Instruction Manual

Model 2016-25-01
Downconverter

March 2009   Rev A

IF MONITOR   RF MONITOR

F=2250.000 G=+10

MENU

EXECUTE

ALARM   REMOTE   POWER

MODEL 2016
DOWNCONVERTER

CROSS TECHNOLOGIES INC.

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Instruction Manual

MODEL 2016-25-01 Downconverter

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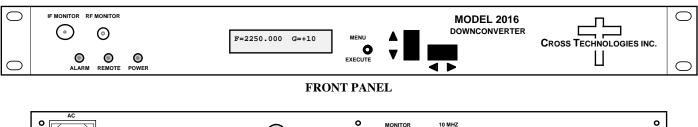FAX (770) 886-7964
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MODEL 2016-25-01 Downconverter

1.0 General

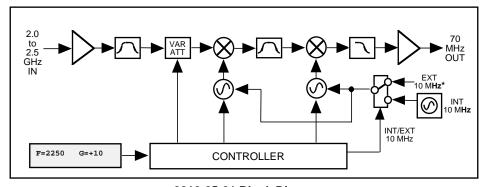### 1.1 Equipment Description

The 2016-25-01 Downconverter converts **2000 to 2500** MHz to 70 ± 18 MHz in **100 KHz steps** with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection. Multi-function push button switches select the RF frequency and gain. Front panel LEDs provide indication of DC power (green), remote operation (yellow), and PLL alarm (red). Variable attenuators for the RF input provide a gain range of 0 to +50 dB as adjusted by the front panel multi-function pushbutton switches. Frequency and gain settings appear on the LCD display. **Connectors are: N-type for RF In; BNC for IF Out, 10 MHz In, 10 MHz Out, and IF Monitor; SMA for RF Monitor and 1st LO Monitor.** The unit is powered by a 100-240 $\pm10\%$ VAC power supply, and housed in a 1 3/4" X 19" X 16" rack mount chassis.

FIGURE 1.1   Model 2016-25-01 Front and Rear Panels

2016-25-01 Block Diagram

FIGURE 1.2 Model 2016-25-01 Downconverter Block Diagrams

1.2 Technical Characteristics

TABLE 1.0 2016-25-01 Downconverter Specifications*

Input Characteristics

Impedance/Return Loss	50 Ω /12 dB
Frequency	2.0 to 2.5 GHz
Input Level	-70 to -20 dBm

Output Characteristics

Impedance/Return Loss	75 Ω/18 dB
Frequency	70 ± 18 MHz
Output level	-30 to -20 dBm
Output level/1 dB	-15 dBm

Channel Characteristics

Gain range (adjustable)	0 to +50.0 dB
Image Rejection	> 50 dB, min.
Frequency Response	±1.5 dB, 2.0-2.5 GHz; ± 1.0 dB, 36 MHz BW
Spurious Response	< -45 dBC in band
Group Delay, max	0.01 ns/MHz^2 (parabolic), 0.03 ns/MHz (linear); 1 ns ripple
Frequency Sense	Inverting or Non-inverting (selectable)

Synthesizer Characteristics

Frequency Accuracy	± 0.01 ppm internal reference
Frequency Step	100 KHz
10 MHz Level (In/Out)	+3 dBm ± 3 dB w/Auto-detect feature

Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1MHz
dBC/Hz	-70	-70	-80	-95	-105

Controls, Indicators

Frequency Selection	Direct readout LCD; manual or remote selection
Gain Selection	Direct readout LCD; manual or remote selection
Power, Alarm, Rem, Mute	Green LED, Red LED, Yellow LED, Red LED

Other

RF, IF Connectors	**N-type (female) (RF), BNC 50Ω (female) (IF)**
10MHz Connectors	BNC (female), 50Ω/75Ω
Alarm/Remote Connector	DB9 (female) - NO or NC contact closure on Alarm / RJ45 Ethernet
Size	19 inch, 1RU standard chassis 1.75" high X 16.0" deep
Power	100-240 ± 10% VAC, 47-63 Hz, 45 W max

