2. Additional Customer Documentation for the 3745 Models 130 to 17A

This customer documentation has the following format:



Finding Information

SA33-0142

IBM 3745 Communication Controller
Models 130, 150, 160, 170, and 17A
IBM 3746 Nways Multiprotocol Controller Model 900

Customer Master Index[1]

Provides references for finding information in the customer documentation library.

Evaluating and Configuring

GA33-0138

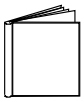
IBM 3745 Communication Controller
Models 130, 150, and 170

Introduction

Gives an introduction about the IBM Models 130 to 170 capabilities, including Model 160.

For Model 17A refer to the *Overview*, GA33-0180.

Preparing Your Site



GA33-0140

IBM 3745 Communication Controller
Models 130, 150, 160, and 170

Preparing for Connection

Helps for preparing the 3745 Models 130 to 170 cable installation.

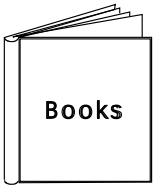
For 3745 Model 17A refer to the *Connection and Integration Guide*, SA33-0129.

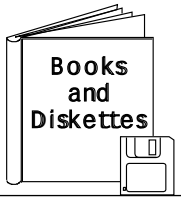
[1] Documentation shipped with the 3745.

Customer Documentation for the 3746 Model 950

Table A-3 (Page 1 of 2). Customer Documentation for the 3746 Model 950

This customer documentation has the following formats:



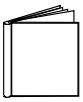


Finding Information

3745 Models A and 3746 Books

Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.

Preparing for Operation



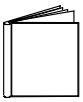
GA33-0400

IBM 3745 Communication Controller All Models[1]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Safety Information[2]

Provides general safety guidelines

Evaluating and Configuring

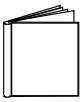


GA33-0180

IBM 3745 Communication Controller Models A[3]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Overview

Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.



GA33-0457

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

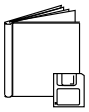
Planning Guide

Planning for:

- Field upgrades
- Service processor and alert management configuration
- Network integration (NCP, APPN, and IP control)
- Physical installation.

Table A-3 (Page 2 of 2). Customer Documentation for the 3746 Model 950

Operating and Testing



SA33-0356

IBM 3746 Nways Multiprotocol Controller Model 950

User's Guide[2]

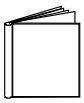
Explains how to:

- Carry out daily routine operations on Nways controller
- Install, test, and customize the Nways controller after installation
- Configure user's workstations to remotely control the service processor using:
  - DCAF program
  - Telnet client program.

On-line information

Controller Configuration and Management Application

Provides a graphical user interface for configuring and managing a 3746 APPN/HPR network node and IP Router, and its resources.
Is also available as a stand-alone application, using an OS/2 workstation.
Defines and explains all the 3746 Network Node and IP Router configuration parameters through its on-line help.



SH11-3081

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Controller Configuration and Management: User's Guide[2]

Explains how to use CCM and gives examples of the configuration process.

Managing Problems

On-line information

Problem Analysis Guide

An on-line guide to analyze alarms, events, and control panel codes on:

- IBM 3745 Communication Controller Models A[3]
- IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

SA33-0175

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Alert Reference Guide

Provides information about events or errors reported by alerts for:

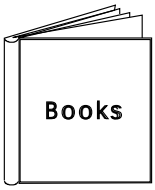
- IBM 3745 Communication Controller Models A[3]
- IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

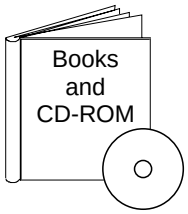
[1] Models 130 to 61A.
[2] Documentation shipped with the 3746-950
[3] 3745 Models 17A to 61A.

Service Documentation for the IBM 3745 (Models 210, 21A, 310, 31A, 410, 41A, 610, and 61A) and 3746 (Model 900)

Table A-4 (Page 1 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

This service documentation has the following formats:





3745 Models A and 3746 Books

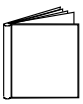
Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.

SY33-2080

IBM 3745 Communication Controller
Models 210 to 61A

Service Master Index[1]

Provides references for finding information in the IBM 3745 Models X10 and X1A shipping group documentation.

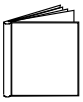


SY33-2057

IBM 3745 Communication Controller
Models 210 to 61A

Installation Guide[1]

Provides instructions for installing or relocating the IBM 3745 Models X10 and X1A.

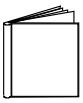


SY33-2114

IBM 3746 Nways Multiprotocol Controller
Model 900

Installation Guide[2]

Provides instructions for installing or relocating a 3746-900.

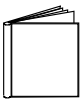


SY33-2116

IBM 3746 Nways Multiprotocol Controller
Model 900

Service Guide[2]

Provides procedures for isolating and fixing the IBM 3746-900 problems.



SY33-2055

IBM 3745 Communication Controller
Models 210, 310, 410, and 610

IBM 3746 Expansion Units
Models A11, A12, L13, L14, and L15

Service Functions[1]

Describes MOSS functions using the IBM 3745 Models X10 and X1A consoles.

