

TrueTime

Model 560-5187-1S CPU I/O / Status Input Module Manual

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SECTION ONE

1. FUNCTIONAL DESCRIPTION

1.1. PURPOSE OF EQUIPMENT

The TrueTime Model 560-5187-1S CPU I/O / Frequency Reference Input Module provides an input/output interface, via a Male DB-9 connector (labeled CPU I/O), between the Fault Monitor / CPU and the user. Additionally, it provides an input interface to the CPU, via BNC connectors labeled (P, S and T), for Primary, Secondary, and Tertiary Source status. The use of these signals is described in the manual section for the compatible CPU.

1.1.1. PHYSICAL SPECIFICATIONS

Dimensions: 0.8" w X 4.4" h X 5.0" d (2 cm X 11 cm X 13 cm)
Weight: Approximately ½ pound (¼ kg)

1.1.2. ENVIRONMENTAL SPECIFICATIONS

Operating Temp: 0° to +50°C
Storage Temp: -40° to +85°C
Humidity: Up to 95% relative, non-condensing
Cooling Mode: Convection

1.1.3. POWER REQUIREMENTS

Power: None

1.1.4. CPU INPUT/OUTPUT

Connector Type: DB-9M

Connector Pinout:

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

1.1.5. STATUS INPUTS P, S AND T

Connector Type: BNC
Signal Type: As specified in manual for compatible CPU.

1.1.6. CARD COMPATIBILITY

Location: Slot 1-17 with compatible card in front slot.
Compatibility: See Card Compatibility Matrix.

SECTION TWO

2. INSTALLATION AND OPERATION

2.1. HOT-SWAPPING

All cards, input cables and output cables are hot swappable. It is not necessary to remove chassis power during insertion or removal. The system is designed to protect against permanent effects and minimize any temporary effects of hot swapping.

2.2. REMOVAL AND INSTALLATION

Refer to CARD COMPATIBILITY section prior to installing new card.

To remove card, loosen the captive retaining hardware at the top and bottom of the assembly, then firmly pull on the handle (or on any connector on rear panel adapter cards) at the bottom of the card. Slide the card free of the frame. Refer to the SETUP section for any required switch settings; or, set them identically to the card being replaced. Reinstall the card in the frame by fitting it into the card guides at the top and bottom of the frame and sliding it in slowly, avoiding contact between bottom side of card and adjacent card front panel, until it mates with the connector. Seat card firmly to avoid contact bounce. Secure the retaining screws at the top and bottom of the card assembly.

2.3. SETUP

This card has no setup requirements.

2.4. FAULT INDICATION

This card has no fault indication.

2.5. MAINTENANCE

This card has no maintenance requirements.

SECTION THREE

3. THEORY OF OPERATION

3.1. GENERAL INFORMATION

This section contains a detailed description of the circuits in the CPU I/O Module. These descriptions should be used in conjunction with the drawings in SECTION FOUR.

3.2. HARDWARE DESCRIPTION

The Module incorporates various connectors and comes in various configurations controlled by component installation. Use the Bill of Materials in conjunction with the Schematic to determine the exact configuration of this version.

The DB-9M connector, J5, supports RS-232 and differential communications to/from the CPU and a status output from the CPU. The signaling protocol is dependent on the card installed in the front slot.

The Module also has three BNC connectors, J2, J3, and J4, which are used as status inputs as defined in the compatible CPU manual.

SECTION FOUR

4. DETAILED DRAWINGS

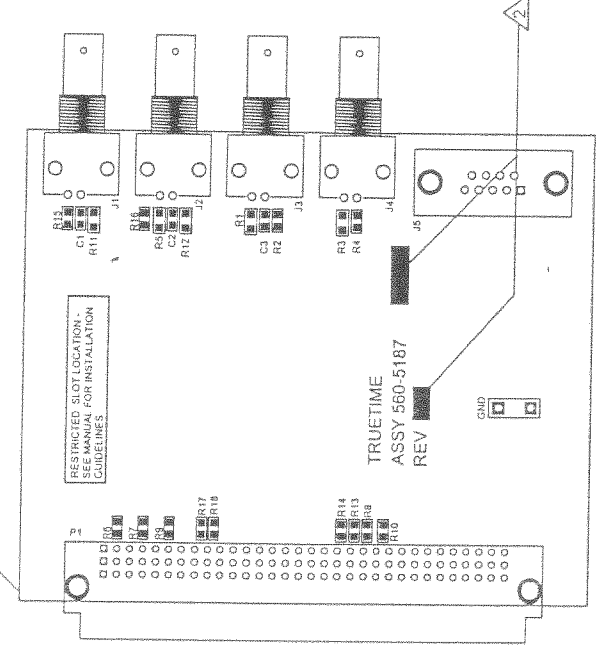
4.1. 560-5187-1S DETAILED DRAWINGS / BILL OF MATERIALS

