The SAT-LIGHT/Platinum Suite

Installation & User's Guide

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1 Important Information

1.1 Warranty and Repair Policy

Foxcom performs testing and inspection to verify the quality and reliability of our products. Foxcom uses every reasonable precaution to ensure that each unit meets specifications before shipment. Customers are asked to advise their incoming inspection, assembly, and test personnel as to the precautions required in handling and testing our products. Many of these precautions are to be found in this manual.

The products are covered by the following warranties:

1.1.1 General Warranty

Foxcom warrants to the original purchaser all standard products sold by Foxcom to be free of defects in material and workmanship for 24 months from date of shipment from Foxcom. During the warranty period, Foxcom will repair or replace any product that Foxcom proves to be defective. This warranty does not apply to any product which has been subject to alteration, abuse, improper installation or application, accident, electrical or environmental over-stress, negligence in use, storage, transportation or handling.

1.1.2 Specific Product Warranty Instructions

All Foxcom products are warranted against defects in workmanship, materials and construction, and to no further extent. Any claim for repair or replacement of units found to be defective on incoming inspection by a customer must be made within 30 days of receipt of shipment, or within 30 days of discovery of a defect within the warranty period.

This warranty is the only warranty made by Foxcom and is in lieu of all other warranties, expressed or implied. Foxcom sales agents or representatives are not authorized to make commitments on warranty returns.

1.1.3 Returns - RMA Procedure

In the event that it is necessary to return any product against above warranty, the following procedure shall be followed:

1. Return authorization is to be received from Foxcom prior to returning any unit. Advise Foxcom of the model, serial number, and discrepancy. The unit may then be forwarded to Foxcom, transportation prepaid. Devices returned collect or without authorization may not be accepted.
2. Prior to repair, Foxcom will advise the customer of our test results and any charges for repairing customer-caused problems or out-of-warranty conditions etc.
3. Repaired products are warranted for the balance of the original warranty period, or at least 90 days from date of shipment.

1.1.4 Repackaging for Shipment

The following list is a general guide for repackaging a card for shipment. If you have any questions, contact your authorized Foxcom sales representative.

1. Read the section **1.1.3 Returns - RMA Procedure** on page1.
2. If possible, use the original container designed for the product,
3. Wrap the product in heavy paper or plastic before placing it in the shipping container.
4. Use plenty of packing material around all sides of the product and protect the front and back with cardboard strips.
5. Use a heavy cardboard carton or wooden box to house the product and use heavy tape or metal bands to seal.
6. Mark the packing box with **Fragile**.

If the product is to be shipped to Foxcom for service or repair, attach to the product a tag identifying the RMA number clearly and the owner and indicating the service or repair to be accomplished. In any correspondence be sure to identify the Product by model number, serial number and description.

1.2 Limitations of Liabilities

Foxcom's liability on any claim, of any kind, including negligence for any loss or damage arising from, connected with, or resulting from the purchase order, contract, quotation, or from the performance or breach thereof, or from the design, manufacture, sale, delivery, installation, inspection, operation or use of any equipment covered by or furnished under this contact, shall in no case exceed the purchase price of the device which gives rise to the claim.

EXCEPT AS EXPRESSLY PROVIDED HEREIN, FOXCOM MAKES NO WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO ANY GOODS, PARTS AND SERVICES PROVIDED IN CONNECTION WITH THIS AGREEMENT INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. FOXCOM SHALL NOT BE LIABLE FOR ANY OTHER DAMAGE INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH FURNISHING OF GOODS, PARTS AND SERVICE HEREUNDER, OR THE PERFORMANCE, USE OF, OR INABILITY TO USE THE GOODS, PARTS AND SERVICE.

1.3 Safety Instructions

1.3.1 Personal Safety

1.3.1.1 Optical Radiation

Warning Applying power to the transmitter unit will create a laser energy source operating in Class 1 as defined by the IEC 825-I. Use either an infrared viewer, optical power meter or fluorescent screen for optical output verification

1.3.1.2 AC Power Hazard

The rackmount power supply line is EMI filtered. The chassis is connected to earth ground in compliance with safety requirements. Always use a 3-prong AC plug with earth ground to avoid the possibility of electrical shock hazard to personnel.

1.3.2 Equipment Safety

To avoid damaging your Foxcom equipment always observe the following:

a. Fuses: The PL7101 chassis does not have fuses. If the unit fails, pull the power supply out from the chassis and then push it back in.

b. The transmitter input, without LNB powering, and receiver output are DC coupled and can withstand the bias from a satellite receiver. **Do not exceed 25 VDC bias**.

c. Do not allow any dirt or foreign material to get into the optical connector bulkheads. This may cause damage to the polished optical connector end faces.

d. The optical fiber jumper cable bend radius is 3 cm. Smaller radii can cause excessive optical loss and/or fiber breakage.

e. If multiple trimesters are installed in the chassis, allow sufficient room for adequate ventilation, otherwise the units may overheat causing possible safety hazards or equipment damage. We recommend leaving the equivalent of at least 1 RU above and below each chassis.

f. When several units are installed on a PL7010 chassis, the total current of the units **must not exceed 4A**.

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2 Introduction

2.1 Overview

The *The SatLight/Platinum Suite* is based on state-of-the-art RF-to-fiber technology. The suite includes products for L-band, IF, 10 MHz, 5 MHz and an array of accessories, all of which are designed to meet increasing demands for higher performance and more RF control and monitoring.

The SatLight/Platinum's unique card-level LCD display enables users to be up and monitoring in a fraction of the time that it takes existing products providing more uptime and precise link performance. In addition, an MCP card provides remote control capabilities via a SNMP graphical web interface based management system.

Elegant and powerful the new *The SatLight/Platinum Suite* allows operators to be alerted to a problem, pinpoint the source and take corrective action. This then reduces troubleshooting time for satellite engineers in the space, defence, communications, broadcast and data industries.

2.2 Sat-Light/Platinum Components, Features and Functionality

2.2.1 General - Digital Control over General and RF Functionality

Zero manual tuning - all system calibration points are controlled by software.

The following describes the software and hardware interface requirements for the *The SatLight/Platinum Suite*. As each card within the project has a Processor (PCP) that is controlled by the main Processor and MCP) two other system cards that are partly algorithm based:

- RF Switch 1:2 Link Management.
- RF parameters - Monitoring and Calibration.

The basic *The SatLight/Platinum Suite* cards are:

- Power Supply
- MCP (Main Control Processor)
- Transmitter Card
- Receiver Card
- RF Amplifier
- RF Protection Switch 1:1
- RF Switch Transmitter [Data Link]
- Serial to Optics Converters

2.2.2 Optics

- RF and Optical cards (Transmitter/Receiver) are made as small as possible.
- The Optical cards are based on a DFB Laser. A optional optical card will be based on a Butterfly Laser for DWDM High End Market applications.

2.2.3 RF card features:

- MIMIC technology
- Stand alone Receiver or Transmitter. No need for a matched pairing
- Input coupling test port -20 dB
- Output coupling test port 20 dB
- Connectors 50Ω-SMA, 75Ω-F Type, 50Ω-and 75Ω-BNC, 50Ω-N Type
- Flatness of <4 db from 10 to 3000 MHz
- Flatness of <±0.20dB @ 36Mhz all over the range
- Output 1 dB compression > -3dBm [excluding wideband cards]

2.2.4 Main Power Supply

The PL9011 is a 300W power supply card that supports a total of 140W of power consumption.

Internal voltages include

- LNB – 13V and 18V, user-card selectable
- Analog circuitry: 12V, ±6.5 Vdc
- Digital Circuitry: 5V (3.3V and 1.8V (if applicable will be derived locally)

The power supply operates in an OR'ing configuration with the following features:

- Main power supply is 12V only
- All voltages are derived on cards
- The 13V and 18V PS is located on each transmitter card requiring an LNB functionality (not provided on the wideband transmitter)

Protection and other functionality

- Current limit on power supply
- The MTBF is calculated at 300,000 hours (Belcore Standard), at 25ºC.
- LNB Powering of +18V
- Input voltage 85 to 260 VAC
- Maximum ambient operating tempurature with free air convection is 45ºC
- Maximum ambient operating tempurature with an air flow of 15CFM is 55ºC
- Temperature –40º to +70ºC (without de-rating)
- FCC class B part 15 compliance
- Lightning protection
- Surge protection
- In rush current control

2.2.5 Additional functionality

- The LNB On/Off control on the transmitter card is locally controlled via the on-board Processor for operation without an SNMP controller. When an SNMP controller is plugged in it overrides this functionality only after reading the status of the switches and alerting the user if there is a mismatch.
- The same condition as above applies for the RF Switch alarm mask functionality on the RF switch card that is locally controlled also via the on-board processor.

2.3 Front and Rear Views

2.3.1 Chassis

The mechanical construction of the *The SatLight/Platinum Suite* is based on a standard 3U chassis, approximately 12” deep and 19” wide [300 × 485mm].

Figure 1 The Sat-Light/Platinum Chassis – Front View

Figure 2 The Sat-Light/Platinum Chassis – Rear View

There is space for twelve transmitter and receiver cards, one MCP card and two power supply units. The total card width in the chassis can be expressed in a horizontal pitch or HP. Each HP is defined as 5.08mm [0.2 inches]. The total card population is 84 HP; each transmitter and receiver is 5 HP, the MCP is 6 HP and each power supply 9 HP.

2.3.2 Backplane Connectors

Number	Connector Name	ConnectorType
J16	System Alarm outputs: relay & open collector	9-pin D-type Male
J17	1:2 RF Switch Control: RS-232	9-pin D-type Female
J18	EDFA, Aux control: RS 232	9-pin D-type Female
J20	RF Alarm outputs: OPen collector	25-pin D-type Female
J21	RSSI, PDI voltage outputs	25-pin D-type Female
J22	RF Alarms Outputs: Relay	25-pin D-type Male
J23	Optical Alarm Outputs: Relay	25-pin D-type Male

Table 1 Chassis Backplane Connectors

See section **3.7 External Pinouts and Connectors** on page17 for a detailed description of the connector pinouts.

2.4 Card Types

5 MHz cards
5 MHz Transmitter High RF Input (-30 to -5dBm), 1550nm laser
5 MHz Receiver Short to Mid Haul (4dB optical budget)
5 MHz Receiver Short to Mid Haul (10dB optical budget)
10 MHz cards
10 MHz Transmitter High RF Input (-30 to -5dBm), 1550nm laser
10 MHz Receiver Short to Mid Haul (4dB optical budget)
10 MHz Receiver Short to Mid Haul (10dB optical budget)
IF cards
IF Transmitter, 10 - 200MHz, High RF Input (-30 to -5 dBm), 1310nm laser
IF Transmitter, 10 - 200MHz, High RF Input (-30 to -5dBm), 1550nm laser
IF Transmitter, 10 - 200MHz, High RF Input (-30 to -5dBm), CWDM laser
IF Receiver, 10 - 200MHz, Short to Mid Haul (4 dB optical budget)
IF Receiver, 10 - 200MHz, Short to Mid Haul (10 dB optical budget)
IF Receiver, 10 - 200MHz, Long Haul (16dB optical budget)
L-Band cards
L-Band, 950 - 3000MHz, Transmitter High RF Input (-30 to -5 dBm), 1310nm laser
L-Band, 950 - 3000MHz, Transmitter High RF Input (-30 to -5 dBm), 1550nm laser
L-Band, 950 - 3000MHz, Transmitter High RF Input (-30 to -5 dBm), CWDM ITU laser
L-Band, 950 - 3000MHz, Transmitter w/DWDM ITU Laser. High RF Input (-30 to -5 dBm)
L-Band, 950 - 3000MHz, Transmitter Low RF Input (-60 to -25 dBm), 1310nm laser
L-Band, 950 - 3000MHz, Transmitter Low RF Input (-60 to -25 dBm), 1550nm laser
L-Band, 950 - 3000MHz, Transmitter Low RF Input (-60 to -25 dBm), CWDM ITU laser
L-Band, 950 - 3000MHz, High RF Output Receiver Short Haul (4dB optical budget)
L-Band, 950 - 3000MHz, High RF Output Receiver Medium Haul (10dB optical budget)
L-Band, 950 - 3000MHz, High RF Output Receiver Long Haul (16dB optical budget)
L-Band, 950 - 3000MHz, Low RF Output Receiver Short Haul (4dB optical budget)
L-Band, 950 - 3000MHz, Low RF Output Receiver Medium haul (10dB optical budget)
L-Band, 950 - 3000MHz, Low RF Output Receiver Long Haul (16dB optical budget)
L-Band, 950 - 3000MHz,Low RF Output Receiver Extra Long Haul (25dB optical budget)
Wideband cards
Wideband (10 to 3000 MHz) Transmitter Input Power (-50 to 0dBm), 1310nm
Wideband (10 to 3000 MHz) Transmitter Input Power (-50 to 0dBm), 1550nm
Wideband (10 to 3000 MHz) Transmitter Input Power (-50 to 0dBm), CDWM ITU Laser
Wideband (10 to 3000 MHz) Transmitter Input Power (-50 to 0dBm), DWDM ITU Laser
Wideband (10 to 3000 MHz) Receiver Short to Mid Haul (4dB optical budget)
Wideband (10 to 3000MHz) Receiver Mid to Long Haul (10dB optical budget)
Wideband (10 to 3000MHz) Receiver Long Haul (16dB optical budget)

Table 2 Card Types

Amplifier cards
28 dB Output Pre & Post Amp (50 & 75-Ohm)
55 dB Output Pre & Post Amp (50 & 75-Ohm)
Protection Switch cards
1:1 Protection Switch
Serial Data / Ethernet cards
1 Channel Serial Data Transceiver
4 Channel Serial Data Transceiver
Ethernet 10/100 Base-T Data Transceiver
Accessories (Passives)
Chassis Mounted RF splitter – 50 & 75-Ohm - IF
Chassis Mounted RF splitter – 75-Ohm - L-Band
Chassis Mounted RF splitter – 50 Wideband
Chassis Mounted Diplexer – 10 MHz + L-Band
Chassis Mounted Optical Splitter
Chassis Mounted 1310 + 1550nm WDM
Power Supply
Plug in Power Supply Card
Main Processor Card
MCP – Main Control Processor Plug in unit

Table 2 Card Types

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3 Installation Instructions

3.1 Mechanical Inspection

Unpack the product upon receipt and inspect it for signs of physical damage such as scratched panel surfaces, broken or missing parts, etc. Any in-shipment damage should be apparent upon visual inspection. Compare all items to the itemized invoice attached to your Foxcom package. If there is any apparent damage, file a claim with the transportation carrier in accordance with their instructions and see section **1.1 Warranty and Repair Policy** on page 1. Save all your shipping cartons until installation and performance verification has been completed.

