Model 560-197-12
56000 Data Rate Clock and Distribution System Chassis
Specification

SECTION ONE

SECTION ONE

1. FUNCTIONAL DESCRIPTION

1.1 PURPOSE OF EQUIPMENT

The TrueTime Model 560-197-12 Data Rate Clock and Distribution System (DRC) Chassis provides volume distribution of Hughes Network Systems HNSTC custom time code. A total of eighteen (12) buffered distribution channels are provided with the option to expand in increments of six (6) channels up to a total of sixty (60).

Input signals are redundant and switchable while fault sense, switching and monitoring are provided via internal CPU. Hot Swappable redundant power supplies provide input power insuring improved availability of distribution.

1.1.1 PHYSICAL SPECIFICATIONS

Dimensions:	19”w X 5.22”h X 14”d (48 cm X 13 cm X 36 cm)
Weight:	Approximately 13 pounds (6 kg)

1.1.2 ENVIRONMENTAL SPECIFICATIONS

Operating Temp:	0° to +50°C
Storage Temp:	-40° to +85°C
Humidity:	Up to 95% max., relative, non-condensing
Cooling Mode:	Convection
Altitude	Sea level to 10,000 feet

1.1.3 POWER SPECIFICATIONS

This specification reflects the signal supply stand alone power ratings.

Input Voltage:	100-240 VAC (continuous), 47-63 Hz
Input Power:	135 W maximum
Fuse	3 Amp 3AG SLO-BLO
Output Power:	See table below
Output Voltage:	56 VDC ±5%

Maximum Output Power:

INPUT	AMBIENT	AIRFLOW	OUTPUT
100-240 VAC	50°C	CONVECTION	90 W

Maximum Power
as Configured: 30 Watts *

*add 5 Watts for each group of 6 HNSTC outputs beyond the configured 18.

1.1.4 CONNECTOR SPECIFICATIONS

Location: Power Entry Module
Mating Connector: IEC320 Connector

1.2 INPUT/ OUTPUT

1.2.1 HNSTC

Signal Type: Balanced RS-422 Serial Time Code
Connector Type: RJ-12

1.2.2 CPU INPUT/OUTPUT

Connector Type: DB-9M
Connector Pinout:
- Pin 1: OUT 1
- Pin 2: RXD / RS-232 In
- Pin 3: TXD / RS-232 Out
- Pin 4: OUT 2
- Pin 5: SIGNAL GND
- Pin 6: RIN- / Differential- In
- Pin 7: RIN+ / Differential+ In
- Pin 8: TOUT- / Differential- Out
- Pin 9: TOUT+ / Differential+ OutSerial

I/O: RS-232/422 selectable

1.3 DISTRIBUTION

1.3.1 HNSTC

Connector Type: RJ-12
Signal Type: RS-422 OUTPUTS
Quantity: 18 pairs (Optional up to 60 pairs)
Signal Type: Differential, centered at 2.5 VDC
Amplitude: 2.8 Vpp into 100 ohms
Signal Delay: < 60 ns
Output Drive Compliance:
MIL-STD-188-124A TYPE II BALANCED
RS-422-A

1.4 CERTIFICATIONS

1.4.1 CE COMPLIANT

This unit is CE compliant. Declaration of Conformity is included at the front of this product manual in the form of an addendum.

Conditions for acceptability:

1. The unit must be mounted in a rack or other device, which contains adequate bottom containment.
2. If the unit is operated over 140 V input at up to 80 W input, forced air cooling of 120 CFM must be provided to the bottom of the unit. If the device is operated over 140 V input at up to 110 W input, 210 CFM must be provided to the bottom of the unit.

1.4.2 UR AND C-UR RECOGNIZED

This unit is UR and C-UR recognized and shall be marked as such. The conditions for acceptability include the requirement that the unit be installed in a rack or other device that provides adequate bottom containment. Other conditions for acceptability are established by the power supplies (model 560-5217) used within this configuration are listed below.