All Standard Included Options

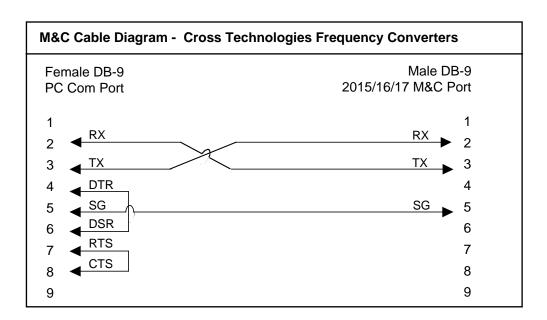|	
W7 -	Front Panel, RF (SMA) & IF (BNC 50Ω) Monitor Ports,
W13 -	Rear Panel, LO Monitor Port, SMA
W16 -	Individual Test/Calibration Data
W85 -	Ethernet M&C interface with SNMP
x1 -	100 kHz step tuning resolution
xE -	External 10 MHz reference with AUTO switching
M -	IF connector ->BNC 50Ω; RF connector -> N-type, 50Ω (see table 2.2)
H -	High Stability (± 0.01 ppm) internal reference

*+10˚C to +40˚C; Specifications subject to change without notice

1.3 Monitor and Control Interface

A) Remote serial interface

Protocol: RS-232C, 38400 baud rate, no parity, 8 data bits, 1 start bit, and 1 stop bit.
(RS-232C, **RS-422/RS-485** -> **option -Q**)

```
M&C Cable Diagram -  Cross Technologies Frequency Converters

Female DB-9                                    Male DB-9
PC Com Port                              2015/16/17 M&C Port

1                                                        1
      RX                                        RX
2   <----                                         ----->  2
      TX                                        TX
3   <----                                         ----->  3
      DTR                                                 4
4   <----
      SG                                        SG
5   <----                                         ----->  5
      DSR                                                 6
6   <----
      RTS                                                 7
7   <----
      CTS                                                 8
8   <----
9                                                        9
```

Connector: Rear panel, DB-9 male

J10 Pinouts	(RS-232C/422/485)
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

B) Status Requests

Table 1.1 lists the status requests for the 2016-25-01 and briefly describes them.

* PLEASE NOTE: The two character {aa}(OO-31) prefix, in the table below, should be used ONLY when RS-485, (OPTION-Q), is selected.

TABLE 1.1 2016-25-01 Status Requests		
Command	Syntax*	Description
Command Status	{aaS1}	Returns {aaS1bbbbbbccde} where:
		• bbbbbbb = Rx frequency
		• cc = Rx gain
		• d = O - non-inverted Receiver; 1 - inverted
		• e = O - Summary Alarm; 1=Alarmed, O=Normal
1OMHz Ref Status		Returns where:
(option E only)		• = 1 - external 10 MHz selected
	{aaS2}	Returns {aaS2bc} where:
		• b = O for internal reference
		• b = 1 for external reference
		• b = 2 forAUTO reference
		• c = O: no fault in AUTO reference mode
		• c = 1: fault occurred in AUTO reference mode

C) Commands

Table 1.2 lists the commands for the 2016-25-01 and briefly describes them. After a command is sent the 2016-25-01 sends a return ">" indicating the command has been received and executed.

General Command Format - The general command format is {aaCND...}, where:

    { = start byte
    aa = address (**RS-485 only - option Q**)
    C = 1 character, either C (command) or S (status)
    N = 1 character command or status request
    D = 1 character or more of data (depends on command)
    } = stop byte

    * PLEASE NOTE: The two character {aa}(00-31) prefix, in the table below, should be used ONLY when RS-485, (OPTION-Q), is selected.

Table 1.2 2016-25-01 Commands		
Command	**Syntax***	**Description**
Set Receiver Frequency	{aaC2xxxx}	where:
		• xxxxxxx = 7 characters
		• Range: 200000 to 2500000 MHz
Set Receiver Gain	{aaC4xx}	where:
		• xx = 2 characters
		• Range: 00 to 50 (0 dB to +50 dB, in 1 dB steps)
Enable Spectrum Invert	{aaC7x}	where x =:
		• 0 to disable spectrum invert
		• 1 to enable spectrum invert
10 MHz Reference Mode	{aaCEx}	where x =:
		• 0 to select INTERNAL 10 MHz reference
		• 1 to select EXTERNAL 10 MHz reference
		• 2 to select AUTO 10 MHz reference
	{aaCF}	Command to clear a reference fault state
		when in the AUTO 10 MHz mode
Enable Remote	#	Just # sign
Disable Remote	{aaCR0}	{CR and zero}

