

# *TrueTime*

## Model 560-5141-2i Wire-Wrap Passive Input Interface Manual

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# SECTION ONE

## 1. GENERAL INFORMATION

### 1.1. PURPOSE OF EQUIPMENT

The TrueTime Model 560-5141-2i Wire-Wrap Passive Input Interface provides the input interface for a compatible front function card. The 6 +Inputs and 6 -Inputs are fed directly through the backplane connector from the front function card. The input signals are distributed via 100 ohm differential traces from wire-wrap pins at the rear panel, optimized for use in differential mode with 100 ohm +Input/-Input termination. They can be used individually in single-ended mode, referenced to ground. There is a ground pin associated with each pair of ±Inputs.

#### 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: -17° to +100°C  
Humidity: Up to 95% relative, non-condensing  
Cooling Mode: Convection

#### 1.1.3. POWER REQUIREMENTS

Power: None

#### 1.1.4. FUNCTIONAL SPECIFICATIONS

##### 1.1.4.1. INPUT CONNECTOR

Type: Wire-wrap pins, 0.045" square  
Quantity: 18  
Configuration: 6 complementary pairs --- ±Input with GND

##### 1.1.4.2. DRC CARD COMPATIBILITY

Location: Slot 1-17 with compatible function card in front slot.  
Compatibility: See DRC 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

**CAUTION: Individual components on this card are sensitive to static discharge. Use proper static discharge procedures during 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 Passive Input card. These descriptions should be used in conjunction with the drawings in SECTION FOUR.

#### 3.2. HARDWARE DESCRIPTION

The Passive Input card incorporates 6 sets of wire-wrap input pins. Each set of pins includes a complementary  $\pm$ Input pair with local control of over-shoot and under-shoot.

#### 3.3. DETAILED DESCRIPTION

Reference drawing 560-5141-2i. Each wire-wrap pin is sourced via the backplane connector from individual drivers on the front function card via 100 ohm complementary controlled-impedance traces on the Passive Input card.

An optional 1N5817 Schottky diode can be located at each  $\pm$ Input wire-wrap pin to control over-shoot and under-shoot. It is normally reverse-biased, minimizing over-shoot via the slight rise-time roll-off due to the reverse-bias capacitance and the driver input impedance. Under-shoot forward-biases the diode, minimizing the under-shoot amplitude by shunting the signal to ground.

## **SECTION FOUR**

### **4. DETAILED DRAWINGS**

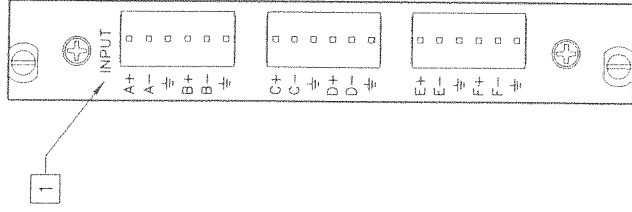
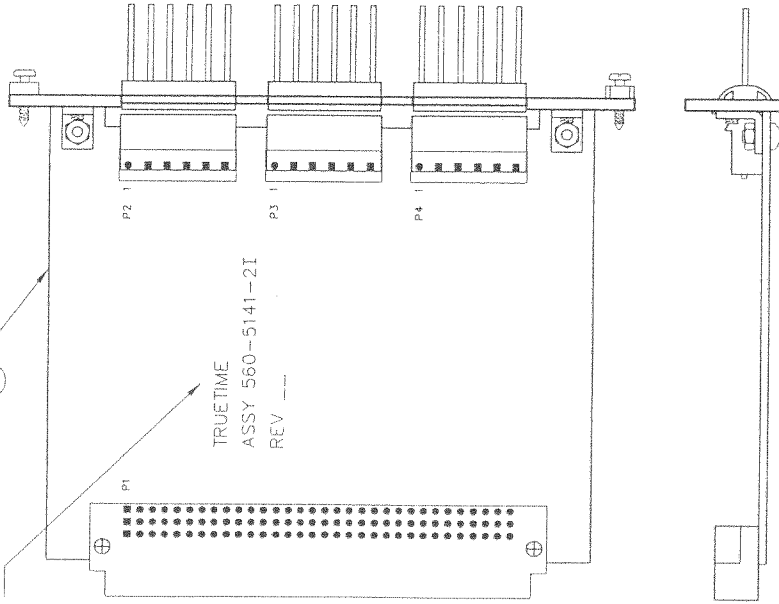
4.1. 560-5141-2i DETAILED DRAWINGS / BILL OF MATERIALS

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STAMP P/N AND  
 REV LEVEL WHERE SHOWN



REVISIONS

REV	DESCRIPTION	DATE	APPROVED

CONTRACT NO.