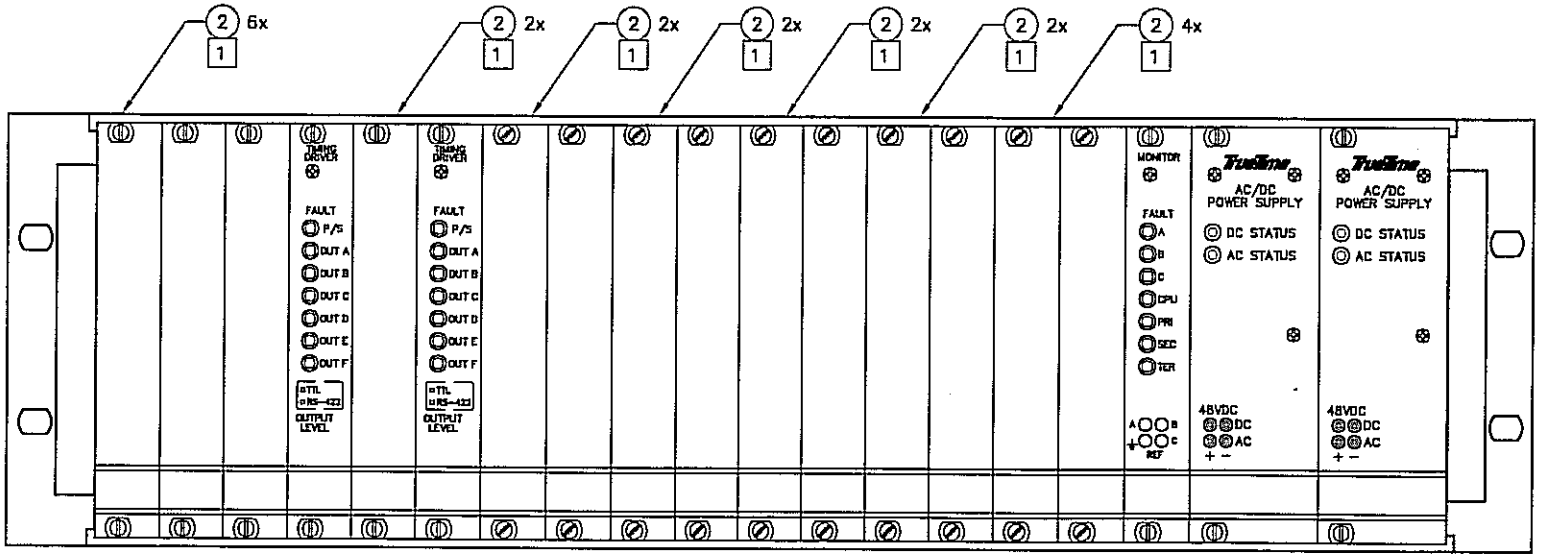
Power Supply 560- 5217 conditions of acceptability:

The use of the 560-5217 power supply is CE compliant and UR and C-UR recognized.

1.5 DEMONSTRATED MEAN TIME BETWEEN FAILURE (MTBF)

MTBF: Similar configuration of model 560-197-X demonstrate 408966 Hours based on 118 units in field for 68161 days and 4 returns.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
B	ECO 1720	05/09/02	SBK



FRONT VIEW

1 INSTALL AIRFLOW BARRIERS (ITEM 2) OVER THE TOP AND BOTTOM CARD GUIDES WHERE INDICATED.

NOTES: UNLESS OTHERWISE SPECIFIED.

FILENAME: \MISC\560-197-12A
DATE: 05-09-02

CONTRACT NO.