3.2 Power Requirements

The Platinum products, model numbers PL7xxxx are designed to be installed in the PL7010 chassis. The chassis provides proper voltages to the individual installed cards via the backplane connector. Power required for the chassis is a sourrce of 95 to 250 VAC volts, single phase 50 to 60 VAC Hz, which can deliver approximately 165 watts.

Consideration should be given to the connection of the equipment to the supply curcuit and the effect that overloading of the curcuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

The equipment is intended to be installed by a servive person and should be connected to a socket-outlet witha protective earthing connection and permenantly connected to protective earth. Reliable earthing of rackmounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch curcuit (e.g. use of power strips).

3.3 Mounting - Chassis / Rack Configuration

The Sat-Light Platinum product cards are designed to be used in the PL7010 chassis. After carefully unpacking the chassis install it in your earth grounded equipment cabinet or rack. A ground plug is provided on the chassis backplane. Make sure to always load the heaviest equipment and chassis near the bottom and the lightest at the top. All surfaces of the cabinet that mate to the chassis should be conductive. The Platinum chassis should be located in a well lit area and be relatively free from dust. To ensure that no overheating of the cards occurs we recommend leaving a space of 1RU between all installed chassis.

The mounting of the equipment in the rack should be such that a hazardous condition is not acheived due to uneven mechanical loading.

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.

The Sat-Light Platinum chassis maximum ambient operating temperature with free air convection is 45C°. The Sat-Light Platinum chassis maximum ambient operating temperature with an air flow of 15CFM is 55C°.

If installed in a closed or multi-unit rack assembly, the operating ambient tempurature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment with the maximum ambient tempurature (Tma) specified by the manufacturer.

The Sat-Light Platinum has a storage temperature range of -45C° to +85C°. Please ensure that the environment where the Sat-Light Platninum is installed does not exceed the above stated temperatures.

3.4 Power Cable

For the protection of operating personnel, the National Electrical Manufacturers' Association (NEMA) recommends that the chassis and your cabinet be grounded. This product is equipped with a three-prong conductor power cable which, when plugged into an appropriate receptacle, grounds the chassis. The offset pin on the power cable three-prong connector is the ground pin. To preserve the protection feature when operating the product from a two-contact outlet, use a three-prong to two-prong adapter and connect the green pigtail on the adapter to ground. We also recommend using a ground plug on the backplane of the chassis.

3.5 Installation

The cards are shipped pre-installed in a PL7010 chassis unless ordered as separate items (replacements or spares). When installing the chassis into a cabinet or rack make sure that there is adequate space available for all cables required and safe access for trouble shooting. When replacing any cards always make sure they are aligned properly top and bottom in the chassis guides in the 3RU PL7010 chassis. Make sure the card fits completely into the subrack and that the backplane connector is fully engaged. If the card is not installed, the

empty slot should be sealed with a bloank cover secured with screws to the chassis.

If after installing the cards and chassis you have problems, see **Chapter Chapter 9 Troubleshooting** on page 77.

3.6 Connectors and Switches

- The card backplane connectors in use are the 55-pin CPCI (Compact PCI) connectors. The CPCI connector is used throughout the equipment on each card, including the power supply.
- The alarm relay connector is a 9-pin male D-type
- The EDFA control connector is a 9-pin female D-type
- The RF switch expansion control connector is a 9-pin female D-type
- Rear mounted Ethernet connectors (main and expansion) are RJ45, with integrated LEDs, located on the main processor card
- Four 25-pins D-type connectors for the following:
  - Discrete open collector peripheral card alarms (2 per each card) – female
  - Discrete peripheral card voltages (2 per each card) - female
  - Discrete peripheral card dry contact RF alarms - male
  - Discrete peripheral card dry contact optical alarms - male

Note:

1. The dry contacts are associated with the card alarms where the relays are located on the cards themselves
2. Open collector alarms are active high
3. Relay alarms are closed when there is no alarm and open in case of an alarm

- Care must be taken when inserting a card in a given slot. However, card signal pins are allocated such that no damage is likely to occur in case of wrong card insertion.
- Front Panel Debug Serial port is a D-type connector
- An RJ45 connector is located on the main processor's [MCP] front panel for debug purposes

3.7 External Pinouts and Connectors

Figure 3 The Sat-Light/Platinum Chassis – Rear View

Number	Connector Name	Connector Type
J16	System Alarm outputs: relay & open collector	9-pin D-type male
J17	1:2 RF Switch control: RS-232	9-pin D-type female
J18	EDFA, Aux control: RS 232	9-pin D-type female
J20	RF Alarm outputs: open collector	25-pin D-type female
J21	RSSI, PDI voltage outputs	25-pin D-type female
J22	RF Alarms outputs: relay	25-pin D-type male
J23	Optical Alarm outputs: relay	25-pin D-type male

Table 3 Chassis Backplane Connectors

3.7.1 System Alarm Outputs: Relay and Open Collectors [J16]

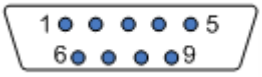
Pin No.	Function	Alarm present	Slot Number	9-pin D Type Male Connector
1	PS1 Alarm (Open collector)	Active Low	14	
2	System Alarm (Dry contact)	Open[1 2]	13	
3	PS1 Alarm (Dry contact)	Open	14	
4	PS2 Alarm (Dry contact)	Open	15	
5	GND	--	--	
6	PS2 Alarm (Open collector)	Active Low	15	
7	System Alarm (Dry contact)	COM	13	
8	PS1 Alarm (Dry contact)	COM	14	
9	PS2 Alarm (Dry contact)	COM	15	

Table 4 J16 System Alarm Outputs: Relay and Open Collectors

1. Normally open
2. The System alarm will report a failure if the PL700 MCP detects a major alarm on any of the RF cards installed in the chassis.

3.7.2 1:2 RF Switch Control: RS-232 [J17]

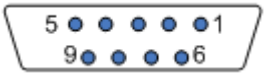
Pin No.	Function	Name	Slot No.	9-pin D-Type Female Connector
1	--	--	--	
2	Receiver [Data input]	Ch.1 receiver	2	
3	Transmitter [Data input]	Ch.1 transmitter	2	
4	--	--	--	
5	GND	--	--	
6	--	--	--	
7	Receiver [Data input]	Ch.2 receiver	8	
8	Transmitter [Data input]	Ch.2 transmitter	8	
9	--	--	--	

Table 5 J17 1:2 RF Switch Control: RS-232

3.7.3 EDFA/ Aux Control Connector Pinout: RS-232 [J18]

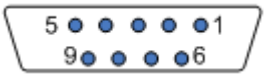
Pin No.	Function	Name	Slot No.	9-pin D-Type Female Connector
1	--	--	--	
2	Receiver [Data input]	EDFA receiver	13	
3	Transmitter [Data input]	EDFA transmitter	13	
4	--	--	--	
5	GND	--	--	
6	--	--	--	
7	--	--	--	
8	--	--	--	
9	--	--	--	

Table 6 J18 EDFA/Aux Control Connector Pinout: RS-232

3.7.4 RF and Optical Alarm Outputs Connector Pinout: Open Collector [J20]

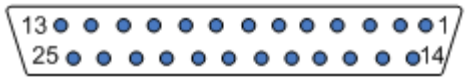
Pin No.	Function	Alarm Present	Slot No.	25-pin D- Type Female Connector
1	RF Alm1	Active High	1	
2	RF Alm2	Active High	2[1]	
3	RF Alm3	Active High	3	
4	RF Alm4	Active High	4	
5	RF Alm5	Active High	5[1]	
6	RF Alm6	Active High	6	
7	RF Alm7	Active High	7	
8	RF Alm8	Active High	8[1]	
9	RF Alm9	Active High	9	
10	RF Alm10	Active High	10	
11	RF Alm11	Active High	11[1]	
12	RF Alm12	Active High	12	
13	GND	--		
14	Opt Alm1	Active High	1	
15	Opt Alm2	Active High	2[1]	
16	Opt Alm3	Active High	3	
17	Opt Alm4	Active High	4	
18	Opt Alm5	Active High	5[1]	
19	Opt Alm6	Active High	6	
20	Opt Alm7	Active High	7	
21	Opt Alm8	Active High	8[1]	
22	Opt Alm9	Active High	9	
23	Opt Alm10	Active High	10	
24	Opt Alm11	Active High	11[1]	
25	Opt Alm12	Active High	12	

Table 7 J20 RF Alarm Outputs Connector Output: Open Collector

1. When the PL7611 1:1 RF Switch is being used in slots 2, 5, 8, 11 it will report and optical or RF alarm if any of the receivers mounted on both sides of the switch are failing.

3.7.5 RSSI - PDI Voltage Outputs Connector Pinout [J21]

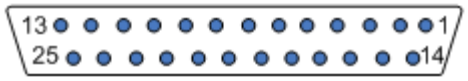
Pin No.	Function	Pin Name	Slot No.	25-pin D-Type Femal Connector
1	RSSI	RSSI1	1	
2	RSS	RSSI2	2	
3	RSSI	RSSI3	3	
4	RSSI	RSSI4	4	
5	RSSI	RSSI5	5	
6	RSSI	RSSI6	6	
7	RSSI	RSSI7	7	
8	RSSI	RSSI8	8	
9	RSSI	RSSI9	9	
10	RSSI	RSSI10	10	
11	RSSI	RSSI11	11	
12	RSSI	RSSI12	12	
13	GND	--	--	
14	PDI	PDI1	1	
15	PDI	PDI2	2	
16	PDI	PDI3	3	
17	PDI	PDI4	4	
18	PDI	PDI5	5	
19	PDI	PDI6	6	
20	PDI	PDI7	7	
21	PDI	PDI8	8	
22	PDI	PDI9	9	
23	PDI	PDI10	10	
24	PDI	PDI11	11	
25	PDI	PDI12	12	

Table 8 J21 RSSI - PDI Voltage Outputs Connector Pinout

3.7.6 RF Alarm Outputs Connector Pinout: Relay [J22]

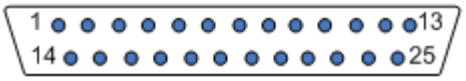
Pin No.	Function	Alarm Present	Slot No.	25-pin D Type Male Connector
1	RF Alarm1	Open[1]	1	
14				
2	RF Alarm2	Open[1]	2[2]	
15				
3	RF Alarm3	Open[1]	3	
16				
4	RF Alarm4	Open[1]	4	
17				
5	RF Alarm5	Open[1]	5[2]	
18				
6	RF Alarm6	Open[1]	6	
19				
13	GND	--	--	
7	RF Alarm7	Open[1]	7	
20				
8	RF Alarm8	Open[1]	8[2]	
21				
9	RF Alarm9	Open[1]	9	
22				
10	RF Alarm10	Open[1]	10	
23				
11	RF Alarm11	Open[1]	11[2]	
24				
12	RF Alarm12	Open[1]	12	
25				

Table 9 J22 RF Alarm Outputs Connector Pinout: Relay

1. Normally open
2. When the PL7611 1:1 RF Switch is being used in slots 2, 5, 8, 11 it will report and optical or RF alarm if any of the receivers mounted on both sides of the switch are failing.