APPROVALS  
 DRAWN BY RNR  
 CHECKED BY [Signature]  
 APPROVED BY [Signature]

DATE  
 11/99  
 11/99

ASSY, PASSIVE  
 INPUT INTERFACE W/W

REV N/C  
 SIZE B  
 CODE IDENT NO. DRAWING NO. 560-5141-21

SCALE NONE

SHEET 1 OF 1

FILENAME: \560\5141-21  
 DATE: 11-05-99

1 RE-LABEL PANEL AS SHOWN.  
 NOTES: UNLESS OTHERWISE SPECIFIED

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

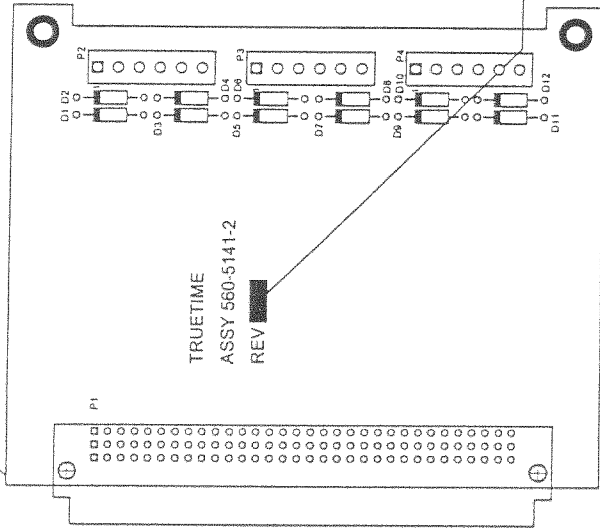
PART IDENTIFIER	DESCRIPTION 1	DESCRIPTION 2	EFF DATE	ECN #	QTY/ASSY	REV UOM LVL	REFERENCE DESCRIPTION
560-5141-2I	PASSIVE INTFC W/W PINS	INPUT				EA	
0000-APPROVAL	PARTS LIST APPROVAL		000000		1.0000	EA	
0000-PL	PARTS LIST REV LEVEL		000000		1.0000	EA	
0000-PRINT	REFERENCE PRINT		000000		1.0000	EA	
560-5141-2	PASSIVE OUTPUT INTFC W/W	MADE FROM 560-2141-2	000000		1.0000	EA	
LA	LABOR ASSEMBLY COST HRS		000000		0	EA	
LT	LABOR TEST COST HOURS		000000		0	EA	
NOTE 1			000000		1.0000	EA	
	RE-LABEL PANEL AS DESCRIBED BELOW: REMOVE "OUTPUT" RE-LABEL SAME LOCATION AS "INPUT"						

*11/99*

REV N/C (11-08-99)  
560-5141-2I REV N/C  
01

NOTES: UNLESS OTHERWISE SPECIFIED

1. VALUES OF RESISTORS ARE IN OHMS AND CAPACITORS ARE IN uf
2. STAMP REVISION LEVEL.
3. ASSEMBLE PER ASSEMBLY REQUIREMENTS DOCUMENT 421-11.
4. DO NOT INSTALL D1-D12.



REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	ADDED DIODES (D1-12)	10-7-96	