Table A-4 (Page 2 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

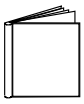
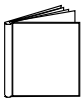
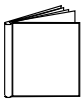
	SY33-2054	***IBM 3745 Communication Controller Models 210 to 61A*** ***Maintenance Information Procedures***[1] Provides procedures for isolating and fixing the IBM 3745 Models X10 and X1A problems.
	SY33-2115	***IBM 3745 Communication Controller Models A***[3] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Service Processor Installation and Maintenance***[4] ***(Based on the 7585, 3172, 9585, or 9577)*** Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, 9585, or 9577. Can be for systems with microcode that has up to and including EC D46130 (any level) installed.
	SY33-2120	***IBM 3745 Communication Controller Models A***[3] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Service Processor Installation and Maintenance***[4] ***(Based on the 7585, 3172, or 9585)*** Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, or 9585. Can be for systems with microcode EC F12380 or higher installed.
	SY33-2118	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Multiaccess Enclosure Installation and Maintenance***[4] Provides information on installing and maintaining the Multiaccess Enclosure (MAE).
	SY33-2112	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Network Node Processor Installation and Maintenance***[4] ***(Based on the 7585 or 3172)*** Provides information on installing and maintaining the network node processor based on the PS/2 Type 7585 or 3172.
	SY33-2056	***IBM 3745 Communication Controller Models 210 to 61A*** ***Maintenance Information Reference***[1] Provides in-depth hardware reference information on the IBM 3745 Models X10 and X1A.

Table A-4 (Page 3 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

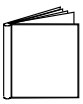
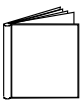
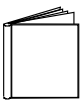
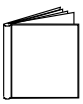
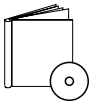
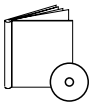
	SY33-2075	***IBM 3745 Communication Controller*** ***All Models***[5] ***External Cable References***[1] Provides references to console and line cables used for connecting the IBM 3745 Models 130 to 61A.
	SY33-2117	***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***External Cable Reference***[6] Provides references to console and line cables used for connecting the IBM 3746 Models 900 and 950.
	S135-2015	***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Parts Catalog***[6] Provides reference information for ordering parts for the IBM 3746 Models 900 and 950.
	S135-2010	***IBM 3745 Communication Controller*** ***Models 210 to 61A*** ***Parts Catalog***[1] Provides reference information for ordering IBM 3745 Models X10 and X1A parts.
	S135-2014	***IBM Controller Expansion*** ***Parts Catalog*** Provides reference information for ordering parts for the controller expansion attached to the IBM 3745 Models A[3], and 3746 Models 900 and 950.

Table A-4 (Page 4 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

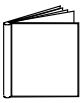
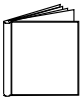
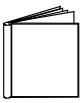
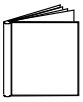
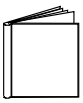
CD-ROM Bibliography		
	ZK2T-8214	***IBM Networking Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. EMEA version.
	ZK2T-8187	***IBM Networking Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. US version.

[1] Documentation shipped with the 3745.
[2] Documentation shipped with the 3746-900.
[3] 3745 Models 17A to 61A.
[4] Documentation shipped with the processor.
[5] 3745 Models 130 to 61A.
[6] Documentation shipped with the 3746 Models 900 and 950.

Additional Service Documentation for the IBM 3745 Models 130, 150, 160, 170, and 17A

Table A-5. Additional Service Documentation for the 3745 Models 1x0 and 17A

This service documentation has the following formats:

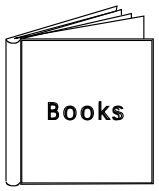
	Books	Online
	SY33-2079	***IBM 3745 Communication Controller Models 130, 150, 160, 170, and 17A*** ***Service Master Index***[1] Provides references for finding information in the IBM 3745 Models 1X0 and 17A shipping group documentation.
	SY33-2067	***IBM 3745 Communication Controller Models 130, 150, 160, 170, and 17A*** ***Installation Guide***[1] Provides instructions for installing or relocating the IBM 3745 Models 1X0 and 17A.
	SY33-2069	***IBM 3745 Communication Controller Models 130, 150, 160, and 170*** ***Service Functions***[1] Describes MOSS functions using the IBM 3745 Models 1x0 and 17A consoles.
	SY33-2070	***IBM 3745 Communication Controller Models 130 to 17A*** ***Maintenance Information Procedures***[1] Provides procedures for isolating and fixing the IBM 3745 Models 1X0 and 17A problems.
	S135-2012	***IBM 3745 Communication Controller Models 130 to 17A*** ***Parts Catalog***[1] Provides reference information for ordering IBM 3745 Models 1X0 and 17A parts.
	SY33-2066	***IBM 3745 Communication Controller Models 130, 150, 160, and 170*** ***Hardware Maintenance Reference***[1] Provides in-depth hardware reference information on the IBM 3745 Models 1X0 and 17A.