1.4 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 multiunit 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 unit 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 RE-INSTALLED 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 2016-25-01 consists of one RF/Controller PCB housed in a 1 RU (1 3/4 inch high) by 16 inch deep chassis. A switching, ± 12, +24, +5 VDC power supply provides power for the assemblies. The 2016-25-01 can be secured to a rack using the 4 holes on the front panel. Figure 2.1 shows how the 2016-25-01 is assembled.
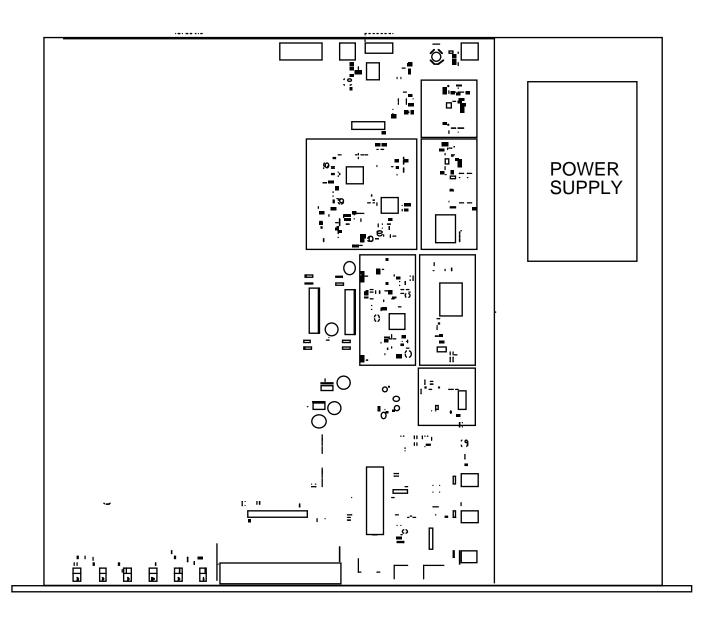
POWER SUPPLY

FIGURE 2.1 Model 2016-25-01 Downconverter Assembly

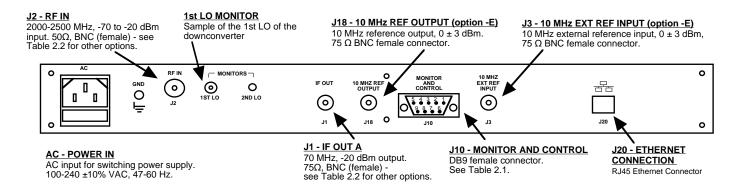## 2.2 Rear Panel Input/Output Signals - Figure 2.2 shows the input and output connectors on the rear panel.

J2 - RF IN
2000-2500 MHz, -70 to -20 dBm input. 50Ω, BNC (female) - see Table 2.2 for other options.

1st LO MONITOR
Sample of the 1st LO of the downconverter

J18 - 10 MHz REF OUTPUT (option -E)
10 MHz reference output, 0 ± 3 dBm. 75 Ω BNC female connector.

J3 - 10 MHz EXT REF INPUT (option -E)
10 MHz external reference input, 0 ± 3 dBm, 75 Ω BNC female connector.

AC - POWER IN
AC input for switching power supply. 100-240 ±10% VAC, 47-60 Hz.

J1 - IF OUT A
70 MHz, -20 dBm output. 75Ω, BNC (female) - see Table 2.2 for other options.

J10 - MONITOR AND CONTROL
DB9 female connector. See Table 2.1.

