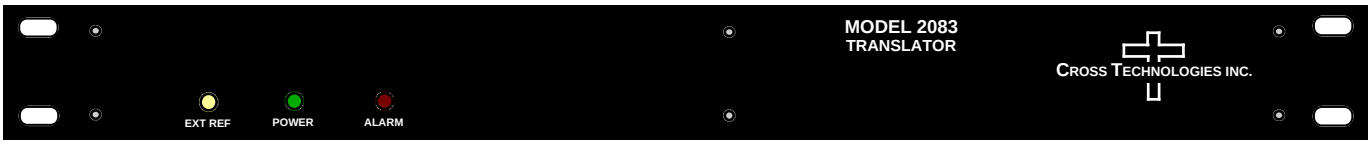
Instruction Manual

Model 2083-1272
Dual Translator

May 2014, Rev. 0



When ordering parts from Cross Technologies, Inc., be sure to include the equipment model number, equipment serial number, and a description of the part.

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INSTRUCTION MANUAL

MODEL 2083-1272 Dual Translator

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2083-1272 Dual Translator

1.0 General

1.1 Equipment Description

2083-1272 Dual Translator - Consists of two converters (inverted spectrums) each of which convert a 1200 ± 150 MHz signal to a 720 ± 150 MHz (LO =1.920 GHz). The two 1200 ± 150 MHz inputs are filtered and then mixed with a 1.920 GHz synthesized local oscillator (LO) signal to 720 ± 150 MHz. The mixer output is applied to the output filters and amplifier. The converters have a nominal gain of 0 dB ±2 dB. All connectors are 75 ohm BNC female. Front panel LEDs light when DC power is applied (green), a PLL alarm occurs (red), the unit detects presence of EXT Input (yellow). The 2083-1272 is powered by a 100-240 ± 10% VAC power supply and housed in a 1.75" X 19" X 16" 1RU chassis.