3.7.7 Optical Alarms Outputs Connector Pinout: Relay [J23]

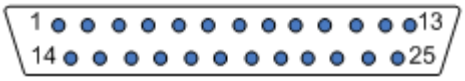
Pin No.	Function	Alarm Present	Slot No.	25-pin D Type Male Connector
1	Opt. Alarm1	Open[1]	1	
14				
2	Opt. Alarm2	Open[1]	2[2]	
15				
3	Opt. Alarm3	Open[1]	3	
16				
4	Opt. Alarm4	Open[1]	4	
17				
5	Opt. Alarm5	Open[1]	5[2]	
18				
6	Opt. Alarm6	Open[1]	6	
19				
13	GND	--	--	
7	Opt. Alarm7	Open[1]	7	
20				
8	Opt. Alarm8	Open[1]	8[2]	
21				
9	Opt. Alarm9	Open[1]	9	
22				
10	Opt. Alarm10	Open[1]	10	
23				
11	Opt. Alarm11	Open[1]	11[2]	
24				
12	Opt. Alarm12	Open[1]	12	
25				

Table 10 J23 Optical Alarm Outputs Connector Pinout: Relay

1. Normally open
2. When the PL7611 1:1 RF Switch is being used in slots 2, 5, 8, 11 it will report and optical or RF alarm if any of the receivers mounted on both sides of the switch are failing.

3.8 Aligning the Fiber Optic Link

3.8.1 Aligning a Standard RF Link

To align a standard RF link:

1. Connect the RF source signal into the *Platinum* optical transmitter RF input.
2. Use the optical transmitter keypad and front panel, to enable/disable the LNB and select the LNB voltage.
3. Use the optical transmitter keypad and front panel LCD to select the type of Gain control (AGC/MGC)
4. On AGC MODE select the required IMD. The IMD parameter can be adjusted from 55 to 40dBc.
5. On MGC MODE insert the **User RF Power Input**[1] * and select the required IMD.
6. Using the optical receiver keypad and front panel LCD select the Receiver gain control mode (AGC/MGC) and adjust the desired RF power output.

3.8.2 Aligning a Redundant RF Link

To align a redundant RF Link:

1. Connect the RF source signal into the *Platinum* passive RF splitter common input.
2. Make sure that the *Platinum* RF passive devices (RF splitter, RF diplexer etc.) output is connected to the RF signal input of the Platinum optical transmitters.
3. Use the main [A] optical transmitter keypad and front panel, to enable/disable the LNB and select the LNB voltage.
4. Use the optical transmitter keypad and front panel LCD to select the type of Gain control (AGC/MGC)
5. In **AGC Mode** select the required IMD. IMD parameter can be adjusted from 50 to 40dBc.
6. In **MGC Mode** insert the **User RF Power Input** and select the required IMD.
7. Repeat steps 3,4,5 and 6 for the backup [P] transmitter.
8. Use the main [A] optical receiver keypad and front panel LCD to select the gain control mode (AGC/MGC). Adjust the desired RF power output.
9. Repeat step 8 for the backup [P] receiver.
10. Use the 1:1 Switch keypad and front panel LCD to adjust the RSSI[2] threshold for the main and the backup channels, Set the threshold value to 100mV below the RSSI value.

---

1. The **User RF power input** is the composite RF power applied to the optical transmitter RF input. The value is measured using the RF power detector embedded in the optical transmitter. To access the embedded RF power meter scroll through the LCD menu. The **RF power input** is under the **Monitor** section.
2. **RSSI** - RF Signal Strength Indicator. This is a DC voltage created in the receiver. The RSSI voltage is proportional to the power level of the RF signal coming out of the optical receiver. RSSI is used by the 1:1 switch to monitor the status of both the main [A] and the backup [P] channels.

3.8.3 Recommended Settings for Typical Applications

Uplink Application

	Parameter	Settings	Comments
Optical Transmitter	LNB	None	
	Gain Control	MGC	
	IMD	50 to 55dBc	
	RF USER input power	According to transmitter internal power measurement	
Optical Receiver	Gain Control	MGC	
	RF Output Power	As required by BUC	

Downlink Application

	Parameter	Settings	Comments
Optical Transmitter	Gain Control	AGC[1]	
	IMD	40-45dBc	
	LNB	None/13V/18V	As required
Optical Receiver	Gain Control	MGC	
	RF Output Power	As required by Satellite receiver	

1. In cases where the received satellite signal strength is monitored for tracking, MCG mode should be used on the transmitter.

4 Configuring the Main Control Processor Card [MCP]

The MCP card has an RS-232 craft port for initialization and security settings. Before configuring the card you must obtain your local workstation's Default Gateway IP address, NetMask information and the card's IP address from your system administrator.

4.1 Configuring the MCP Card

1. Run a communications data application such as Windows *Hyperterminal.*
   Note: The application must be able to connect to RS232 protocol.
   To run the communications data application, click **Start > All Programs > Accessories > Communications >** [***HyperTerminal***]. A **Connection Description** dialog box is displayed.

Figure 4 Connection Description dialog box

2. Enter a **Name** in the **Name** field box. Click **OK**. A **Connect to** dialog box is displayed.

Figure 5 Connect to dialog box

3. Select the **Com port** setting. Click OK. A **Com Properties** dialog box is displayed.

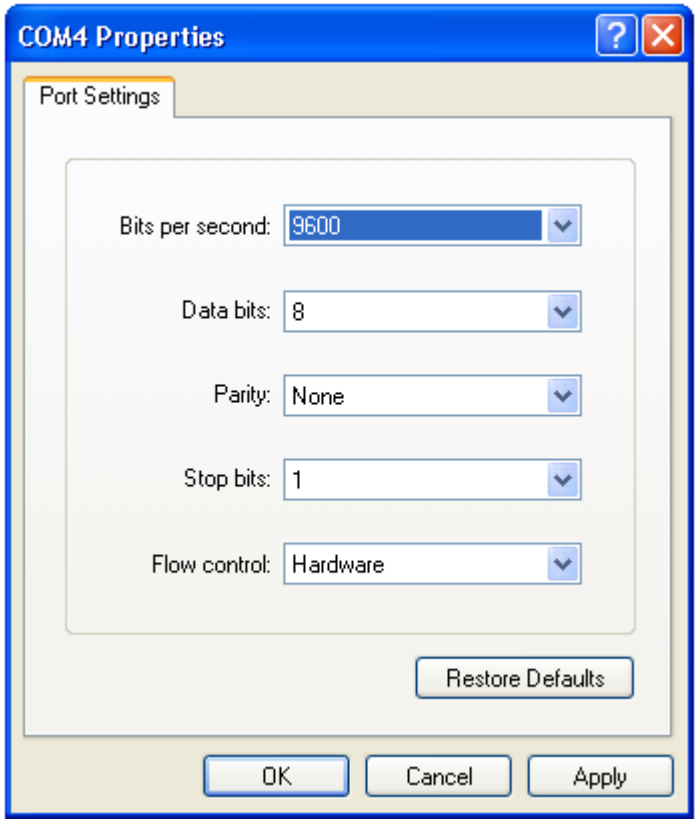


Figure 6 COM Port Properties dialog box

4. Set the Communications parameters:

Bits per second	9600
Data Bits	8
Parity	None
Stop bits	1
Flow control	None

Table 13 COM*x* Properties

5. Reset the MCP card to start the boot loader application.
6. To stop the application, press any key with in 5 seconds of the start of the application.
7. Enter a CLI password. [Press **Enter** to skip the command]

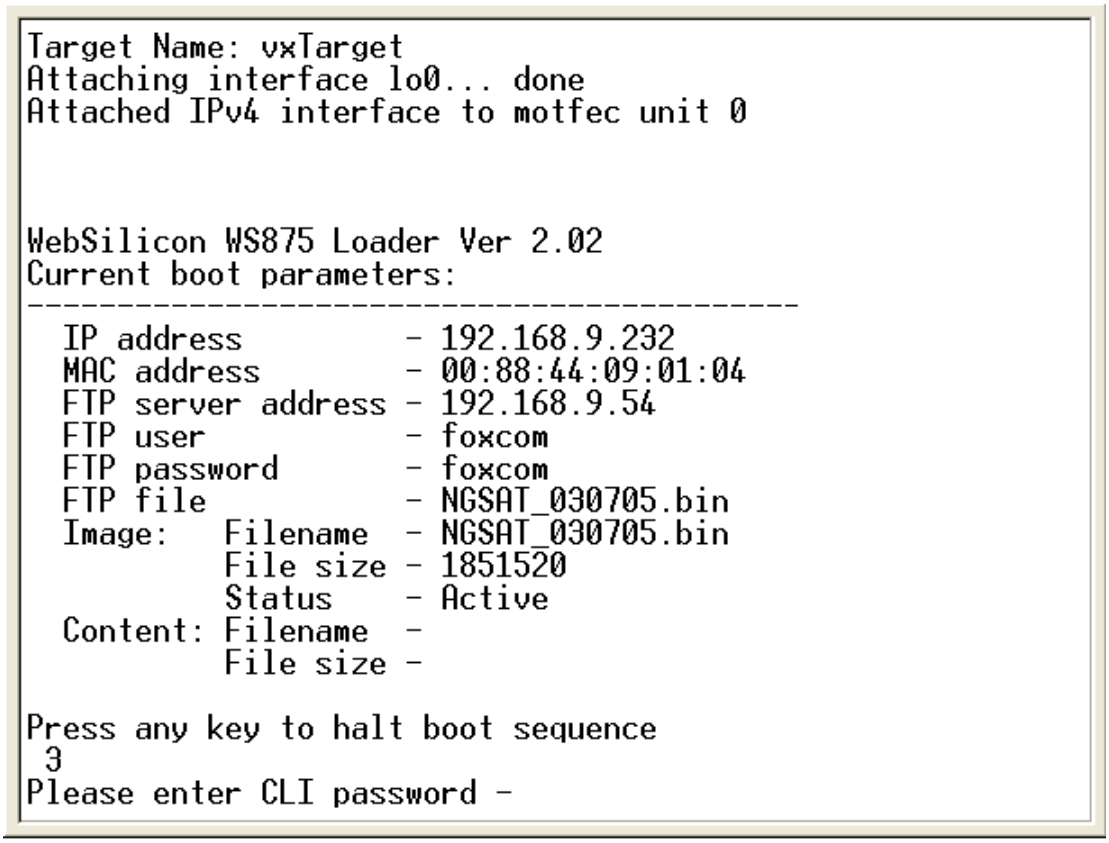


Figure 7 Insert CLI password

Note: The default password is `foxcom` (case sensitive).We *strongly* recommend that you insert your own unique password.

Important **In case of a returned product [RMA] we recommend that you reset the password to foxcom. Otherwise, advise Foxcom of the assigned password. WIthout the password trouble shooting and repairs cannot be carried out.**

8. Follow the on-screen instructions to keep or modify any of the following parameters:
FTP
   - IP address
   - Netmask address
   - Gateway address
   - SNMP “Get” community password
   - SNMP “Set” community password
   - FTP server address
   - FTP user
   - FTP password
   - FTP file name
   - Boot operation