J20 - ETHERNET CONNECTION
RJ45 Ethernet Connector

FIGURE 2.2 2016-25-01 Downconverter Rear Panel Inputs/Outputs

Table 2.1 J10	Pinouts (RS-485/RS-422/RS-232C)*
Pin	Description
1	Rx-
2	Rx+ (RS-232C)
3	Tx+ (RS-232C)
4	Tx-
5	Ground
6	Alarm Relay - Common
7	Alarm Relay - Normally Open
8	Output Level Detector, 0 to +5 VDC (option W1 ONLY)
9	Alarm Relay - Normally Closed

*Interface: DB-9 Female; Protocol: RS-485, RS-422, or RS-232C (selectable), 9600 baud rate, no parity, 8 data bits, 1 start bit, 1 stop bit

TABLE 2.2 IF/RF Connector Options		
Option	IF	RF
STD	BNC, 50Ω	BNC, 50Ω
B	BNC, 75Ω	BNC, 75Ω
D	BNC, 50Ω	BNC, 50Ω
N	BNC, 75Ω	Type N, 50Ω
M	BNC, 50Ω	Type N, 50Ω
SS	SMA, 50Ω	SMA, 50Ω

2.3 Front Panel Controls and Indicators - The following are the front panel controls and indicators.

IF MONITOR
-20db IF Monitor Port

RF MONITOR
-20db RF Monitor Port

LCD DISPLAY
Display shows frequency in MHz and Gain in dB, and is used to change settings in Program mode.

S1 - MENU/EXECUTE BUTTON
Press this to get into Program mode and to execute any changes.

IF MONITOR   RF MONITOR

F=2250.000   G=+10.0

MENU

EXECUTE

ALARM   REMOTE   POWER

DS3 - ALARM LED
Red LED indicates downconverter alarm.

DS1 - REMOTE LED
Yellow LED indicates remote operation.

DS6 - POWER LED
Green LED indicates presence of DC power.

S2 - VERT. TOGGLE
Vertical toggle switch that controls values in the Menu items when in program mode. Does not function in the normal display mode

S3 - HORIZ. TOGGLE
Horizontal toggle switch that controls which values are being adjusted. Does not function in the normal display mode
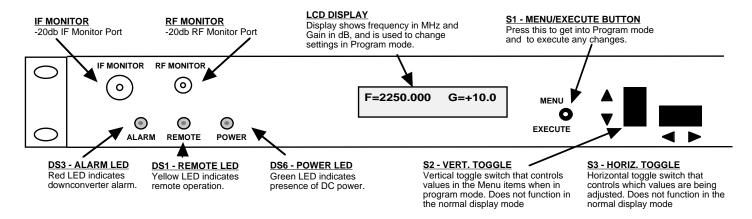
FIGURE 2.3 2016-25-01 Front Panel Controls and Indicators

2.4 Auto 10 MHz Reference Mode

When the frequency converter's reference mode is set to AUTO it will lock to an external reference and automatically switch to the internal reference if both PLL circuits become unlocked. Once the converter switches to the internal reference it will remain there until the "Reference Fault" state is cleared. The reference fault state is displayed on the front panel and is reported via the "{S2}" M&C status query. Converters with the Ethernet M&C option will also report the reference fault via the web browser interface. Converters with the Ethernet + SNMP option will also report the reference fault via an SNMP object in its MIB.

When the reference fault state is cleared the converter will attempt to lock to the external reference.

The reference fault state can be cleared via the front panel or via remote M&C commands. These methods are described below.

Front Panel Method
Navigate to the reference mode select menu. Any activity on the front panel up or down switches will clear the reference fault.

Remote M&C Method
Send the command "{CF}" to clear the reference fault state.

Web Browser Interface Method
Click on the "Clear Fault" button near the bottom of the web page.

SNMP Method
Issue a SET command with a value of 0 to the reference fault object in the MIB.

2.5 Installation / Operation

2.5.1 Installing and Operating the 2016-25-01, Downconverter Section

1. Connect a -20 dBm to -70 dBm signal to RF In, J2 (Figure 2.2)
2. Connect the IF OUT, J1, to the external equipment
3. Connect 100-240 ±10% VAC, 47 - 63 Hz to AC on the back panel.
4. Set the desired input frequency (See Section 2.5 Menu Settings).
5. Set the gain for 0 to +50 dB. Make sure the output stays within -20 to -30 dBm with the gain selected and the input level provided. (See Section 2.5 Menu Settings).
6. Be sure DS6 (green, DC Power) is on and DS2 (red, Alarm) is off (Figure 2.3).
7. <u>AC Fuse</u> **-** 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.
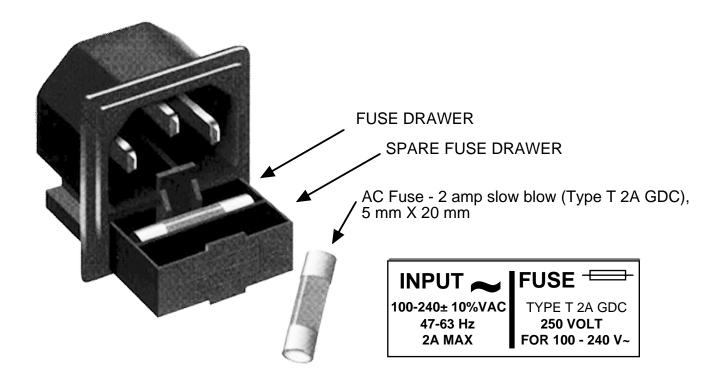
FUSE DRAWER