APPROVALS		DATE
DRAWN BY	RNR	06/01
CHECKED BY		
APPROVED BY	JG	09/01

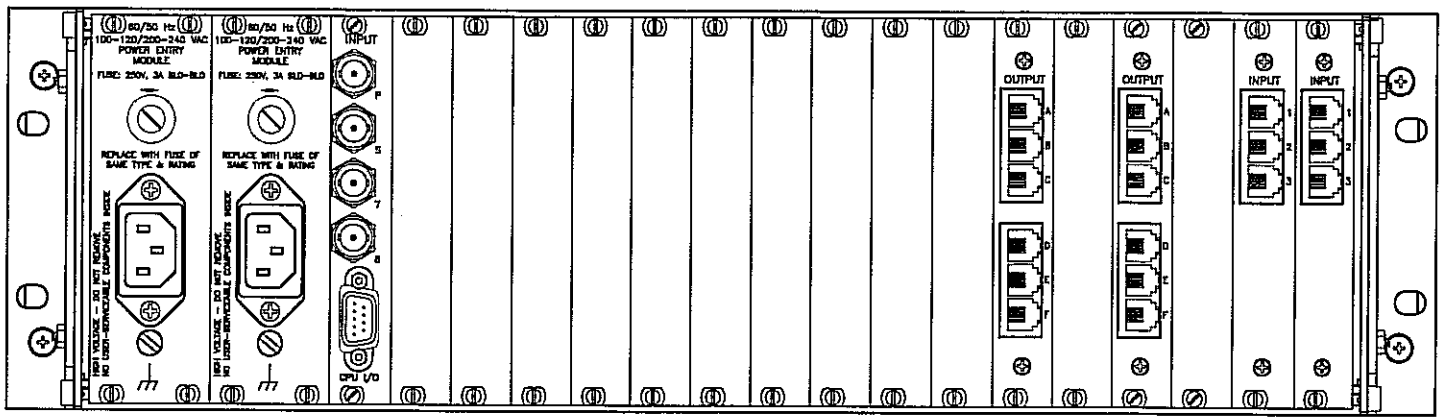
NEXT ASSY

TRUETIME

56K SIGNAL DISTRIBUTION CHASSIS

SIZE	CODE IDENT NO.	DRAWING NO.	REV
B		560-197-12	B

SCALE NONE SHEET 1 OF 6



REAR VIEW

TRUETIME

SIZE	CODE IDENT NO.	DRAWING NO.	REV
B		560-197-12	B

FILENAME: \MISC\560-197-12B
DATE: 04-10-02

SCALE NONE

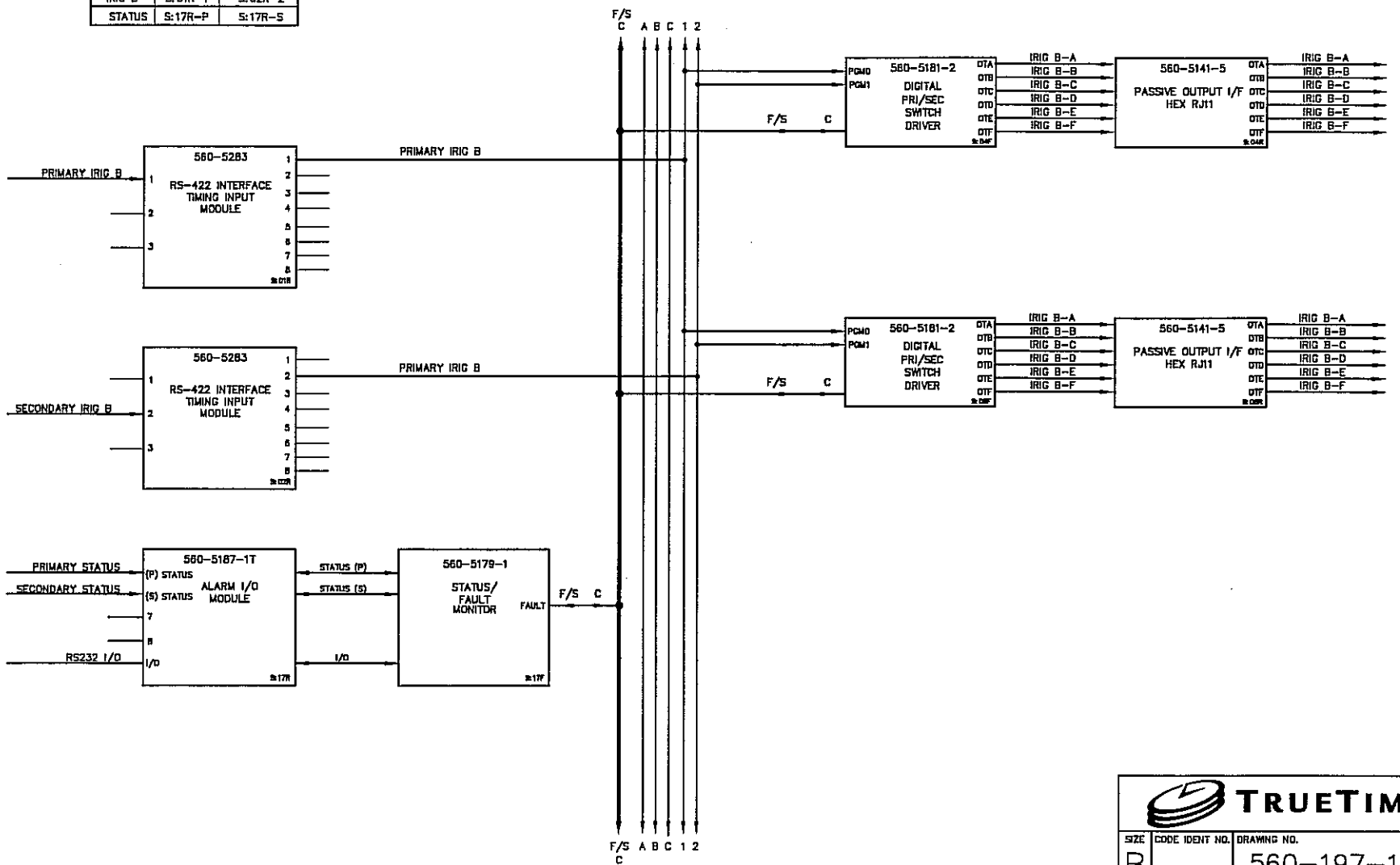
SHEET 2 OF 6

56000 CHASSIS
PART OF 560-197-12

CHASSIS WITH DUAL AC POWER SUPPLIES

F/S = FAULT/STATUS
C = EMBEDDED CONTROL

INPUTS		
SIGNAL	PRI	SEC
IRIG B	S:01R-1	S:02R-2
STATUS	S:17R-P	S:17R-S



TRUETIME

SIZE	CODE IDENT NO.	DRAWING NO.	REV
B		560-197-12	B

FILENAME: \MISC\560-197-12C
DATE: 04-10-02

SCALE NONE

SHEET 3 OF 6

CARD SLOT ALLOCATION TABLE FOR SYSTEM 560-197-12

ORIGINAL

S/N:_____

SLOT	FRONT	REAR
1	BLANK P/N: 560-1107	RS-422 INTERFACE TIMING INPUT MODULE P/N: 560-5283
2	BLANK P/N: 560-1107	RS-422 INTERFACE TIMING INPUT MODULE P/N: 560-5283
3	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
4	PRI/SEC SWITCH/DRIVER P/N: 560-5181-2	PASSIVE OUTPUT RJ11 P/N: 560-5141-5
5	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
6	PRI/SEC SWITCH/DRIVER P/N: 560-5181-2	PASSIVE OUTPUT RJ11 P/N: 560-5141-5
7	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
8	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
9	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
10	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
11	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
12	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
13	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
14	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