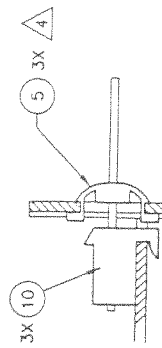
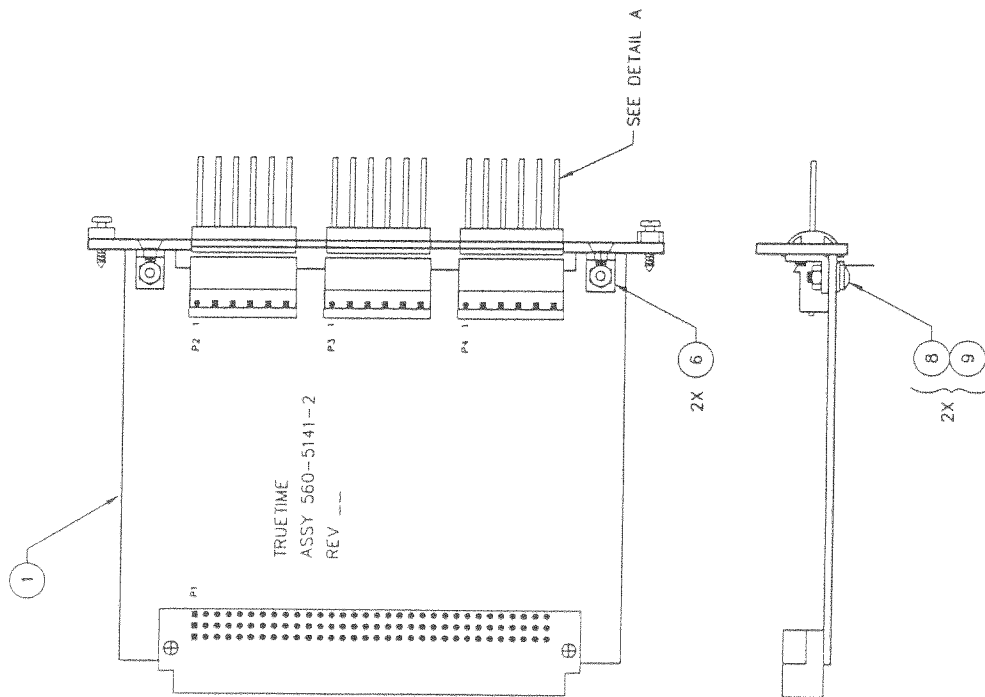
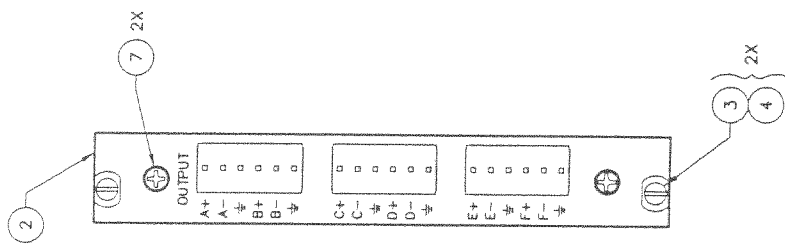
TrueTime, Inc.  
Santa Rosa, California

Title		ASSY DRAWING	
Drawn By	APPROVALS	DATE	
Checked	REC	5-13-96	
Approved			
Next Assy			
Size	Number		Rev
B	560-5141-2		A
Date	10-4-96		
Partname	2141-2A.PCB	Sheet	1 of 3
		REC	

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DETAIL A

4 INSTALL HEADER (ITEM 5) THRU FRONT PANEL (ITEM 2) BEFORE SECURING PANEL TO PC BOARD (ITEM 1).  
NOTES: CONT'D

FILENAME: \560\5141-2B	SCALE: NONE	CODE IDENT NO:	DRAWING NO:	REV:
DATE: 11-1-96		B	560-5141-2	A
				SHEET 2 OF 3

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
560-5141-2	PASSIVE OUTPUT INTFC W/W	MADE FROM 560-2141-2					EA	
0000-APPROVAL	PARTS LIST APPROVAL				1.0000		EA	<u>DJX 3/27</u>
0000-PL	PARTS LIST REV LEVEL				1.0000		EA	REV A (02-28-97)
0000-PRINT	REFERENCE PRINT				1.0000		EA	560-5141-2 REV A
0000-REV	PCB REV LEVEL HERE >>>>				1.0000		EA	560-2141-2 REV A
208-001	BRACKET UNIV L SHAPE	KEystone 612			2.0000		EA	06
223-379	SCREW CAP NP M2.5 X 11	SCHROFF #21100-379			2.0000		EA	03
223-464	SLEEVE, STAINLESS	SCHROFF 21100-660			2.0000		EA	04
240-004-003	SCREW PH PN SS 4-40X3/8	SCREW PAN			2.0000		EA	09
241-004-002	SCREW PH FH SS 4-40X1/4	BUY/USE ONLY 100 DEGREE			2.0000		EA	07
251-004	MUT KEP SS 4-40	KEPNUT			2.0000		EA	08
372-96RA	CONN, 96-P FM DIN RT ANGLE	BERG 68353-296			1.0000		EA	P1
401-01-01-06C	CONN 6-P CHASSIS MT	MOLEX 09-78-1061			3.0000		EA	05
401-01-01-06P	CONN 6-P PC MT	MOLEX 09-62-3061			3.0000		EA	10 (P2-4)
560-1211	PANEL, REAR (W/W PINS)	FAB/SCREEN			1.0000		EA	02
560-2141-2	PCB HEX OUTPUT INTFC(W/W)	FAB			1.0000		EA	01
LA	LABOR ASSEMBLY COST HRS				0		EA	
LT	LABOR TEST COST HOURS				0		EA	
NOTE 1					1.0000		EA	DO NOT INSTALL D1-D12
OSV560-5141-2	OUTSIDE LABOR 560-5141-2	PCA			1.0000		EA	