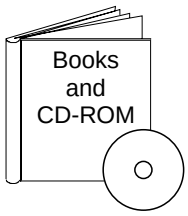
[1] Documentation shipped with the 3745.

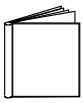
Service Documentation for the IBM 3746 Model 950

Table A-6 (Page 1 of 2). Service Documentation for the 3746 Model 950

This service documentation has the following formats:







SY33-2107

IBM 3746 Nways Multiprotocol Controller Model 950

Installation Guide[1]

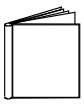
Provides instructions for installing or relocating the Nways Controller.

SY33-2108

IBM 3746 Nways Multiprotocol Controller Model 950

Service Guide[1]

Provides procedures for isolating and fixing the IBM 3746-950 problems.

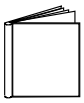


SY33-2115

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor Installation and Maintenance[3]
(Based on the 7585, 3172, 9585, or 9577)

Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, 9585, or 9577. Can be for systems with microcode that has up to and including EC D46130 (any level) installed.

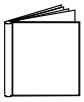


SY33-2120

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor Installation and Maintenance[4]
(Based on the 7585, 3172, or 9585)

Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, or 9585. Can be for systems with microcode EC F12380 or higher installed.



SY33-2118

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Multiaccess Enclosure Installation and Maintenance[4]

Provides information on installing and maintaining the Multiaccess Enclosure (MAE).

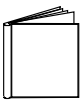
Table A-6 (Page 2 of 2). Service Documentation for the 3746 Model 950

SY33-2112

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Network Node Processor Installation and Maintenance*[3] *(Based on the 7585 or 3172)

Provides information on installing and maintaining the network node processor based on the PS/2 Type 7585 or 3172.

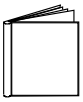


SY33-2117

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

***External Cable Reference*[4]**

Provides references to console and line cables used for connecting the IBM 3746 Models 900 and 950.

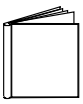


S135-2015

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

***Parts Catalog*[4]**

Provides reference information for ordering parts for the IBM 3746 Models 900 and 950.



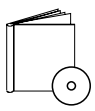
S135-2014

IBM Controller Expansion

Parts Catalog

Provides reference information for ordering parts for the controller expansion attached to the IBM 3745 Models A[2], and 3746 Models 900 and 950.

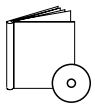
CD-ROM Bibliography



ZK2T-8214

IBM Networking Softcopy Collection Kit

Allows service manuals consulting via CD-ROM viewer. EMEA version.



ZK2T-8187

IBM Networking Softcopy Collection Kit

Allows service manuals consulting via CD-ROM viewer. US version.

[1] Documentation shipped with the 3746 Model 950
[2] 3745 Models 17A to 61A
[3] Documentation shipped with the processor
[4] Documentation shipped with the 3746 Models 900 and 950

List of Abbreviations

AUI	Access Unit Interface
BSC	binary synchronous communication
CCITT	Consultative Committee on International Telegraph and Telephone
CD	carrier detector (signal)
CTS	clear to send (signal, same as RFS)
DCE	data-circuit-terminating equipment
DCRLSD	data channel receive line signal detector (same as CD)
DRS	data rate select (signal)
DSR	data set ready (signal)
DTE	data terminal equipment
DTR	data terminal ready (signal)
EIA	Electronic Industries Association
EMEA	European, Middle Eastern, and African countries
ESS	Ethernet subsystem
FESH	front-end scanner (high-speed)
HPTSS	high-performance transmission subsystem
HSS	high-speed scanner
LIC	line interface coupler card
LSS	low-speed scanner
MAU	media access unit
MOSS	maintenance and operator subsystem
NCTE	network communication terminal equipment
PC	personal computer
PKD	portable keypad display
PT2/3	portable tool 2/3
RD	receive data (signal)
RFS	ready for sending (signal), same as CTS
RI	ring indicator (signal)
RLSD	receive line signal detector
RPQ	request for price quotation
RSF	remote support facility
RLSD	receive line signal detector (same as CD)
RTS	request to send (signal)
SDLC	synchronous data link control
TD	transmitted data (signal)
TI	test indicator (signal)
TIC	token-ring interface coupler card
TRSS	token-ring subsystem
TSS	transmission subsystem

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3746 Nways Multiprotocol Controller
Models 900 and 950
External Cable References

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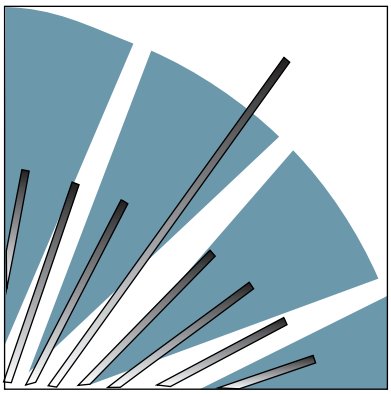

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