SPARE FUSE DRAWER

AC Fuse - 2 amp slow blow (Type T 2A GDC), 5 mm X 20 mm

INPUT 〜	FUSE ▭
100-240± 10%VAC	TYPE T 2A GDC
47-63 Hz	**250 VOLT**
2A MAX	**FOR 100 - 240 V~**

<u>FIGURE 2.4 Fuse and Spare Fuse Locations</u>

2.6 Menu Settings

2.6.1 Functions

This section describes operation of the front panel controls. There are three operator switches, the LCD display and alarm indicator LEDs. All functions for the equipment are controlled by these components. The functions are (see Figure 2.5):

Power Up
Normal Display

Menu 1 Frequency in MHz
Menu 2 Gain (0 to +50 dB)
Menu 3 Set Unit to Remote Operation (Note: the local controls still function when in REMOTE)
Menu 4 Select Non-inverting or Inverting Spectrum
Menu 5 Select External 10 MHz Ref (**option E**)
Menu 6 Select 10 MHz Output (**option E**)
Menu 7 Select RS232, RS422, RS 485, or Ethernet (**option W85**) Remote Operation (**option Q**)
Menu 8 Select Remote Address for Unit (RS485 only) (**option Q**)

Save Menu When "R" is selected in any above menu or the next menu item after Menu 8

Alarm indications appear on the LEDs (see figure 2.2).

All program changes must start with the operation of the Menu/Execute switch and must also end with the operation of the Menu/Execute switch verified by the "Save Settings?" Menu. If this sequence is not followed, none of the changes will take effect.   If programming is initiated and no operator action takes place for approximately 12 seconds (before the final press of the Menu/Execute switch) the display will revert to its previous status and you will need to start over.

2.6.2. Power On Settings

NOTE: The last status of a unit is retained even when power is removed. When power is restored, the unit will return to it's previous settings.

When power is first applied, the LCD display goes through three steps.

1. The LCD goes black to show all segments are functioning.
2. The software version will be displayed.

```
REV 1.00
```

3. The present frequency and gain of the downconverter is shown.

```
F=2250      G=+00
```

The unit is now operational and ready for any changes the operator may desire.

2.6.3 Control Switches

1. <u>Menu/Execute</u> - Any change to the programming of the unit must be initiated by pressing the Menu/Execute switch and completed by pressing the Menu/Execute switch.
2. <u>Horizontal Switch</u> - This switch is mounted so its movement is horizontal and moves the cursor left or right.
3. <u>Vertical Switch</u> - This switch is mounted so its movement is vertical and has two functions:
    A. During frequency, gain changes, the vertical movement will raise or lower the selected number in the direction of the arrows.
    B. For other functions, the vertical switch will alternately turn the function on or off regardless of the direction operated.

2.6.4 Frequency Changes

At any time during the modification process, if you have made a mistake and do not wish to save the changes you have made, **do not press the Menu/Execute switch**; simply do nothing for approximately 12 seconds, and the system will return to the normal operating mode or scroll to **"R"** and push the menu/Execute switch and select **"NO"** in the **"SAVE SETTINGS?"** window.

To change the FREQUENCY:

1.Operate the Menu/Execute switch until you get to the menu item you want to change see Figure 2.5 for the sequence of menu options. The following display is for changing the downconverter frequency:

```
F  =  2250                R
```

Pressing the Up/Down switch down will toggle the display to:

```
F  =  2350                R
```

By using the horizontal rocker switch the cursor can be moved left or right .

```
F  =  2350                R
```

NOTE: CHANGES DO NOT TAKE PLACE ON FREQUENCY UNTIL YOU GO TO THE SAVE MENU AND INDICATE YOU WANT TO SAVE THE CHANGES. THE CARRIER IS MUTED WHEN FREQUENCY IS CHANGED.