15	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
16	BLANK P/N: 560-1107	BLANK P/N: 560-1181-6
17	STATUS FAULT MONITOR P/N: 560-5179-1	ALARM I/O MODULE P/N: 560-5187-1T
18 19	AC POWER SUPPLY P/N: 560-5217	POWER ENTRY, AC INPUT, P/N: 560-1222-2
20 21	AC POWER SUPPLY P/N: 560-5217	POWER ENTRY, AC INPUT, P/N: 560-1222-2

ORIGINAL

Assembly Switch Summary
For Chassis 560-197-12

Shaded Areas designate no Switch Position UPDATED: 04/04/02

1. Chassis 560-197-2 Backplane switch settings:

Assembly Switch Designator	Switch position 1	Switch position 2	Switch position 3	Switch position 4	Switch position 5	Switch position 6	Switch position 7	Switch position 8
560-5165 (Back plane Assembly) SW1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

2. Front Card slots 4, 6: 560-5181-2 (DIGITAL PRI/SEC SWITCH/DRIVER) IRIG B RS-422

Assembly Switch Designator	Switch position 1	Switch position 2	Switch position 3	Switch position 4	Switch position 5	Switch position 6	Switch position 7	Switch position 8
SW1	*ON*	OFF	OFF	OFF				
SW2	OFF	*ON*	OFF	OFF				
SW3	OFF	OFF	*ON*	OFF				
SW4	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW5	*ON*	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW6	OFF	*ON*	OFF	OFF	OFF	OFF	OFF	OFF
SW7	*ON*	*ON*	*ON*	*ON*	*ON*	*ON*	*ON*	OFF

3. Front Card slot 17: 560-5179-1 (Fault /Status Monitor CPU)

Assembly Switch Designator	Switch position 1	Switch position 2	Switch position 3	Switch position 4	Switch position 5	Switch position 6	Switch position 7	Switch position 8
SW1	*ON*	*ON*	*ON*	OFF				
SW3	*ON*	OFF	OFF	OFF				

4. FRONT Card slots 18-19: 560-5217 (AC Power Supply)
NO USER SWITCHES

5. FRONT Card slots 20-21: 560-5217 (AC Power Supply)
NO USER SWITCHES

56K Chassis cont.