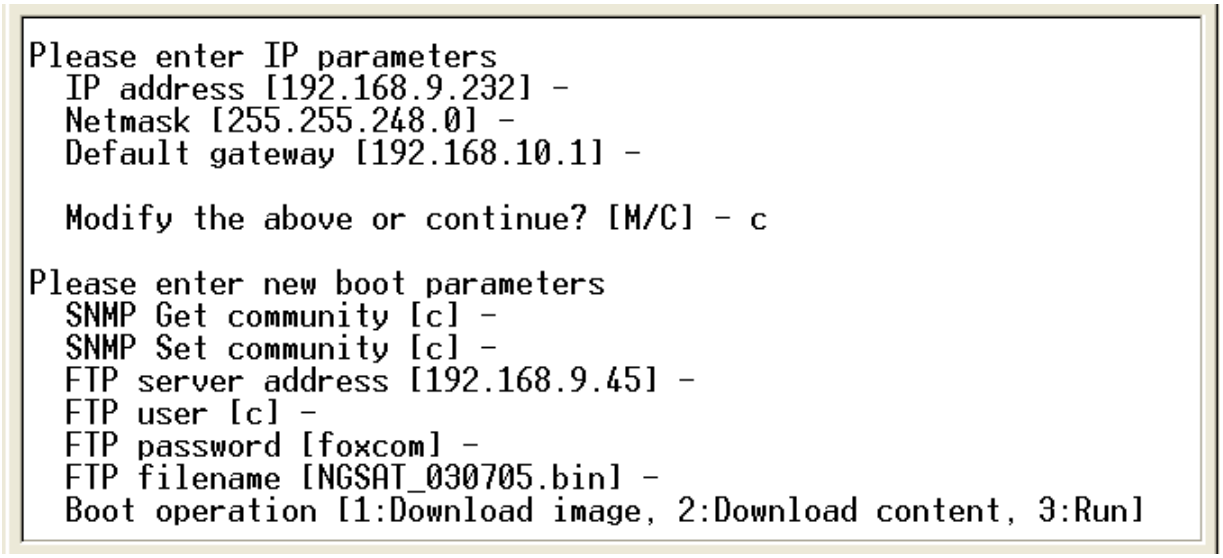


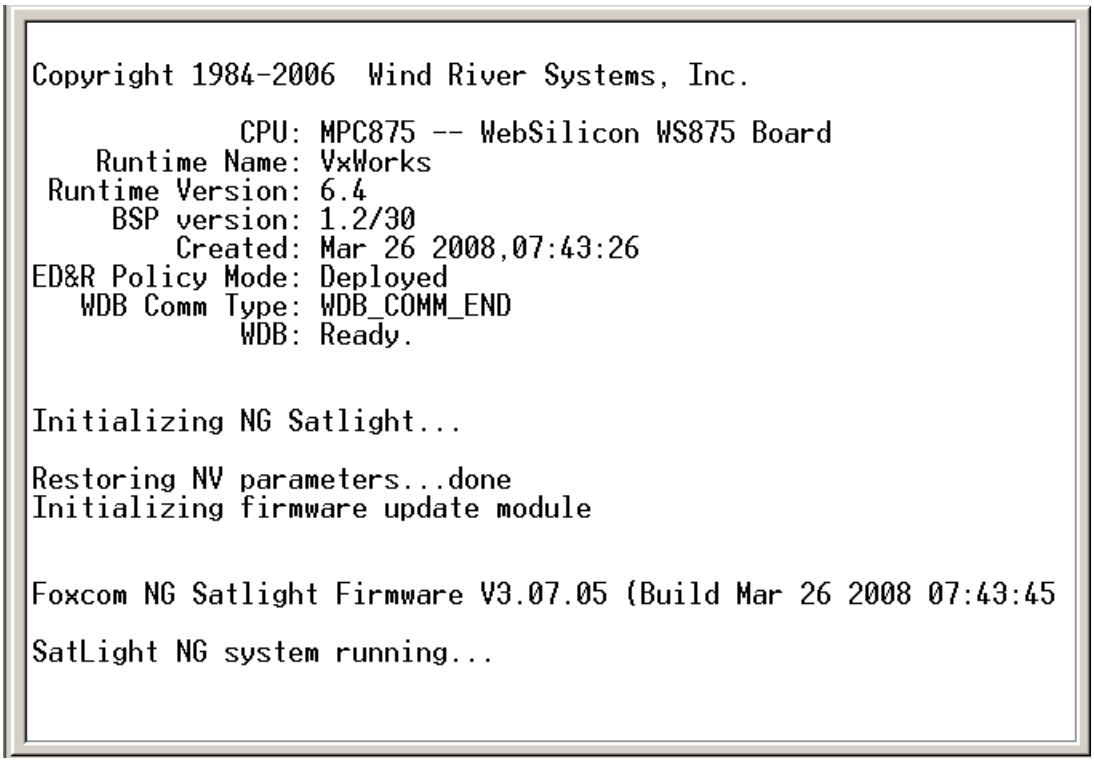
Figure 8 Inserting or Modifying Boot-up Parameters

Type [**Y**(es) / **N**(o)], [**M**(odify) / **C**(ontinue)] or new IP and/or boot-up parameters as required.

Note: 2. Download content is not available.

9. System-specific Image **(*.bin)** files for your system, are pre-configured at the factory.

10. To complete the bootup operation, select **3** [Run].



11. The boot operation is now complete. The MCP is ready and operational.

To launch the MCP application see section **4.2.2 To Connect the MCP Application Controller to a LAN** on page 34.

4.1.1 Inserting CLI, Admin and Web Host Passwords

4.1.1.1 To Insert CLI and Admin Passwords

To insert or change your **CLI** and **Admin** (SNMP GET/SET COMMUNITIES) passwords see steps **7** and **8**, respectively in section **4.1 Configuring the MCP Card** on page 27.

4.1.1.2 To insert a Web host password:

1. Open the Windows **Start** menu.
2. Select **Run**.
3. Type **`telnet`** ***`[your SNMP address]`*** in the **Open** field box.
4. Click **OK**. The Telnet screen opens, displaying **Welcome to Foxcom management system**.
5. Enter your current password. The default password is **`foxcom`** (case sensitive). Hit **Enter**.
6. At the FOXCOM prompt [FOXCOM >] type **`set http password ?`**. Hit **Enter**.

   Note

   - **Guest** Read only
   - **Admin** Updating software is allowed
     Changing the configuration is *not* allowed
   - **Technician** Updating software is allowed
     Changing the configuration is allowed
7. Follow the on-screen example.

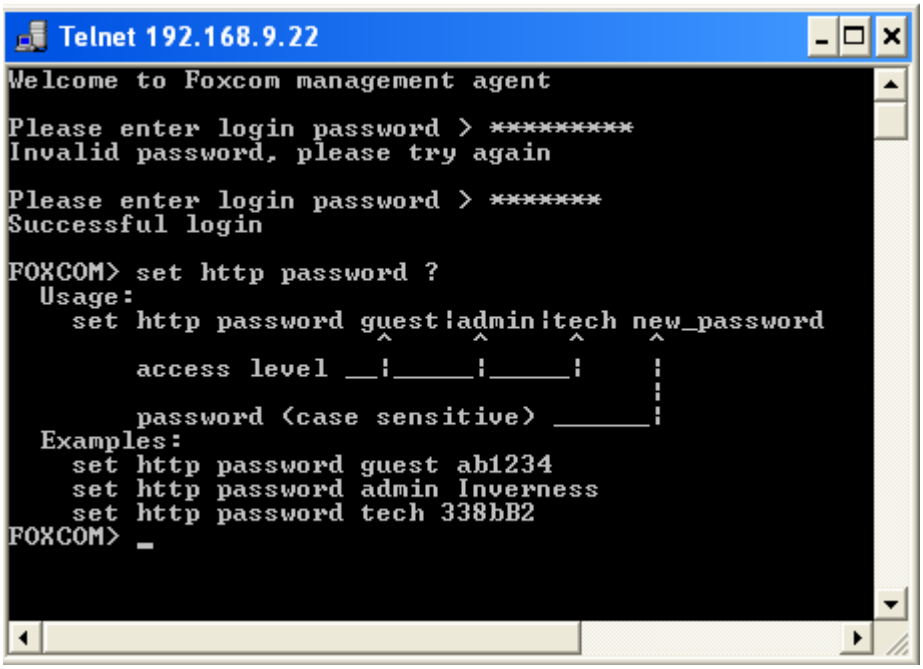


Figure 9 Inserting a Web Host Password

I

4.2 Connecting the MCP Card to a LAN

4.2.1 Microsoft Critical Updates

In April 2006 Microsoft released critical updates for Microsoft Windows XP Service Pack 2 (SP2) and for Microsoft Windows 2003 Service Pack 1. These updates change the behavior of Java applets or ActiveX controls in Internet Explorer 6. Users may install these updates without realizing they have changed the behavior of their applications.

As a result of these updates, when starting the *The SatLight/Platinum Suite* a tool tip appears prompting the user to **Press SPACEBAR or ENTER to activate and use this control**.

Figure 10 Microsoft Tool tip Warning

To activate the *Sat-Light/Platinum* application, *either* hit the **Spacebar** *or* press the **Enter** key *or* use the mouse to click on the interface.

For more information about these updates and how they affect your operating system see:

http://www-1.ibm.com/support/docview.wss?rs=464&context=SSPQ7E&dc=D600&uid=swg21234374&loc=en_US&cs=UTF-8&lang=en

and

http://view.exacttarget.com/?ffcb10-fe8710757d6c0c7976-fde1167976630d7a7c177971-fefc1571706301

4.2.2 To Connect the MCP Application Controller to a LAN

Important *Java Standard 6 Edition or later must be installed on your computer to view the graphics properly.*

The front panel Ethernet port connects to your LAN. To connect the MCP Controller Card:

1. Connect the MCP card to your LAN using an Ethernet cable.
2. Run your Web browser.
3. Login into the MCP with your IP address.
4. The **first** time you run MCP on a computer a **Digital Signature Security Warning** is displayed:

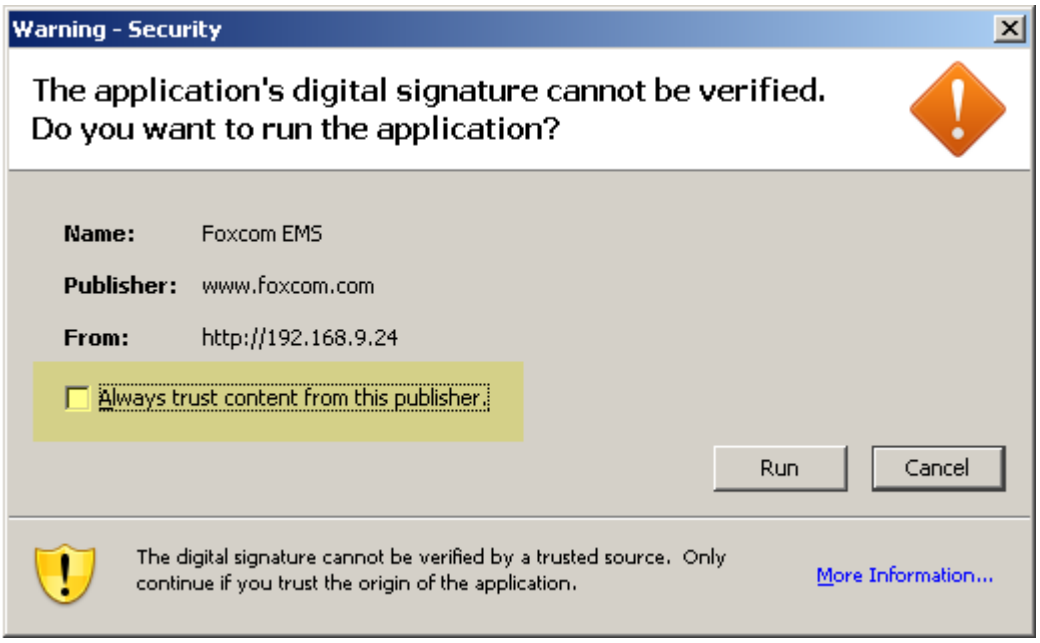


Figure 11 Digital Signature Security Warning

5. Select **Always trust content from this published**. The **Publisher Signature** is retained by the computer and will *not* appear again.

6. Click **Run** to open the **Foxcom EMS Login** dialog box.

Figure 12 Login dialog box

7. In the **User Name field box**, select your **User** name.
   - **Guest** Read only
   - **Admin** Updating software allowed
     Changing the configuration is *not* allowed
   - **Technician** Updating software allowed
     Changing the configuration allowed
8. In the **Password field box**, type your Password.

User	Password
Guest	Guest
Admin	Admin

   To change your password, see **4.1.1 Inserting CLI, Admin and Web Host Passwords** on page 32.
9. The GET and SET community settings are for informational purposes only.
10. Click **Connect**.

The *The SatLight/Platinum Suite* GUI is displayed providing a graphical representation of the *Sat-Light/Platinum* chassis. Click any receiver or transmitter card to display module type, location, status and current RF and optical status.

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5 Product Overview

5.1 Mechanical Construction

The mechanical construction of the *The SatLight/Platinum Suite* is based on a standard 3U chassis, approximately 12” deep and 19” wide [300 × 485mm].

Figure 13 The Sat-Light/Platinum Chassis – Front View

Figure 14 The Sat-Light/Platinum Chassis – Rear View

5.1.1 Mechanical Parameters

- There is space for twelve transmitter, receiver, one MCP [M&C] and two power supply cards
- The transmitter and receiver cards are constructed out of a metal enclosure providing mechanical strength to the rear RF and optical connectors and cables, heat dissipation and EMC /RFI protection.
- The AC power supply cards are housed in an open frame metal enclosure
- Lexan covered panels are used for all cards
- Slim narrow handles are used.
- The power supply [PS] and the MCP cards have different dimensions for the backplane connector location as well as the card guides for polarization. This is done so a peripheral card cannot be plugged in the PS and MCP slots and vice versa.

5.1.2 Card Types

5.1.2.1 Transmitters, Receivers, RF Amplifiers, RF Switch and Passive Cards

The first twelve slots are housed by a combination of transmitters, receivers, RF Amplifiers, RF Switch cards and other applicable cards. Transmitters, receivers and RF amplifier cards can reside in any of the twelve slots. The RF Switches reside in pre-allocated slots. The following describes the different configurations for a 1:1 Protection Switch:The main processor card (MCP) is located in slot 13.