MAX * BILL OF MATERIALS * SINGLE-LEVEL EXPLOSION BY PART IDENTIFIER W/REFERENCE

PART IDENTIFIER	DESCRIPTION 1	DESCRIPTION 2	EFF DATE	ECN #	QTY/ASSY	UOM	REV LVL	REFERENCE DESCRIPTION
560-5187-1S	CPU I/O MODULE, QUAD INPUT MADE FROM 560-2187						EA	
0000-APPROVAL	PARTS LIST APPROVAL		000000		1.0000	EA		<i>1/99</i>
0000-PL	PARTS LIST REV LEVEL		000000		1.0000	EA		REV E (01-29-99)
0000-PRINT	REFERENCE PRINT		000000		1.0000	EA		SEE 560-5187
0000-REV	PCB REV LEVEL HERE >>>>		000000		1.0000	EA		560-2187 REV C
002S-000	RES 0 OHM 1/4W 0805	NIC NRC10Z0TR	000000		2.0000	EA		R17,18
002S-787R	RES 78.7 OHM 1/4W 1206 1%	NIC NRC12F78R7TR	000000		3.0000	EA		R1,3,5
223-138	SCREW SH CH ZN M2.5X10	SCHROFF #21100-138	000000		2.0000	EA		03
223-144	NUT M2.5	SCHROFF #21100-144	000000		2.0000	EA		04
223-379	SCREW CAP NP M2.5 X 11	SCHROFF #21100-379	000000		2.0000	EA		07
223-464	SLEEVE, STAINLESS	SCHROFF 21100-660	000000		2.0000	EA		08
273-009	TERMINAL TEST POINT	COMP CORP PJ-201-25	000000		1.0000	EA		GND
274-009	PLUG HOLE NYL BLK 1/2 IN.	HEYCO 2643	000000		1.0000	EA		09
372-09P	CONN 9-P D-SUB RT ANG ML	AMP 748879-1 (BOM NAV)	000000		1.0000	EA		J5
372-609-003	JACK SOCKET SET OF 2	THOMAS & BETTS 609-003	000000		1.0000	EA		FOR J5
372-96RA	CONN, 96-P FM DIN RT ANGLE	BERG 68353-296	000000		1.0000	EA		P1
375-022	LOCKWASHER, BNC PC MT	AMP 1-329632-2	000000		4.0000	EA		10
375-023	NUT BNC PC MT	AMP 1-329631-2	000000		3.0000	EA		
	05 (J2-J4) DO NOT USE THE NUT THAT COMES WITH THE CONNECTOR.							
375-227677-1	CONN BNC PC MT	AMP 227677-1	000000		3.0000	EA		06 (J2-J4)
391-004	ADAPTER FOR RS PORT	FAITECH MCM70029	000000		1.0000	EA		SHIPPING KIT
560-1231-3	REAR PNL, CPU I/O QUAD	SCREEN	000000		1.0000	EA		02
560-2187	CPU I/O MODULE, QUAD INPUT FAB		000000		1.0000	EA		01
LA	LABOR ASSEMBLY COST HRS		000000		0	EA		
LT	LABOR TEST COST HOURS		000000		0	EA		
NOTE 1			000000		1.0000	EA		
	DO NOT INSTALL: R2,R4,R6-16 C1,C2,C3 J1							
OSV560-5187-1S	OUTSIDE LABOR 560-5187-1S PCA		000000		1.0000	EA		

NOTES: UNLESS OTHERWISE SPECIFIED
 1. RESISTORS ARE IN OHMS AND CAPACITORS ARE IN MICRO FARADS
 2. STAMP REVISION LEVEL AND DASH NUMBER
 3. ASSEMBLE PER ASSEMBLY REQUIREMENTS DOCUMENT 421-11.