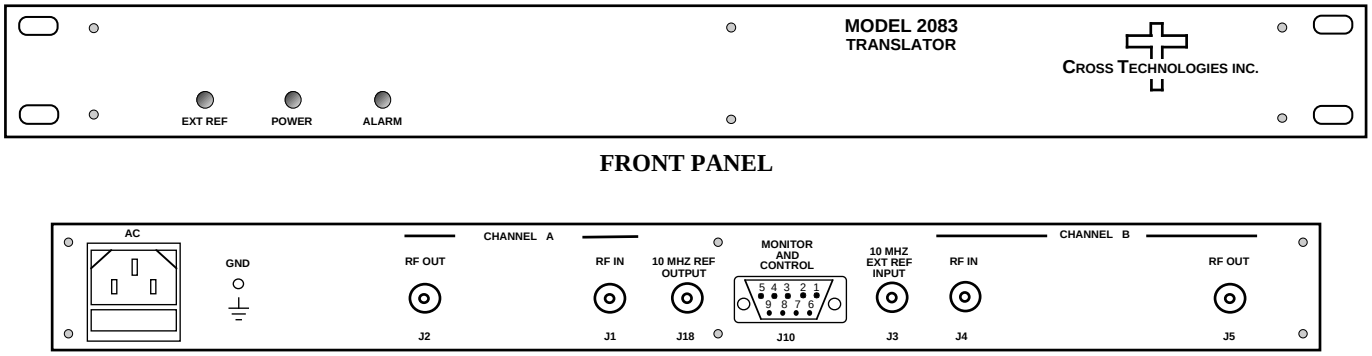


FIGURE 1.1 Model 2083-1272 Front and Rear Panels

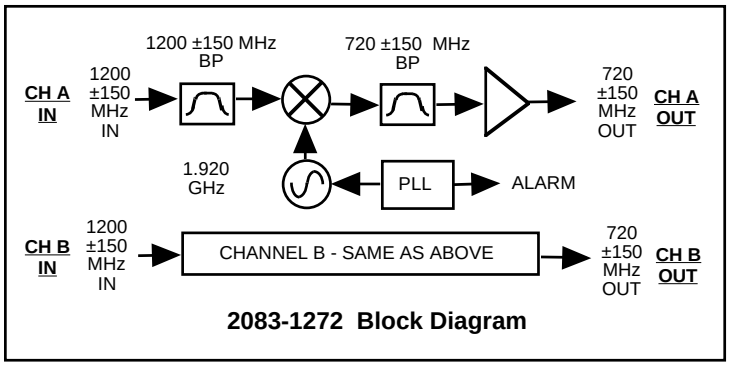


FIGURE 1.2 Model 2083-1272 Block Diagram

1.2 Technical Characteristics

TABLE 1.0 2083-1272 Dual Translator Specifications*						
Input Characteristics						
Input Impedance/RL	75Ω / 12 dB					
Frequency	1200 ± 150 MHz					
Input Level	-10 to -50 dBm					
Input 1 dB Compression	0 dBm					
Output Characteristics						
Impedance/RL	75Ω / 12 dB					
Output 1 dB Compression	0 dBm					
Output Level Range	-10 to -50 dBm					
Frequency	720 ± 150 MHz					
Channel Characteristics						
Gain at Band Center	0 dB ±2 dB, Fixed					
Frequency Response	±1.5 dB, 720 ± 150 MHz out; ± 0.7 dB, any 36 MHz increment					
Frequency Sense	Inverting (1.05 GHz Translates to .87 GHz, 1.35 GHz Translates to 0.57 GHz)					
Intermodulation	<-50 dBC for two carriers each at -13 dBm Out					
Spurious Response	<-35 dBC, for 1200 ± 150 MHz input to 720 ± 150 MHz Out					
1.05 - 1.35 GHz Feedthru	<-10 dBC, minimum, <-20 dBC, goal					
LO Rejection	<-40 dBm, LO at the output					
Synthesizer Characteristics						
LO Frequency	1.920 GHz					
Frequency Accuracy	±1.0 ppm maximum					
Phase Noise @ F(Hz) >	100 MHz	1kHz	10kHz	100kHz	1MHz	
dBC/Hz	-70	-80	-85	-95	-110	
Indicators						
Power; PLL Alarm; Ext.Ref.	Green LED; Red LED; Yellow LED					
Other						
Connectors	RF IN and RF Out, BNC, Female, 75 ohm					
Connector, Alarm	DB9; No or NC contact closure on Alarm					
Size	19 inch, 1 RU Standard Chassis 1.75” high x 16.0” deep					
Power	100-240 ±10% VAC, 47- 63 Hz, 15 watts maximum					
Available Options						
E -	External 10 MHz Reference In & Out					
H -	High Stability (±0.01 ppm) Internal Reference					
Connectors / Impedance (In & Out)						
Standard	75Ω BNC					
D -	50Ω BNC					
SS -	50Ω SMA					
Contact Cross Technologies for Other Options.						

*+10 to +40 degrees C; 2000 meters max elevation; 80% max humidity; Specifications subject to change without notice.

1.3 Environmental Use Information

A. **Rack-Mounting** - To mount this equipment in a rack, please refer to the installation instructions located in the user manual furnished by the manufacturer of your equipment rack.

B. **Mechanical loading** - Mounting of equipment in a rack should be such that a hazardous condition does not exist due to uneven weight distribution.

C. **Elevated operating ambient temperature** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack may be greater than room ambient temperature. Therefore, consideration should be given to Tmra.

D. **Reduced air flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. Additional space between units may be required.

E. **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits could have on over current protection and supply wiring. Appropriate consideration of equipment name plate rating should be used, when addressing this concern.

F. **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connection to the Branch (use of power strips).

G. **Top Cover** - There are no serviceable parts inside the product so, the Top Cover should not be removed. If the Top Cover is removed the ground strap and associated screw MUST BE REINSTALLED prior to Top Cover screw replacement. FAILURE TO DO this may cause INGRESS and/or EGRESS emission problems.