Configuration	RF Switch Type	RF Switch	Protected cards Slot no.	Protecting card Slot no.
All cards are 1:1	1:1	2	1	3
	1:1	5	4	6
	1:1	8	7	9
	1:1	11	10	12

Table 14 RF Switches: Slot Configurations

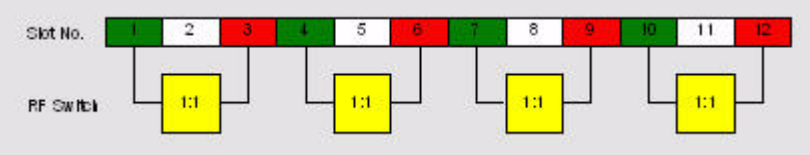


Figure 15 RF Switch: Slot Configuration

- The Optical Alarm signal required for RF Switching is supplied to the RF Switch card processor via a discrete backplane line from the receiver cards.
- The RF Switching event is activated by the Processor's S/W according to the following R**F Switching c**riteria (OR function):
  - Optical Alarms from the adjacent receiver cards
  - RF DC input signal level (RSSI, generated on the RF Switch board via an A/D according to a programmable reference voltage threshold)
- RF Switching time is less than 50 mS

5.1.2.2 Main Processor Card

The main processor card is located in slot 13.

5.1.2.3 Power Supply Cards

There are two AC power supplies located in slots 14 and 15.

5.2 System Monitoring & Control [M&C]

The *The SatLight/Platinum Suite* has its M&C functionality split between the main Processor board (MCP) and the peripheral cards. On the MCP, a MPC875 based daughter board (WS875) includes the main logic and processing power. In addition, there is an Ethernet Switch located on the MIF (Microprocessor Interface) carrier board. All peripheral cards use the Microchip PIC24 controller.

- The *The SatLight/Platinum Suite* basic configuration calls for the MCP to be plugged in all the time in order to utilize all the equipment's features. However, the cards are capable of operating without a main processor card present. There are two special cases:
  a. In case the Processor card was extracted, the peripheral card will stay with the last programmable information downloaded prior to the extraction event.
  b. In case there is no processor card the peripheral card will stay with the programmable information installed during production
- Discrete alarm and voltage monitoring signals are channeled to the backplane connectors.
- Ethernet – two 10/100BT (main and debug) ports. An on-board Ethernet Switch is used.
- A Microchip PIC24 controller is used on each peripheral card. The design is such that there is a minimum of peripheral components around the MCU and an I^2C bus is used for the internal circuitry
- The Slot address is hard wired on the backplane for each card. The address allocation is as follows:

Card Name	Slot Address
RSVD	0
Transmitter/receiver/Amp	1 to 12
MCP card	13
Power Supplies	14 & 15

Table 15 Card/Slot allocation

- An ID PROM resides on each card and on the backplane. Each card's ID PROM is controlled by the local PIC24 processor. The backplane ID PROM is controlled by the main processor. The ID PROM stores the following information:
  - › Card Name & Functionality
  - › Card Cat. no.
  - › Card H/W Revision no. (A0, A1, etc.)
  - › Card H/W Version no. (Partial assembly, if applicable)
  - › Manufacturing Code (including Manufacturer code, Date of Manufacturing and card serial no.)
  - › Laser wavelength, Output power and other Laser type parameters

Note: The ID PROM is programmed and read in production prior to the board release

5.3 Alarms and Displays

5.3.1 Transmitter: LEDs and Switches

LED Name	Color	Description
Power	Green	Power On
	No Light	Power Off
Alm	Green	No Alarms
	Amber	Minor Alarms
	Red	Critical Alarm
RF Input	Green	Input within specification
	Orange	Input below specifications
	Red	No input or above specifications
Remote	Yellow	Main processor control in effect
	No Light	No Main Processor Control

Table 16 Transmitter: LEDs

Switch Name	Position	Description
LCD Control	Up	LCD scroll up
	Down	LCD scroll down
	Enter	LCD select
	Back	LCD back command

Table 17 Transmitter: Switch

5.3.2 Receiver: LEDs and Switches

LED Name	Color	Description
Power	Green	Power On
	No light	Power Off
Alm	Green	No Alarms
	Amber	Minor Alarms
	Red	Critical Alarm
Remote	Yellow	Main processor control in effect
	No light	No Main Processor Control

Table 18 Receiver: LEDs

Switch Name	Position	Description
LCD Control	Up	LCD scroll up
	Down	LCD scroll down
	Enter	LCD select
	Back	LCD back command

Table 19 Receiver: Switch

5.3.3 Amplifier: LEDs and Switches

LED Name	Color	Description
Power	Green	Power On
	No Light	Power Off
Alm	Green	No Alarms
	Red	Critical Alarm
RF Input	Green	Input within specification
	Red	No input or above specifications
Remote	Yellow	Main processor control in effect
	No Light	No Main Processor Control

Table 20 Amplifier: LEDs

Switch Name	Position	Description
LCD Control	Up	LCD scroll up
	Down	LCD scroll down
	Enter	LCD select
	Back	LCD back command

Table 21 Amplifier: Switch

5.3.4 1:1 RF Switch LEDs and Switches

LED Name	Color	Description
Power	Green	Power On
	No Light	Power Off
Alm	Green	No Alarms
	Red	Critical Alarm
Remote	Yellow	Main processor control in effect
	No Light	No Main Processor Control

Table 22 1:1 Switch: LEDs

Switch Name	Position	Description
LCD Control	Up	LCD scroll up
	Down	LCD scroll down
	Enter	LCD select
	Back	LCD back command
Override/Remote	Override	Main uP control override
	Normal	Main uP control in effect

Table 23 1:1 Switch: Switch

5.3.5 Serial Data LEDs

LED Name	Color	Description
Power	Green	Power On
	No Light	Power Off
Alm	Green	No Alarms
	Amber	Minor Alarms
	Red	Critical Alarm
Remote	Yellow	Main processor control in effect
	No Light	No Main Processor Control

Table 24 Serial Data LEDs

5.3.6 Ethernet LEDs

LED Name	Color	Description
Power	Green	Power On
	No Light	Power Off
TX	Green	TX/RX copper link
FX	Green	TX/RX Fiber link

Table 25 Ethernet LEDs

5.3.7 MCP LEDs

LED Name	Color	Description
Power	Green	Power On
	No Light	Power Off
Alm	Green	No Alarms
	Amber	Minor Alarms
	Red	Critical Alarm
Comm	Yellow	Ethernet communication OK
	No Light	Ethernet communication fault

Table 26 MCP LEDs

5.3.8 Power Supply LEDs

LED Name	Color	Description
Power	Green	Power On
	No Light	Power Off
Alm	Green	No Alarms
	Amber	Minor Alarms
	Red	Critical Alarm
Remote	Yellow	Main processor control in effect
	No Light	No Main Processor Control

Table 27 Ethernet LEDs

Chapter 6 LCD Display and Navigation

For the **current** LCD Display and Navigation, see **Chapter 10 Current LCD Display and Navigation** on page 81.

6.1 LCD Menu Trees

There is an LCD display and four navigation buttons on each of the transmitter, receiver, RF amplifier and RF switch cards. **Figures 16** to **20** illustrate the menu tree for each family of cards.