LTR	DESCRIPTION	DATE	APPROVED
A	J5 MOVED BACK .100"	8-1-97	
B	DESIGN UPDATE	9-19-97	
C	ECO 1153 MOVE TRACE (CAR #731)	4-30-98	
D	CAR 1381	1-25-99	
E	ECO 1286 CHANGED 560-5187-2F VIEW	12-16-99	



TrueTime, Inc. Santa Rosa, California	
Time	ASSY DRAWING
Site	CPU I/O, QUAD INPUT MODULE
Number	B
Rev	E
Date	12-16-99
Filename	2187C.PCB
Sheet	1 of 3

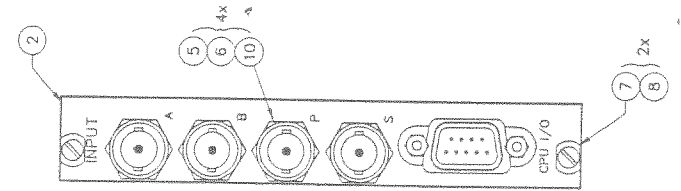
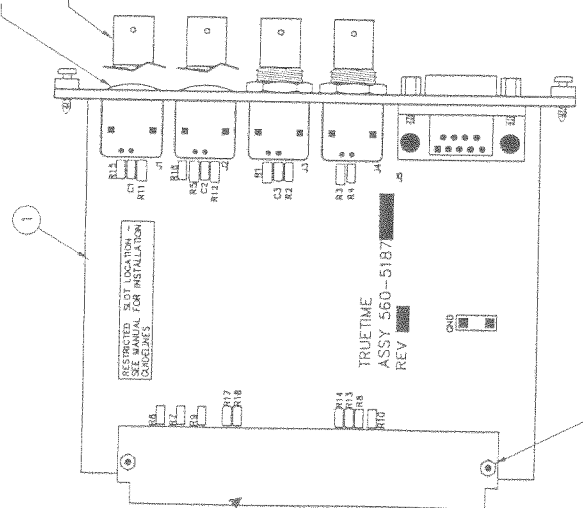
CONTRACT NO	APPROVALS	DATE
	S.B.K.	5-4-97
DRAWN BY	CHECKED	
APPROVED		
NEXT ASSY		

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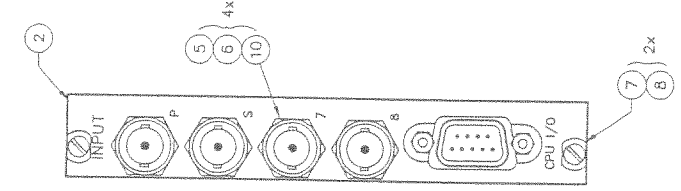
FOR -1S & -2F
ASSEMBLIES ONLY

FOR -1F & -1T
ASSEMBLIES ONLY



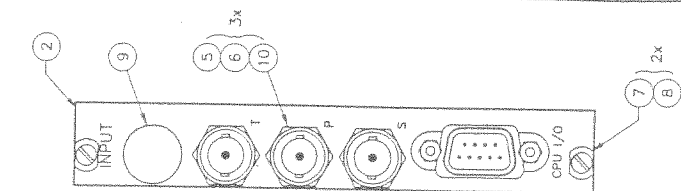
-1F

REFERENCE MODE
VERSION



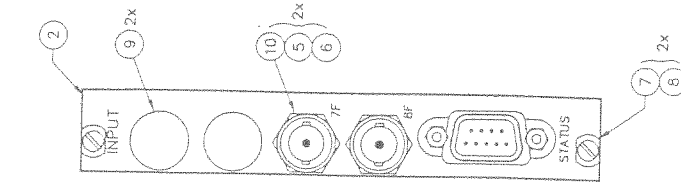
-1T

STATUS & TIMING
VERSION



-1S

STATUS
VERSION



-2F

INPUT MODE
VERSION

TRUE TIME
ASSY 560-5187
REV

TrueTime
Where Customer Support is a Priority
2835 Duke Ct. Santa Rosa, CA 95407

FILENAME: \560\5187
DATE: 12-14-99

SIZE: B CODE IDENT NO: 560-5187 REV: E
SCALE: NONE SHEET 2 OF 3