6. Rear Card slot 1: 560-5283 RS-422 INTERFACE INPUT MODULE (IRIG B RS-422)

Assembly Switch Designator	Jumper position 1 - 2	Jumper position 3 - 4	Jumper position 5 - 6	Jumper position 7 - 8	Jumper position 9 - 10	Jumper position 11 - 12	Jumper position 13 - 14	Jumper position 15 - 16
JP1	X							
JP2								
JP3								

7. Rear Card slot 2: 560-5283 RS-422 INTERFACE INPUT MODULE (IRIG B RS-422)

Assembly Switch Designator	Jumper position 1 - 2	Jumper position 3 - 4	Jumper position 5 - 6	Jumper position 7 - 8	Jumper position 9 - 10	Jumper position 11 - 12	Jumper position 13 - 14	Jumper position 15 - 16
JP1								
JP2		X						
JP3								

8. Rear Card slots 4, 6: 560-5141-5 (Passive Output I/F RJ11)
NO USER SWITCHES

9. Rear Card slot 17: 560-5187-1T (Alarm I/O Module)
NO USER SWITCHES

56K CHASSIS PROGRAMMING FOR SYSTEM 560-197-12

ENTER THE FOLLOWING COMMANDS TO PROGRAM THE CPU CARD:

```
TPRI=P
TSEC=S
PSRC=D
SSRC=D
TSRC=O
SITE=nn        ;where nn = Chassis Number 02 -99
PROFF
AROFF
PRI
REF
```

R30410

TrueTime, Inc.
Single Level Bill of Material Report

ORIGINAL

Date - 5/9/2002
Time - 10:41:01
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SBK

Parent Item / Component Item	Parent Description / Component Descripiton	Batch Quantity / Quantity Per	UM	Bubble Seq No	Remarks	Level	Ty	Seq	T	Effective From	Effective Thru
560-197-12	SIGNAL DISTRIB CHASSIS		EA	Type M	~~Rev IM~~	Draw 560-197-12					
0000-PL	PARTS LIST REV LEVEL	1.00	EA		REV B (05-09-02)	1	S	2.0	M	1/1/2000	12/31/2010
0000-PRINT	REFERENCE PRINT	1.00	EA		560-197-12 REV B	1	S	3.0	M	1/1/2000	12/31/2010
212-011	AIR FLOW BARRIER 4HP (1 SLOT)	20.00	EA	2		1	S	14.0	P	5/1/2002	12/31/2010
560-1107	ASSY FRT PNL BLANK .8 IN.	14.00	EA			1	S	4.0	P	1/1/2000	12/31/2010
560-1181-6	ASSY,REAR PANEL	12.00	EA			1	S	5.0	P	1/1/2000	12/31/2010
560-1222-2	ASSY AC PWR ENTRY MODULE	0.00	EA		REF. (PART OF 560-197-2)	1	S	13.0	M	9/14/2000	12/31/2010
560-197-2	SIGNAL DISTRIB CHASSIS	1.00	EA			1	S	6.0	M	1/1/2000	12/31/2010
560-5141-5	PASSIVE OUT INTFC,RJ11	2.00	EA			1	S	7.0	M	1/1/2000	12/31/2010
560-5179-1	ASSY FAULT MONITOR/CPU	1.00	EA			1	S	8.0	M	1/1/2000	12/31/2010
560-5181-2	DC SWITCH/TIMING DRVR,HEX	2.00	EA			1	S	9.0	M	1/1/2000	12/31/2010
560-5187-1T	CPU I/O MODULE,QUAD INPUT	1.00	EA			1	S	10.0	M	1/1/2000	12/31/2010
560-5217	ASSY 56K PWR SUPPLY	0.00	EA		REF. (PART OF 560-197-2)	1	S	12.0	M	9/14/2000	12/31/2010
560-5283	ASSY 56K REAR CONN RS422	2.00	EA			1	S	11.0	M	1/1/2000	12/31/2010