6.1.1 L-Band, Wide Band and IF Transmitter Menu Tree

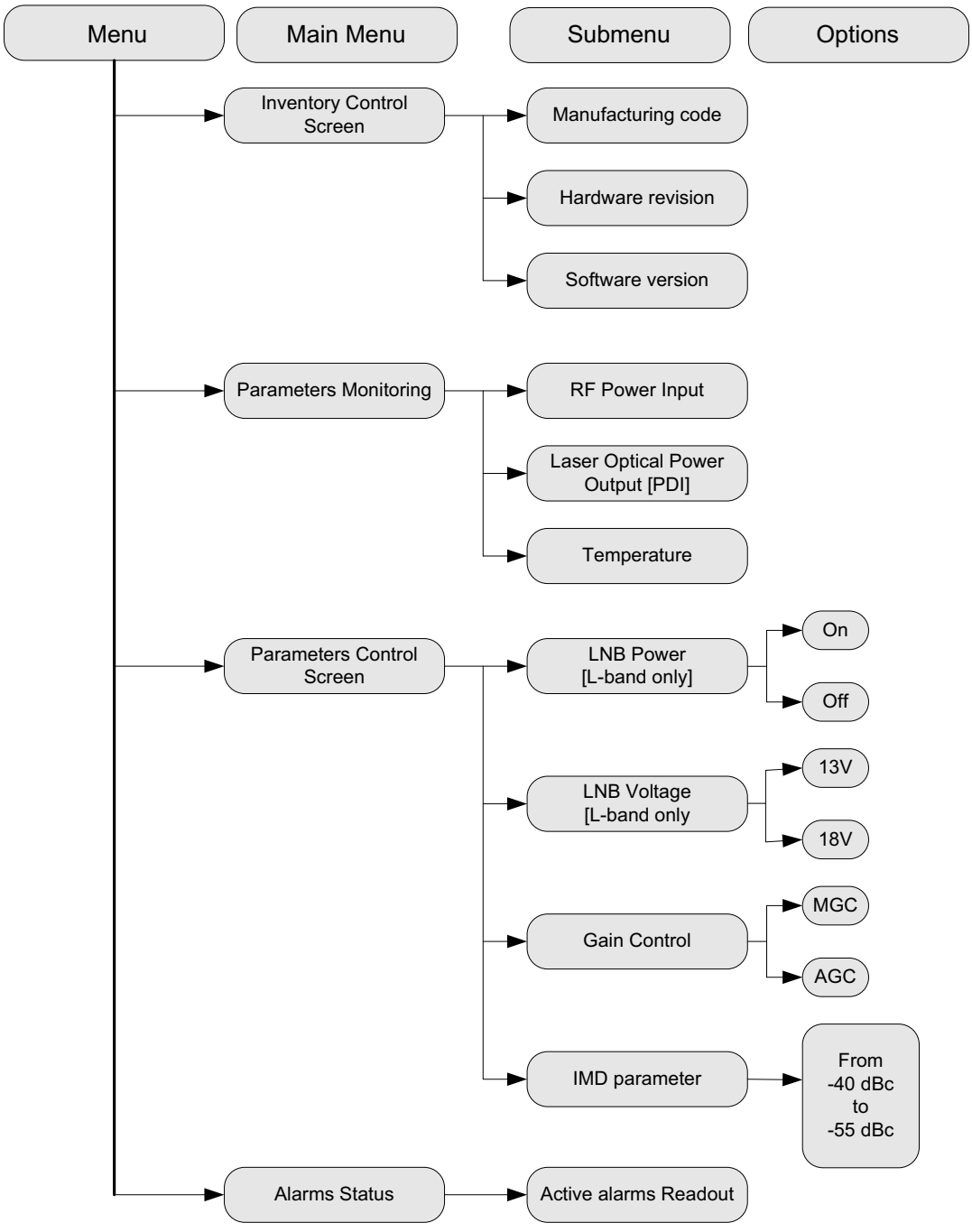


Figure 16 L-Band, Wide Band and IF Transmitter Menu Tree

6.1.2 10 MHz Transmitter Card Menu Tree

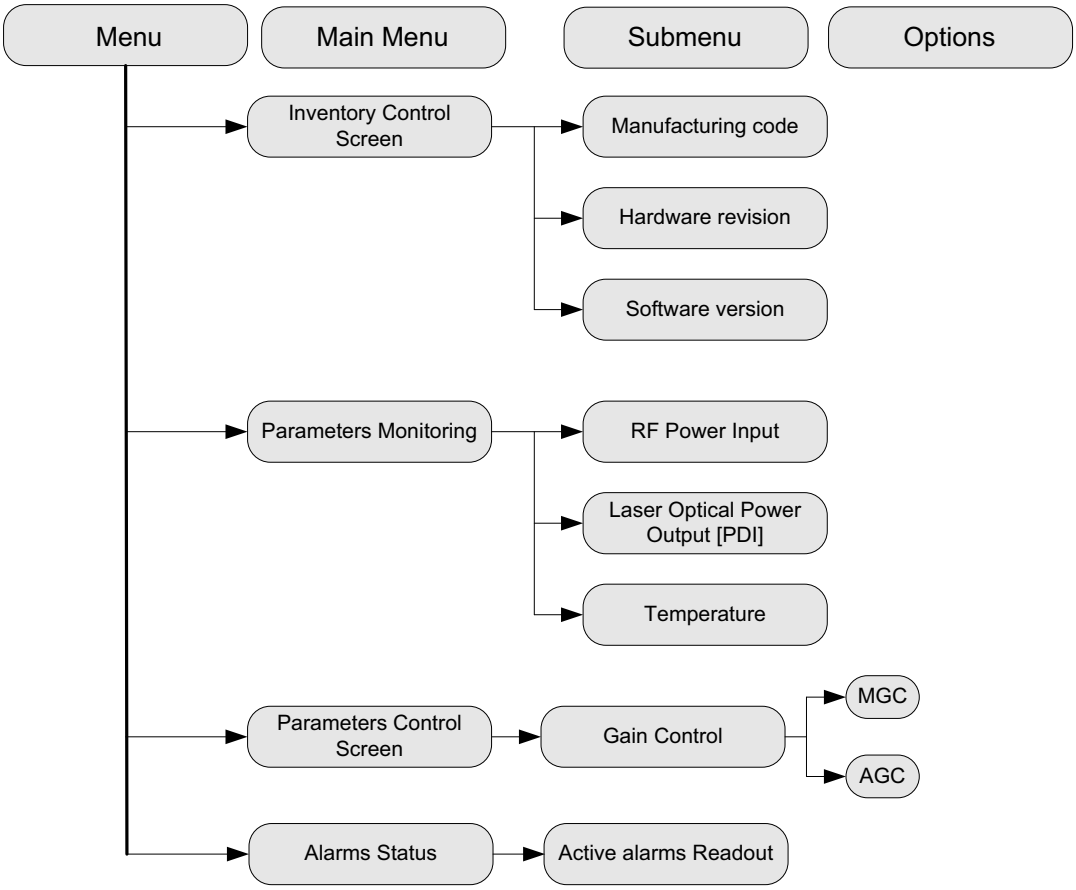


Figure 17 10 MHz Transmitter Menu Tree

6.1.3 Receiver Card Menu Tree

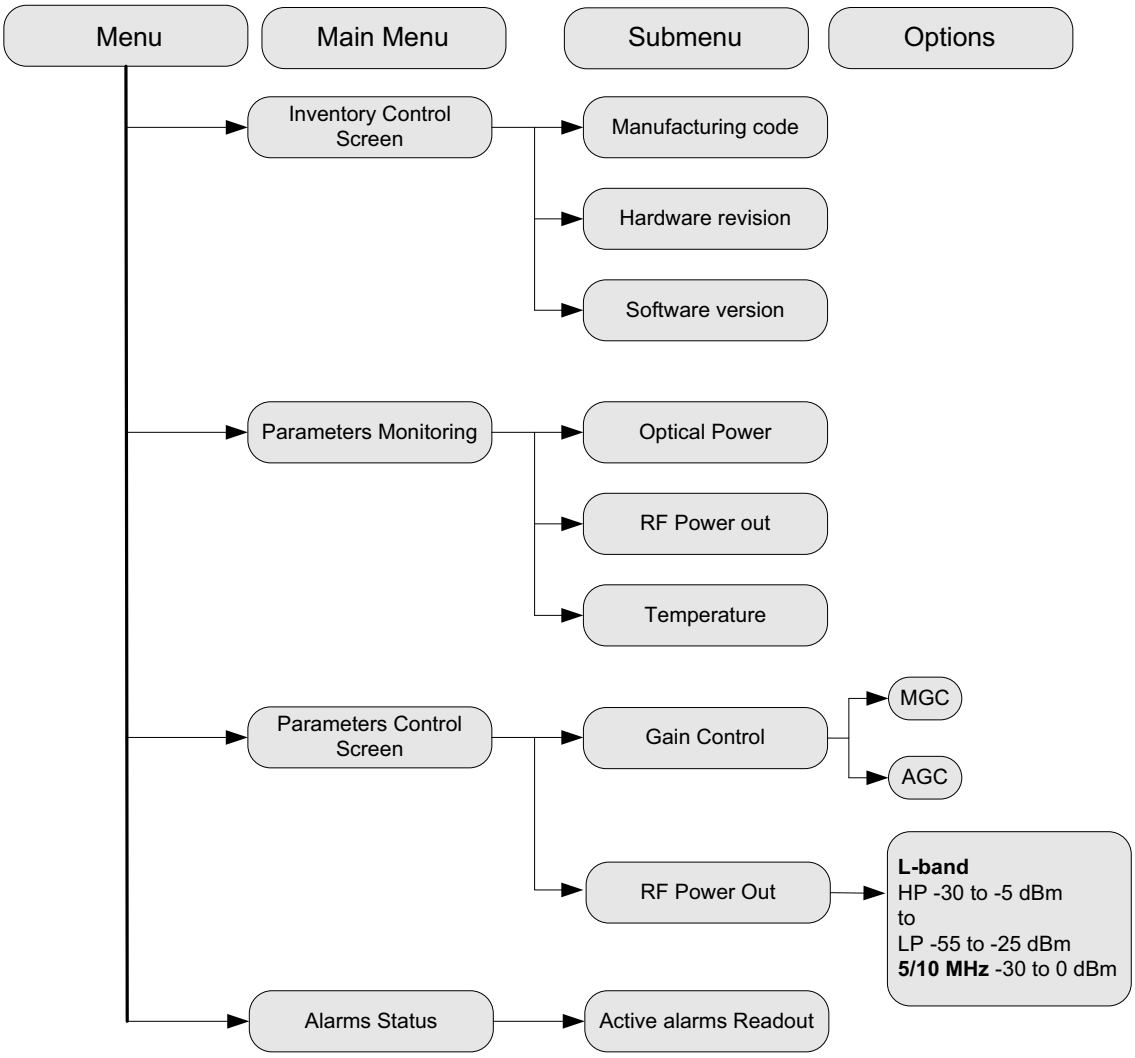


Figure 18 Receiver Card Menu Tree

6.1.4 Amplifier Card Menu Tree

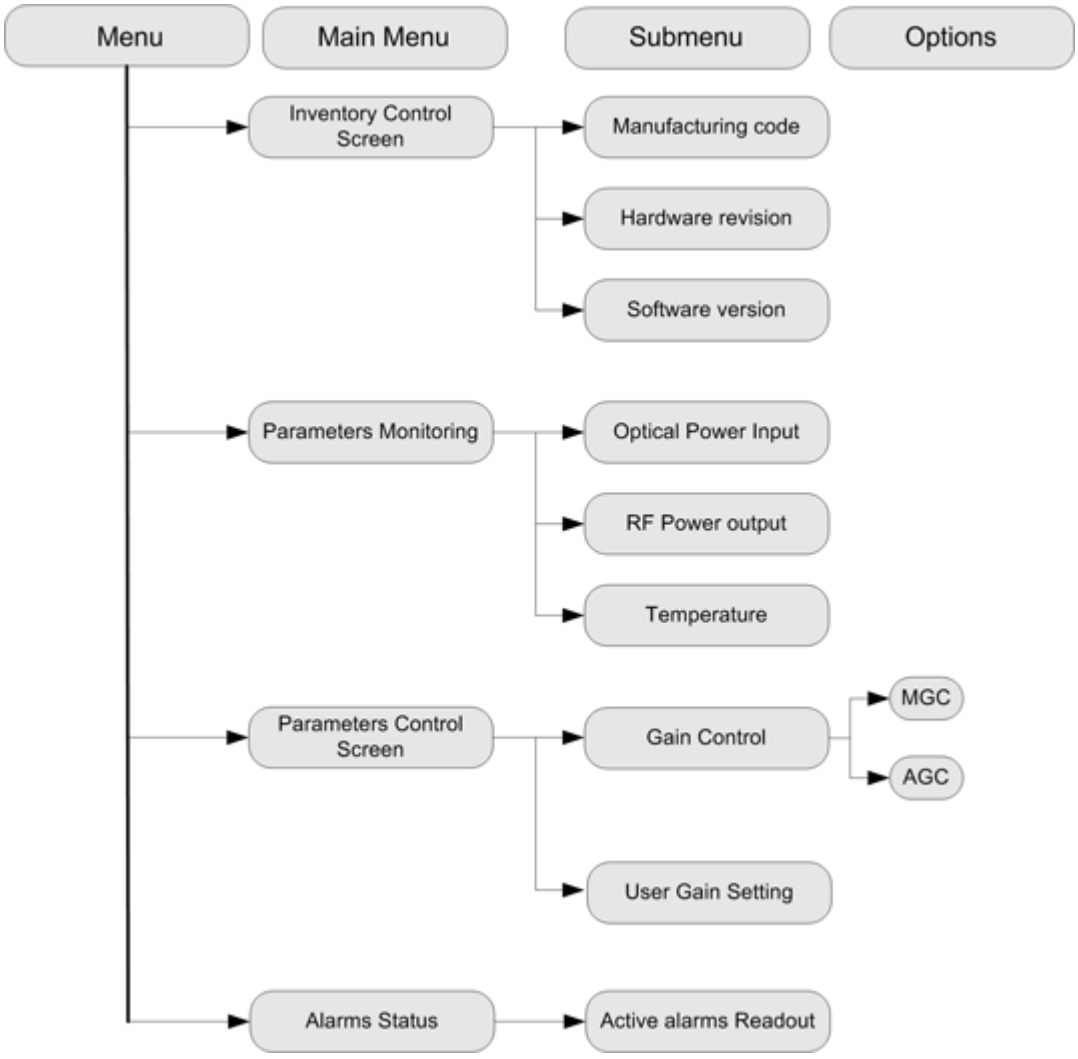


Figure 19 Amplifier Card Tree Menu

6.1.5 1:1 RF Switch Card Menu Tree

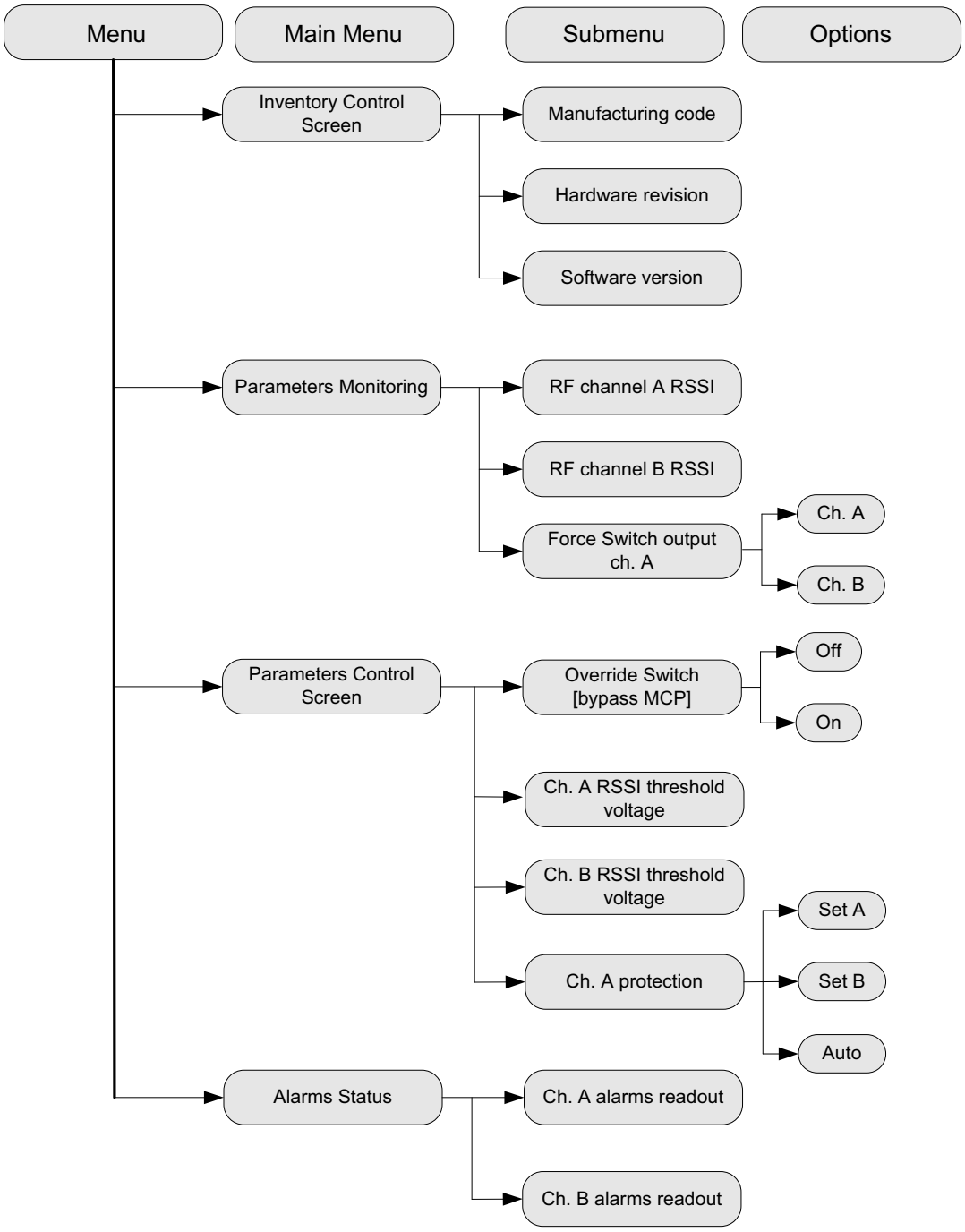


Figure 20 1:1 RF Switch Card Menu Tree

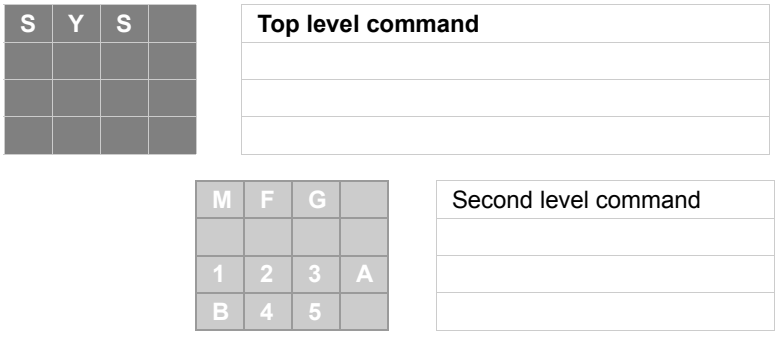
6.2 LCD Commands Description

6.2.1 LCD Control Buttons

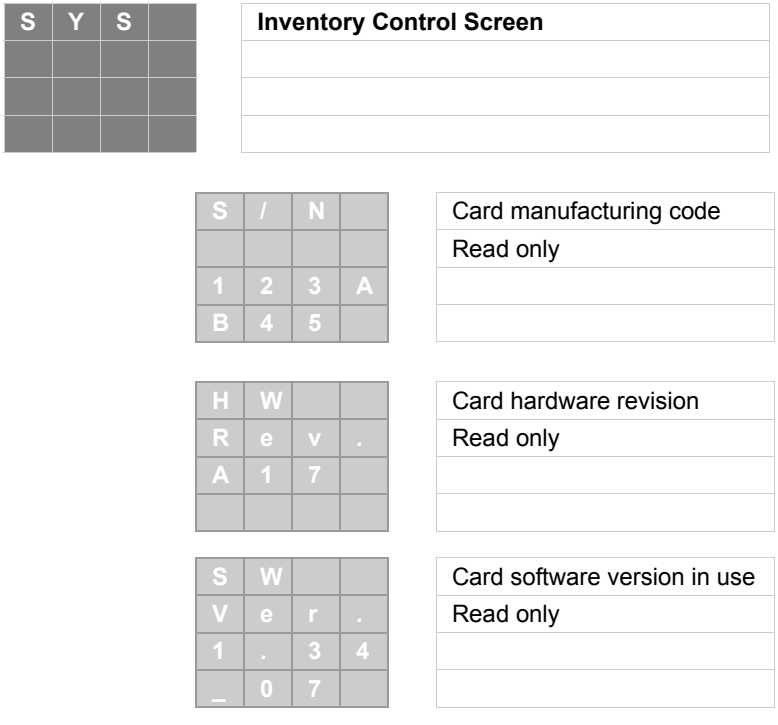
Buttons	Command
Up	Moves up the command list
Down	Moves down the command list
Enter	Selects a command
Back	One step back up the command hierarchy

Table 28 LCD Control Buttons

Key



6.2.2 L-Band, Wide Band and IF Transmitter Cards



M	O	N	

Card Parameters Monitoring Screen

P	i	n	
R	F		
–	1	7	
d	B	m	

RF power input measurement in dBm

Read only

P	o	u	t
O	p	t	
+	2		
d	B	m	

Laser optical power output measurement [PDI]

Read only

T	e	m	p
T	e	m	p
4	2	C	

Temperature measurement on the RF card

Read only

C	T	L	

Card Parameters Control Screen

L	N	B	
P	w	r	
O	N		

Card LNB power enable/disable **[L-band only]**
Read-Write
Positions: On, Off

L	N	B	
V	o	l	t
+	1	3	V

Card LNB voltage output selection **[L-band only]**
Read-Write
Options: 13V, 18V

G	a	i	n
M	o	d	e
A	G	C	

Card gain control selection
Read-Write
Options: MGC, AGC

I	M	D	
S	e	t	
–	4	2	
d	B	c	

IMD [Inter Modulation] parameter user selection
Read-Write
Range: -40 to -55 dBc
Steps: 1dB

P	i	n	
S	e	t	
-	1	7	
d	B	c	

Pin user selection
Read-Write

A	L	M	

Card Alarms Status

A	L	M	
N	o	n	e

Card active alarms display
Read only
Read out - see **Table 29**

Readout	Over-Temperature Alarm	RF Alarm	Optical Alarm
None			
Temp.	*		
RF		*	
Opt.			*1
TR	*	*	
TO	*		*1
TRO	*	*	*1
RO		*	*1

Table 29 L-Band, Wide Band and IF Transmitter Cards Alarm Readout

1. Optical alarms indicating laser failure. This cannot be simulated.

6.2.3 10 MHz Transmitter Card

S	Y	S	

Inventory Control Screen

S	/	N	
1	2	3	A
B	4	5	

Card manufacturing code
Read only

H	W		
R	e	v	.
A	1	7	

Card hardware revision
Read only

S	W		
V	e	r	.
1	.	3	4
_	0	7	

Card software version in use
Read only

M	O	N	

Card Parameters Monitoring Screen

P	i	n	
R	F		
–	1	7	
d	B	m	

RF power input measurement in dBm
Read only

P	o	u	t
O	p	t	
+	2		
d	B	m	

Laser optical power output measurement [PDI]
Read only

R	F		
T	e	m	p
4	2	C	

Temperature measurement on the RF card
Read only

C	T	L	

Card Parameters Control Screen

G	a	i	n
M	o	d	e
A	G	C	

Card gain control selection
Read-Write
Options: MGC, AGC

A	L	M	

Card Alarms Status

A	L	M	
N	o	n	e

Card active alarms display
Read only
Read out - see **Table 30**

Readout	Over-Temperature Alarm	RF Alarm	Optical Alarm
None			
Temp.	*		
RF		*	
Opt.			*1
TR	*	*	
TO	*		*1
TRO	*	*	*1
RO		*	*1

Table 30 10 MHz Transmitter Card Alarm Readout

1. Optical alarms indicating laser failure. This cannot be simulated.

6.2.4 Receiver Card

S	Y	S	

Inventory Control Screen

S	/	N	
1	2	3	A
B	4	5	

Card manufacturing code
Read only

H	W		
R	e	v	.
A	1	7	

Card hardware revision
Read only

S	W		
V	e	r	.
1	.	3	4
_	0	7	

Card software version in use
Read only

M	O	N	

Card Parameters Monitoring Screen

P	i	n	
O	p	t	
–	1	7	
d	B	m	

Optical power in measurement
Read only

P	o	u	t
R	F		
+	2		
d	B	m	

RF power out measurement
Read only

T	e	m	p
4	2	C	

Temperature measurement on the RF card
Read only

C	T	L	

Card Parameters Control Screen

G	a	i	n
M	o	d	e
A	G	C	

Card gain control selection
Read-Write
Options: MGC, AGC

P	o	u	t
s	e	t	
–	8		
d	B	m	

RF power out selection
Read-Write
L-band: HP -30 to -5 dBm
LP -55 to -25 dBm
5/10 MHz: -30 to 0 dBm
Step:1 dB

A	L	M	

Card Alarms Status

A	L	M	
N	o	n	e

Card active alarms display
Read only
Read out - see **Table 31**

Readout	Over-Temperature Alarm	RF Alarm	Optical Alarm
None			
Temp.	*		
RF		*	
Opt.			*
TR	*	*	
TO	*		*
TRO	*	*	*
RO		*	*

Table 31 Receiver Card Alarm Readout

6.2.5 Amplifier Card

S	Y	S	

Inventory Control Screen

S	/	N	
1	2	3	A
B	4	5	

Card manufacturing code
Read only

H	W		
R	e	v	.
A	1	7	

Card hardware revision
Read only

S	W		
V	e	r	.
1	.	3	4
_	0	7	

Card software version in use
Read only

M	O	N	

Card Parameters Monitoring Screen

P	i	n	
R	F		
–	2	1	
d	B	m	

RF power input measurement in dBm
Read only

P	o	u	t
R	F		
+	2		
d	B	m	

RF power output measurement
Read only

T	e	m	p
4	2	C	

Temperature measurement
Read only

C	T	L	

Card Parameters Control Screen

G	a	i	n
M	o	d	e
A	G	C	

Card gain control selection
Read-Write