When the display indicates the value desired you can push the Menu/Execute switch to the next item:

```
G  =  +00                 R
```

OR you can scroll to "R", push the Menu/Execute switch to get to:

```
SAVE SETTINGS?      Y N
```

Selecting **Y** will save the new settings. Selecting **N** will revert to the previous settings.
Pushing the Menu/Execute switch then takes you to the default display:

```
F=2350      G=+00
```

Figure 2.5 shows all the menu items and how to make changes.

2.6.5 Gain Changes

When you get to this menu note that the gain changes will be made as you make them but if you do not wish to save the changes you have made, scroll to **"R"** and push the menu/Execute switch and select **"NO"** in the **"SAVE SETTINGS?"** window or **do not press the Menu/Execute switch**; simply do nothing for approximately 12 seconds, and the system will return to the normal operating mode.

To change the GAIN, first push the Menu/Execute switch to get to the gain setting:

   Operate the Menu/Execute switch until you get to the menu item you want to change
   (see Figure 2.5 for the sequence of menu options).

NOTE: CHANGES TAKE PLACE ON GAIN IMMEDIATELY BUT DO NOT GET SAVED UNTIL YOU GO TO THE SAVE MENU AND INDICATE YOU WANT TO SAVE THE CHANGES.

   Press the Up/Down switch to change the level in 1 dB steps and then push the Menu/Execute switch to get to the Gain setting:

```
 G = +00              R
```

   Press the Up/Down switch to change the gain in 1 or 10 dB steps:

```
 G = +10              R
```

   By using the horizontal rocker switch the cursor can be moved left or right. Pressing the Up/Down switch down will toggle the display digit selected until you have the desired gain.

NOTE: THE GAIN WILL BE CHANGED AS YOU ADJUST THE NUMBERS. HOWEVER, THE VALUE WILL NOT BE STORED UNTIL YOU INDICATE YES IN THE SAVE SETTINGS WINDOW. DO NOT SET A GAIN THAT WOULD EXCEED 0 dBm OR HAVE LESS THAN -20 dBm OUTPUT LEVEL. THE FIRMWARE PREVENTS YOU FROM THIS.

   When the display indicates the value desired you can push the Menu/Execute switch to the next item OR you can scroll to "R", push the Menu/Execute switch to get to:

```
 SAVE SETTINGS?    Y N
```

   Selecting **Y** will save the new settings. Selecting **N** will revert to the previous settings.
   Pushing the Menu/Execute switch then takes you to:

```
 F=2350     G=+10
```