2.0 Installation

2.1 Mechanical

The 2083-1272 consists of one RF/Controller PCB housed in a 1 RU (1.75 inch high) by 16 inch deep chassis. A switching, ± 12, +24, +5 VDC power supply provides power for the assemblies. The 2083-1272 can be secured to a rack using the 4 holes on the front panel. Figure 2.0 shows how the 2083-1272 is assembled.

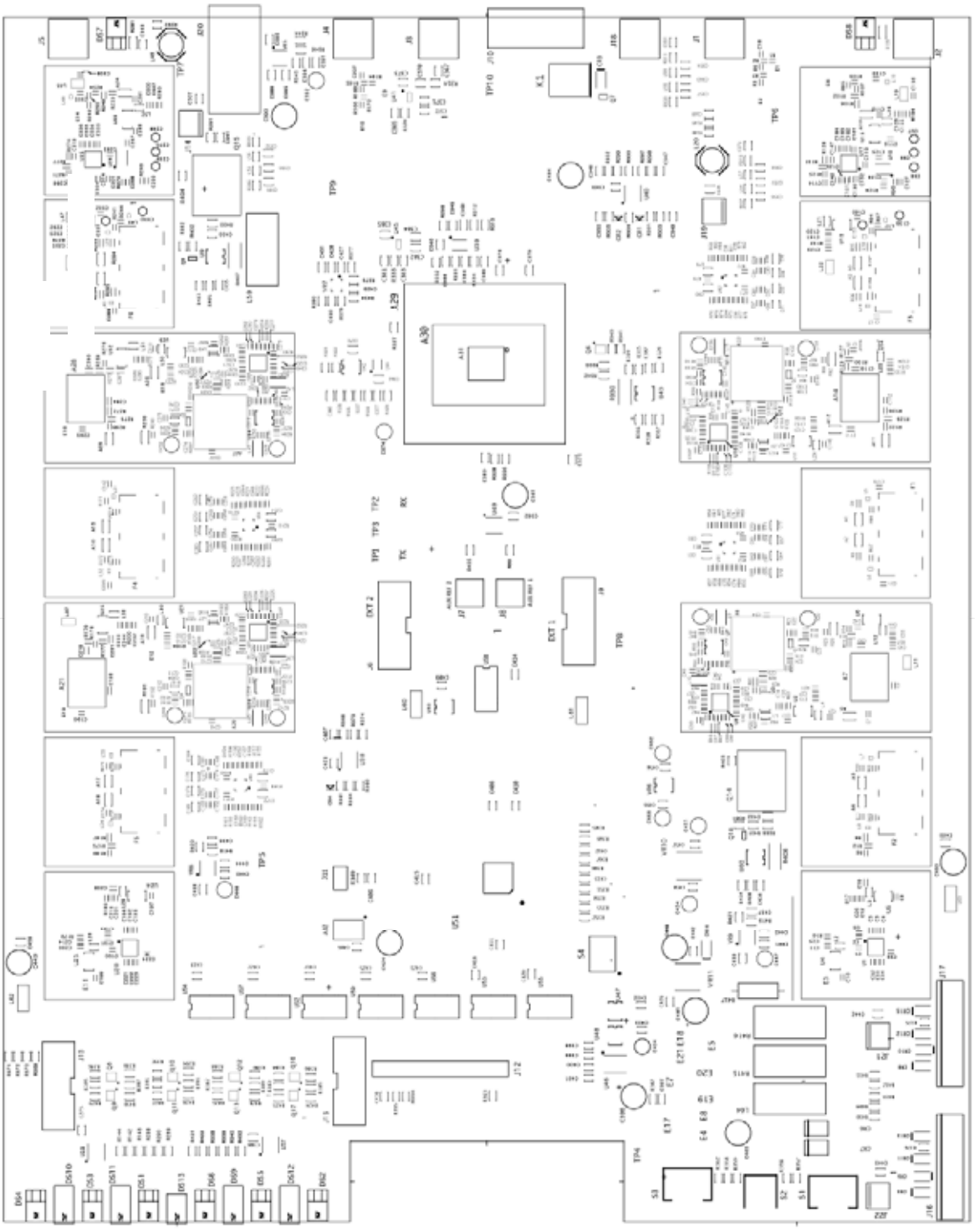


FIGURE 2.0 2083-1272 Mechanical Assembly

2.2 Rear Panel Input/Output Signals

Figure 2.1 shows the input and output connectors on the rear panel.

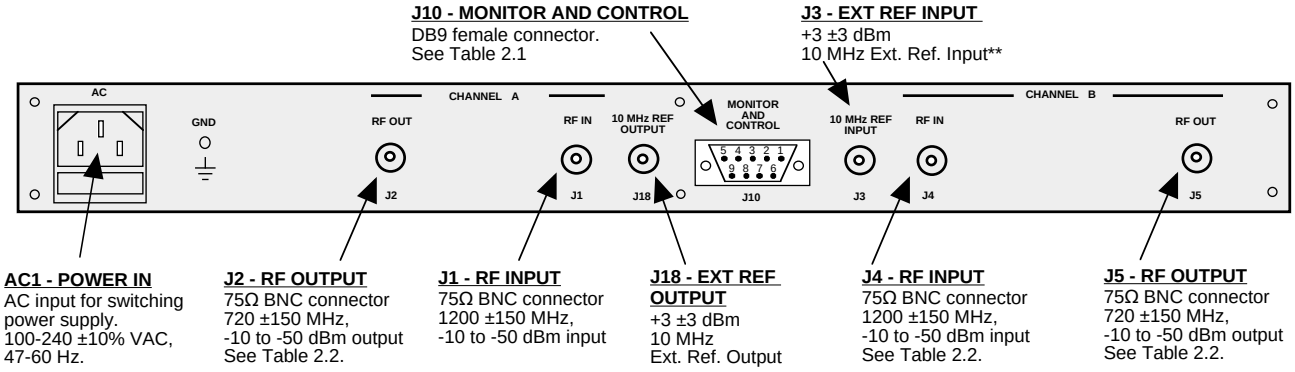


FIGURE 2.1 2083-1272 Rear Panel I/O's

TABLE 2.1 J10 Pinouts*

Pin	Function
1	Rx-
2	Rx+ (RS-232C)
3	Tx+ (RS-232C)
4	Tx-
5	GND
6	Alarm Relay: Common
7	Alarm Relay: Normally Open
8	Not Used
9	Alarm Relay: Normally Closed

TABLE 2.2 Input/Output Connector Options

Option	Input	Output
STD	BNC, 75Ω	BNC, 75Ω
D	BNC, 50Ω	BNC, 50Ω
SS	SMA, 50Ω	SMA, 50Ω

***Remote Serial Interface**

Interface: DB-9 Male
Protocol: RS-232C (RS-232C/422/485 **Option Q**),
9600 baud rate, no parity, 8 data bits, 1 start bit, 1 stop bit.

****External Reference Input**

Unit detects presence of EXT Input and automatically switches to EXT Reference.
User is responsible for the suitability of applied input (Frequency Accuracy, Phase Noise, etc.)

2.3 Front Panel Indicators

Figure 2.2 shows the front panel indicators.