Options: MGC, AGC

G	a	i	n
S	e	t	
+	2	0	
d	B		

User gain setting
Read-Write

A	L	M	

Card Alarms Status

A	L	M	
N	o	n	e

Card active alarms display
Read only
Read out - see **Table 32**

Readout	Over-Temperature Alarm	RF Alarm
None		
Temp.	*	
RF		*
TR	*	*

Table 32 Amplifier Card Alarm Readout

6.2.6 1:1 RF Protection Switch Card

S	Y	S	

Inventory Control Screen

S	/	N	
1	2	3	A
B	4	5	

Card manufacturing code
Read only

H	W		
R	e	v	.
A	1	7	

Card hardware revision
Read only

S	W		
V	e	r	.
1	.	3	4
_	0	7	

Card software version in use
Read only

M O N	**Card Parameters Monitoring Screen**

R S S I A 1 . 1 8 V D C	RF channel A [Main] RSSI measurement Read only

R S S I P 1 . 4 2 V	RF channel B [Protect/backup] RSSI measurement Read only

A o u t P o s A i n	Force switch output Ch. A Read only Options: Ch. A, Ch. B Displays the current switch channel

C T L	**Card Parameters Control Screen**

O v e r r i d e O f f	Override Switch setting [bypass MCP] Read-Write Options: Off, On

T h r s A 3 . 2 7 3 . 1 8	RSSI Threshold voltage setting for ch. A Read-write ← This line shows the actual measured value ← This line shows user modified value

T h r s P 3 . 2 7 3 . 1 8	RSSI Threshold voltage setting for ch.B Read-write ← This line shows the actual measured value ← This line shows user modified value

A o u t M o d e S e t A	Channel A protection mode Read-Write Options: SetA, SetB, Auto

A	L	M	

Card Alarms Status

A	L	M	
A			
N	o	n	e

Channel A alarm
Read only
Read out - see **Table 33**

A	L	M	
P			
A	l	m	

Channel B alarm
Read only
Read out - see **Table 33**

Readout	Over-Temperature Alarm	RF Alarm
None		
Opt.	*	
RF		*
RO	*	*

Table 33 1:1 RF Switch Card Alarm Readout

Chapter 7 Principles of Operation

7.1 Transmitter Card

7.1.1 Transmitter: Control and Alarms Description

Function	Signal Name & Description	Gen	ALM
RF Monitor			
	Laser Output Power (PDI)	*	
	RF Input	*	
	LNB DC (18V,13V) Power	*	
	-6.5V, 8.5V, 3.3V		
	LNB short circuit (on uP board)		*
	Ambient Temp Sense	*	
	Laser Temp Sense		
Alarms			
	Laser RF Drive exceeds limits		*
	Laser Bias current exceeds limits		*
	Laser Temperature too high		*
	Laser Heater cannot raise Laser Temperature (Heater failure)		*
	No RF Input Power or below specifications		*
	RF Power does not change		*
	Voltages fail alarm (on uP board)		*
	RF card temp too high (card Ambient temperature)		*
General Ctl			
	AGC/MGC mode	*	
	LNB Power (18V DC) Control (On/Off) (on uP board)	*	
Calculated			
	AGC/MGC parameters	*	
	IMD	*	
	RF Laser drive Gain	*	
	RF Laser threshold	*	
	RF input Power Gain	*	
	RF input power Threshold	*	
	OMI	*	

Table 34 Transmitter: Control and Alarm Description

7.1.2 Transmitter: RF Parameter Monitoring and Control

RF monitoring and control during normal operations:

Testing Phase	Parameter	Action	Activities
Normal Operation			
	Transmitter laser temperature	Check and Adjust	
	Transmitter input power	Read and display	
	Transmitter RF laser drive	Read and display	RF Drive calculation: Gain (Output minus Input) – DVA Attenuation) Display result (vs. Production setting) Prompt User for Automatic correction confirmation
	Transmitter IMD	Set	Acquire User defined target value Change defined DVA Switch values between other DVAs
	Transmitter optical output power	Read and display, Set	Maintain balance between Output Power and Temperature (see Algorithm). Set Temperature first, adjust for Output power and then set and record new temperature if necessary Change Laser Bias Current Prompt User for Loop Start. Report progress
	Transmitter MGC/AGC	Set	Prompt for Selection between the 2 modes MGC - Select Threshold MGC - Alert User for threshold crossing MGC - Gain Control AGC - Status Display

Table 35 Transmitter: RF Parameter Monitoring and Control During Normal Operation

7.2 Receiver Card

7.2.1 Receiver Control and Alarms Description

Function	Signal Name & Description	Gen	ALM
RF Monitor			
	RF Output Power	*	
	Optical Input sensitivity #2	*	
	RF first stage #3		*
Alarms			
	No Optical Power		*
	No RF Output		*
	RF Power does not change		*
RF Control			
	RF Output Gain #1	*	
	RF Output Gain #2	*	
Calculated			
	RF Alarm Threshold	*	
	RF output power dynamic range	*	
	Optical Threshold	*	

Table 36 Receiver Control and Alarms Description

7.2.2 Receiver RF Parameter Monitoring and Control

RF monitoring and control during normal operations:

Testing Phase	Parameter	Action	Activities
Normal Operation			
	Receiver optical input	Read and display	
	RF output power	Read and display	
	RF input power	Read and display	Internal function. Cost Option
	Gain control	Set	
	Receiver MGC/AGC	Set	Prompt for Selection between the 2 modes MGC Select Threshold MGC Alert User for threshold passing MGC Gain Control AGC status Display