Figure 2.5 gives the menu items and how to make changes

2.6.6 Alarm Indications

An alarm condition for will occur if the local oscillator phase lock loop (PLL) comes out of lock. The Mute LED will light if you select to mute the Tx Signal and the Remote LED will light when you select the Remote mode.
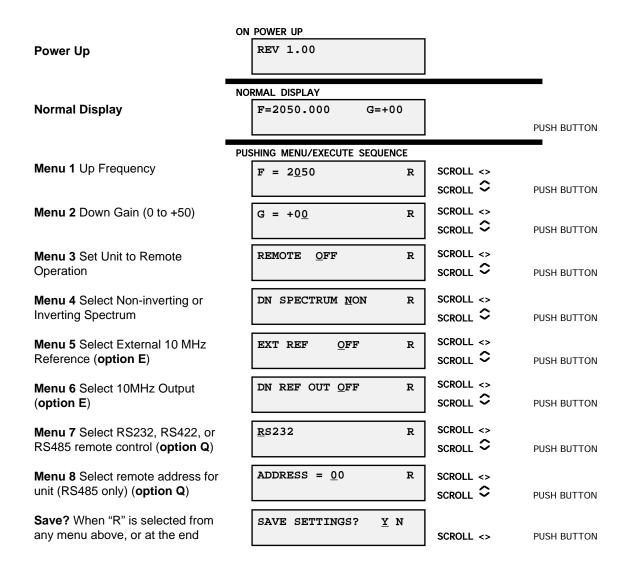
Power Up	ON POWER UP `REV 1.00`		
Normal Display	NORMAL DISPLAY `F=2050.000    G=+00`		PUSH BUTTON
	PUSHING MENU/EXECUTE SEQUENCE		
Menu 1 Up Frequency	`F = 2050          R`	SCROLL <> SCROLL ⇕	PUSH BUTTON
Menu 2 Down Gain (0 to +50)	`G = +00          R`	SCROLL <> SCROLL ⇕	PUSH BUTTON
Menu 3 Set Unit to Remote Operation	`REMOTE  OFF        R`	SCROLL <> SCROLL ⇕	PUSH BUTTON
Menu 4 Select Non-inverting or Inverting Spectrum	`DN SPECTRUM NON    R`	SCROLL <> SCROLL ⇕	PUSH BUTTON
Menu 5 Select External 10 MHz Reference (**option E**)	`EXT REF    OFF      R`	SCROLL <> SCROLL ⇕	PUSH BUTTON
Menu 6 Select 10MHz Output (**option E**)	`DN REF OUT OFF     R`	SCROLL <> SCROLL ⇕	PUSH BUTTON
Menu 7 Select RS232, RS422, or RS485 remote control (**option Q**)	`RS232            R`	SCROLL <> SCROLL ⇕	PUSH BUTTON
Menu 8 Select remote address for unit (RS485 only) (**option Q**)	`ADDRESS = 00      R`	SCROLL <> SCROLL ⇕	PUSH BUTTON
Save? When "R" is selected from any menu above, or at the end	`SAVE SETTINGS?   Y N`	SCROLL <>	PUSH BUTTON

FIGURE 2.5 Menu Display and Sequence

Appendix

ETHERNET Interface Installation and Operation

1.0 General Information

The Cross Technologies frequency converter is equipped with a 10/100 Base-T compatible Ethernet interface for control and monitoring of its operating parameters. An HTML script interface allows the user to monitor and control the converter using a standard web browser. SNMP (Simple Network Management Protocol) is also supported. Contact Cross Technologies for the SNMP MIB file.

1.1 Methods of Connection

1.1.1 Directly Connected to a PC:

For control from a local PC, attach the frequency converter's Ethernet port to the Ethernet network connector on the PC using a crossover RJ-45 cable.

1.1.2 LAN Connection

For LAN connections, attach the frequency converter's Ethernet port to the LAN using a normal RJ-45 cable. Use any PC on the LAN to connect to the frequency converter.

1.2 Ethernet Configuration

Each frequency converter must be configured with an appropriate IP address, Netmask, and Gateway assigned by your network manager. The frequency converter is set at the factory with a static address that is written on a tag attached to the unit. The device server in the frequency converter has a built in HTTP based configuration manager that is used to configure network settings. To access the configuration manager open a web browser and enter the IP address of the frequency converter in the browser's address field. The window shown in Figure 1-A will appear. As delivered, there is no password set. Choose your user name and password here or leave those fields blank and click OK to proceed to the configuration manager webpage.

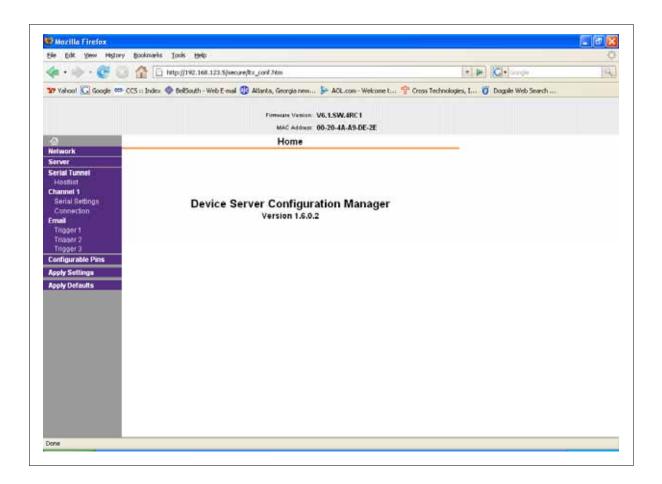**Figure 1-A: Password Screen**

Figure 1-B: Configuration Manager Screen

In the left frame of the configuration manager click on Network to display the Network Settings screen. Enter the IP address, Subnet mask, and Gateway address with delimiter dots (example: 192.168.192.47).