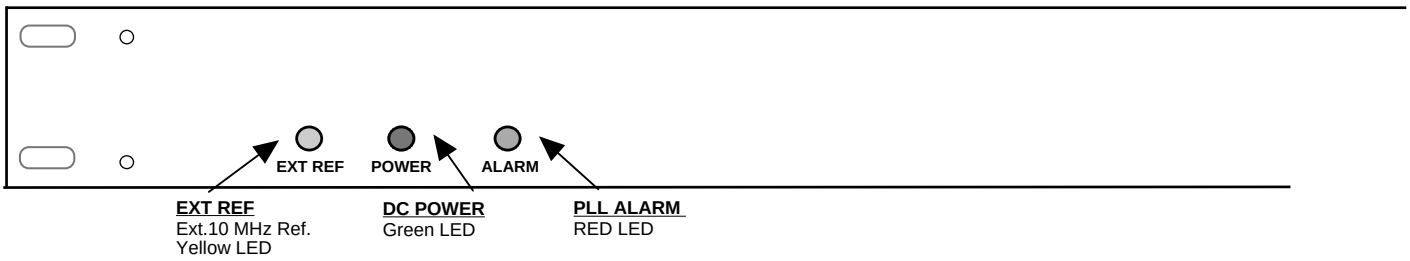


FIGURE 2.2 2083-1272 Front Panel Indicators

2.4 Installation / Operation

2.4.1 Installing and Operating the 2083-1272, Dual Translator Section

1. Connect a -10 dBm to -50 dBm signal to IN, J1/J4 (Figure 2.1)
2. Connect the OUT, J2/J5, to the external equipment.
3. Connect 100-240 ±10% VAC, 47 - 63 Hz to AC on the back panel.
4. Be sure DS6 (green, DC Power) is on and DS2 (red, Alarm) is off (Figure 2.2).
5. AC Fuse - The fuse is a 5 mm X 20 mm, 2 amp slow blow (Type T) and is inserted in the far slot in the drawer below the AC input as shown in Figure 2.3. There is a spare fuse in the near slot. If a fuse continues to open, the power supply is most likely defective.

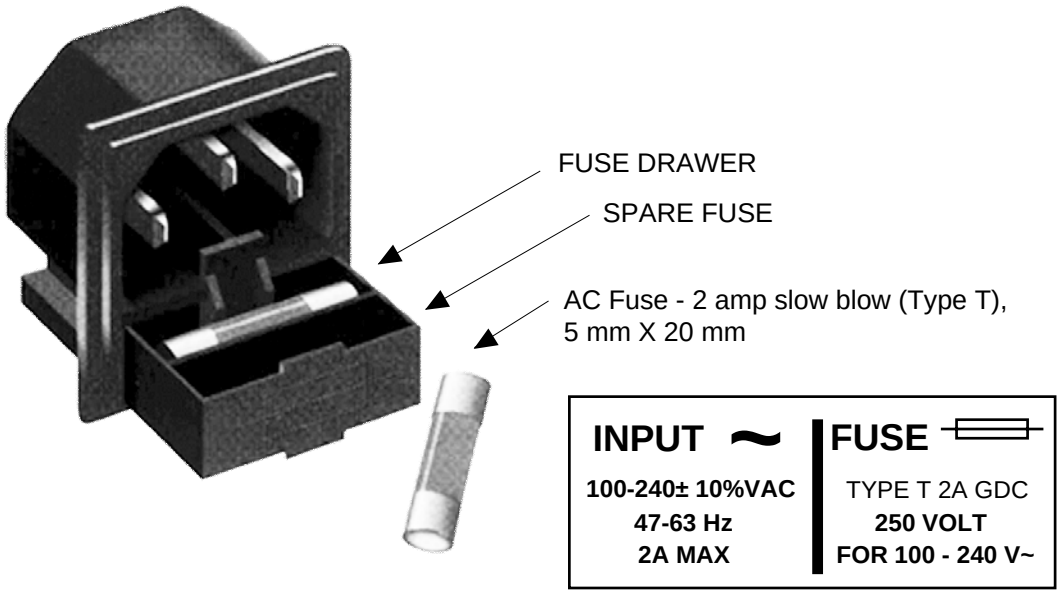
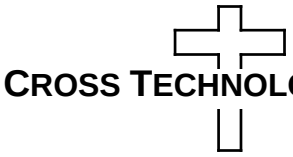


FIGURE 2.3 Fuse Location and Spare Fuse



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