1.3 Webpage M & C

Enter the following address in a web browser to access the M & C webpage:
http://<ip address>/serial/0/setup.htm where <ip address> is the IP address of the unit.

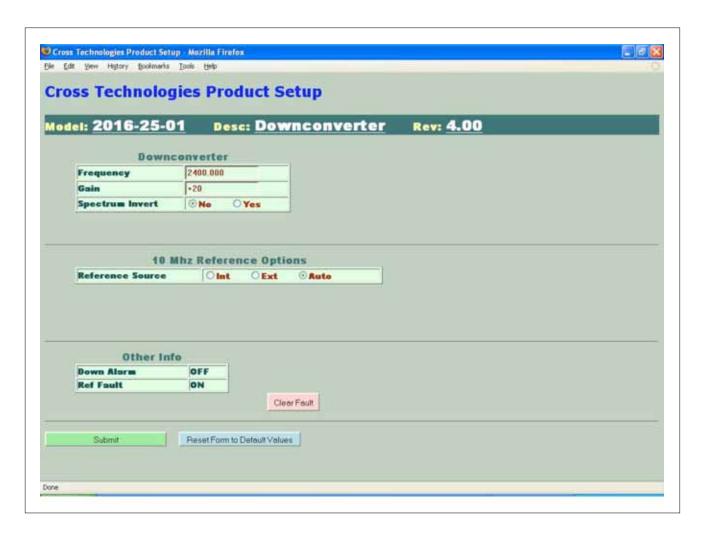Figure 1-C shows the webpage from a model 2016-25-01 frequency converter.

Figure 1-C: Example Webpage

1.4 SNMP Configuration

Setting of SNMP parameters such as Community Write and Community Read strings requires a *Telnet* connection to port 9999. The following instructions explain how to establish such a *Telnet* connection using Windows XP's Hyper Terminal utility .

Start the Hyper Terminal application and select "New Connection" from the "File" drop down menu.
The next screen is a "Connect To" dialog box. Select TCP/IP (Winsock) from the "Connect" drop down menu.

Enter the IP address of the frequency converter in the "Host address:" field and 9999 in the "Port number" field.

Figure 1-E shows an example of the Hyper Terminal settings required to access the SNMP configuration menu.

Figure 1-E: Telnet Settings in Hyper Terminal

Once the *Telnet* connection is established you will be prompted to "Press Enter for Setup Mode". Press enter and a menu of device server configuration options will appear (see Figure 1-F). Select menu item 3, "SNMP configuration." You will be prompted to enter SNMP community read and write strings. After setting your desired community strings you will be prompted to "Enter IP addresses for SNMP traps." You must enter at least one and up to four IP addresses of SNMP managers that will access the unit. This is required even though SNMP traps are not implemented. The unit will not process SNMP SET and GET requests from an SNMP manager unless the IP address associated with that manager is entered in the device server.
IMPORTANT: After "save and exit" is selected and complete the frequency converter's power must be cycled off and on for the SNMP settings to load properly.
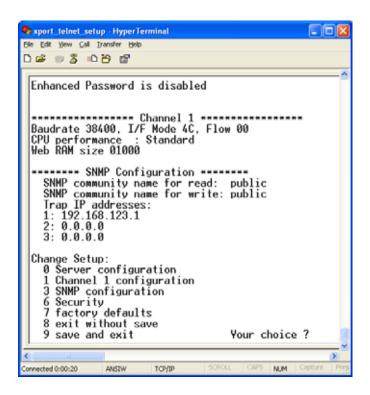
```
Enhanced Password is disabled


***************** Channel 1 *****************
Baudrate 38400, I/F Mode 4C, Flow 00
CPU performance  : Standard
Web RAM size 01000

******** SNMP Configuration ********
   SNMP community name for read:  public
   SNMP community name for write: public
   Trap IP addresses:
   1: 192.168.123.1
   2: 0.0.0.0
   3: 0.0.0.0

Change Setup:
   0 Server configuration
   1 Channel 1 configuration
   3 SNMP configuration
   6 Security
   7 factory defaults
   8 exit without save
   9 save and exit               Your choice ?
```

Figure 2-F: Device Server Configuration Menu

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