Table 37 Receiver RF Monitoring And Control During Normal Operation

7.3 1:1 Protection RF Switch Card

7.3.1 1:1 RF Switch System View

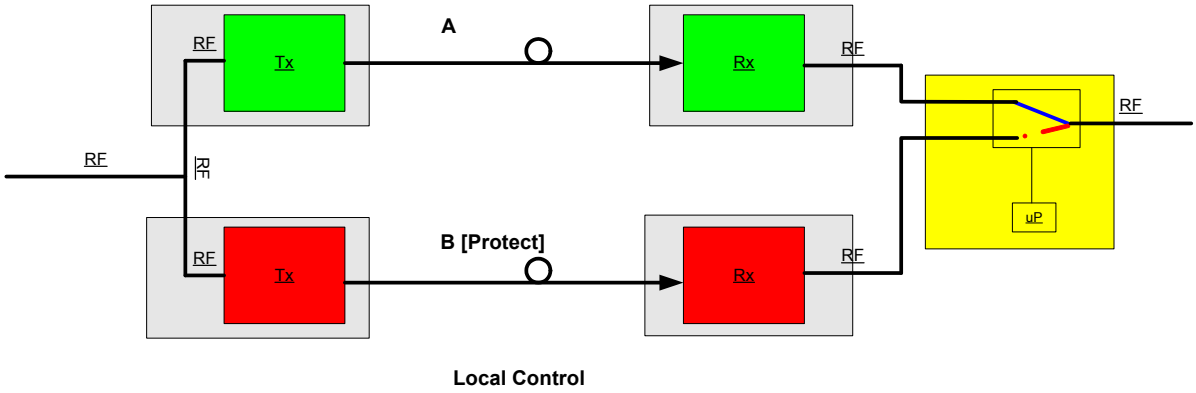


Figure 21 1:1 RF Switch System View

7.3.2 1:1 RF Switch Card

7.3.2.1 Control and Alarms Description

	Signal Name	Signal Description	Gen	ALM
Switch Control	Auto/Manual	S/W controlled & LCD activation	*	
	Main/Protect	S/W controlled & LCD activation	*	
	Override/Remote	S/W controlled & LCD activation	Lcl	
Monitor. Func.				
	Auto/Man	Automatic or Forced Switch to M or P Effective if	*	
	Main/Protect	Main or Protect channel assignment. Effective if	*	
	Override/Normal	Overrides uP control	*	
	Optical Alarms	From Main and Protect receiver cards	*	
	RF Alarms	On Board detection	*	

Table 38 1:1 RF Switch Card: Control and Alarms Description

7.3.2.2 Functional Switch Truth Table

Override/Normal	Auto/Man	Main/Protect	Function
Override	Auto	-	Automatic switching
Override	Man	Main	Forced switching to main
Override	Man	Protect	Forced switching to protect
Normal	-	-	No effect

Table 39 1:1 RF Switch Card: Functional Switching Table

7.4 RF Amplifier Card

Function	Signal Name & Description	Gen	ALM
RF Monitor			
	RF output power	*	
	RF input power	*	
Alarms			
	RF output power not within specifications		*
	RF input power not within specifications		*
RF Control			
	RF output gain #1	*	
	RF output gain #2	*	

Table 40 RF Amplifier Card

7.5 Main Controller Processor Card [MCP]

7.5.1 MCP Card: Control and Alarms Description

All uP access to peripherals and discrete lines are memory mapped.

	Signal Name	Signal Description	Authorization
Monitored signals			
	Temp Sense	Temp Sensor input	General

Table 41 MCP Card: Control and Alarms Description

7.6 Power Supply Card

7.6.1 Main Power Supply Specifications

In order to support a total 165W Power consumption maximum, a 300W power supply card is used providing an ample design safety margin.

Protection and other functionality

- Current limit on power supply
- Hot Swap
- The MTBF is calculated at 300,000 hours (Belcore Standard), at 25ºC.
- LNB Powering of +18V or 13V
- Input voltage 85 to 260 VAC
- No fan needed for normal applications (including LNB). A fan is needed only with CWDM/DWDM Butterfly Laser cards
- Temperature –40º to +70ºC (without de-rating)
- FCC class B part 15 compliance
- Lightning protection
- Surge protection
- In Rush current control

7.6.2 Power Supply Card: Control and Alarms Description

	Signal Name	Signal Description	Authorization
Monitored signals			
	Temp Sense	Temp Sensor input	General
	AC Fail	AC Signal Fail, from PS	General
	DC Fail	12V DC Signal Fail (from PS)	General
	Fan Failure		General

Table 42 Power Supply Card: Control and Alarms

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8 Updating the Software

Overview

All *Sat-Light/Platinum* cards are delivered from the factory with the software required to monitor and control the *Platinum Suite*. Once the equipment is installed and the MCP unit configured you can start operating.

Periodically we will be updating the software. To download these files you must have access to an FTP server.

Note:

a. Each card type [MCP, transmitters, receivers, amplifier, RF protection switch and the power supply] has its own unique software. The software must be downloaded only once per card type.

b. The optical and RF Splitters are passive and therefore do not have any software and do not appear on the *Sat-Light/Platinum* GUI. They appear as blanks on the GUI.

8.1 Downloading the Software

To update the the *Sat-Light/Platinum* software:

1. Run your FTP application in the background.
2. Set the path to where image files are located.
3. Run the *Sat-Light/Platinum* software to display a graphical representation of the *Sat-Light/Platinum* cards residing in the chassis.

Figure 22 The Sat-Light/Platinum GUI

4. Click **SatLight > Software Update** from the task bar, to display the **Software Update Window**.

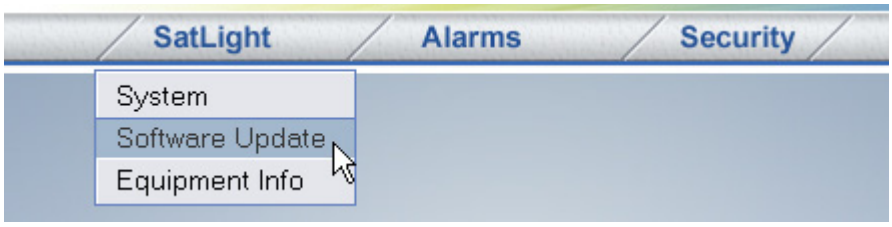


Figure 23 Software update drop down menu

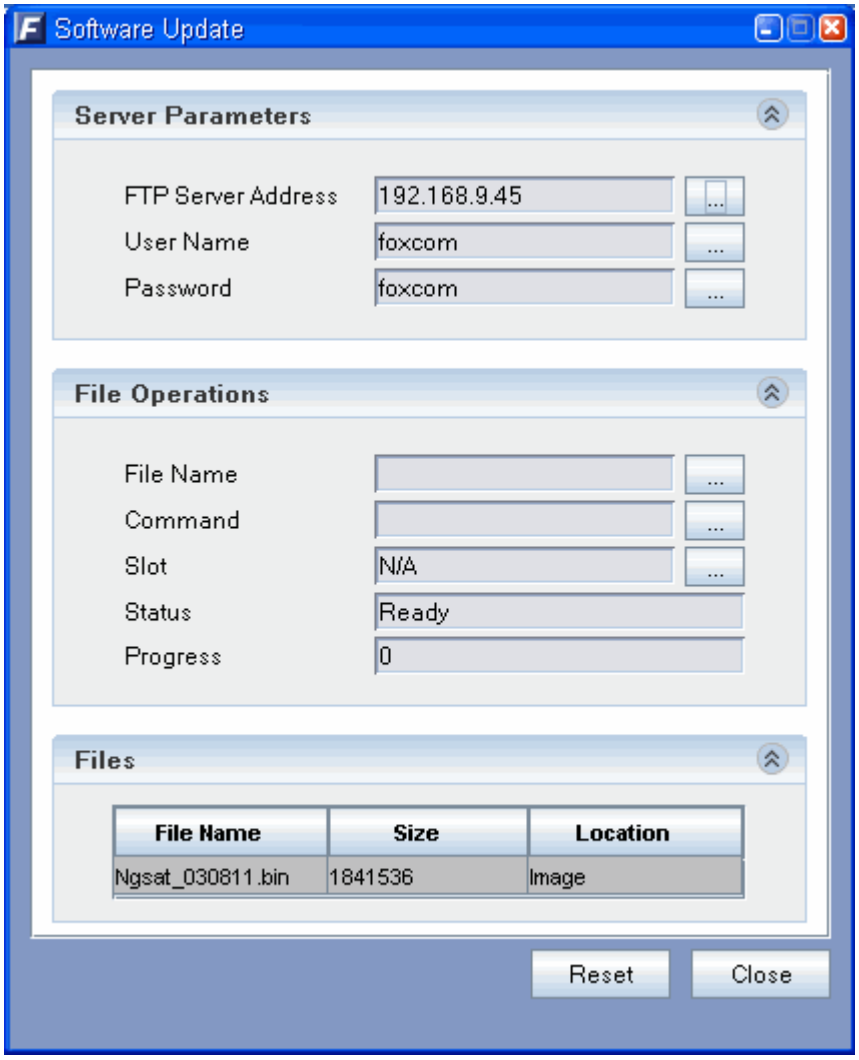


Figure 24 Software Update Window

Note: Under **Server Parameters** check that:

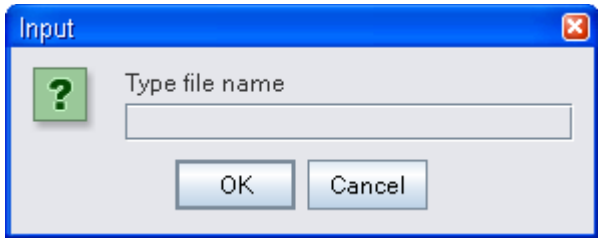
a. The **FTP Server Address** is as defined in your FTP application.

b. The **User Name** and **Password** are as defined in the MCP configuration setup.

c. The first time you run the **Software Update Window**, the **File Name** and **Command** text fields are blank. When you update the file again, the *Sat-Light/Platinum* software remembers the last file name downloaded and the command given.

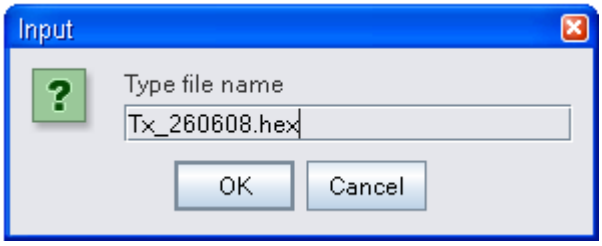
5. Under **File Operations**:

a. Click the **File Name** ellipsis button. An **Input** dialog box opens.



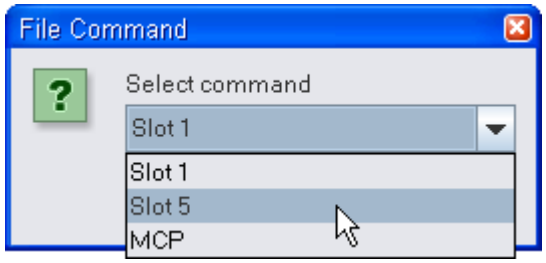
b. Type the file name *exactly* as it appears in your download directory.

The Sat-Light/Platinum software is case-sensitive.



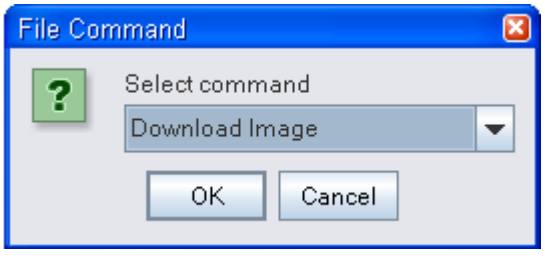
c. Click **OK**.

d. Click the **Slot** ellipsis button, open the drop down menu and select the slot where your card is located. For example if your card is in Slot 5, select **Slot 5**.



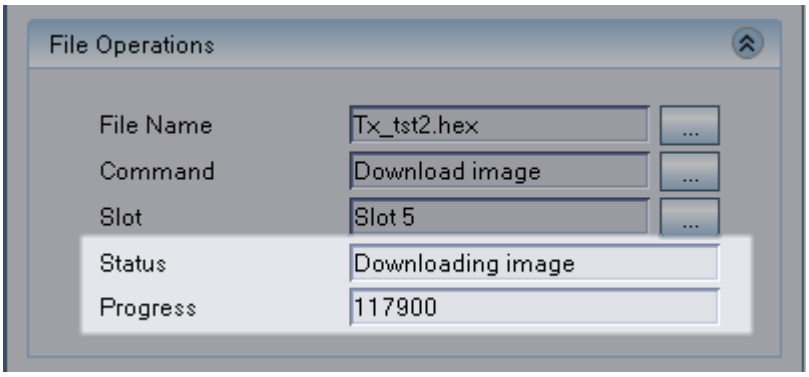
Note: Only the populated slots are displayed.

e. Click the **Command** ellipsis button. A **File Command** dialog box opens.

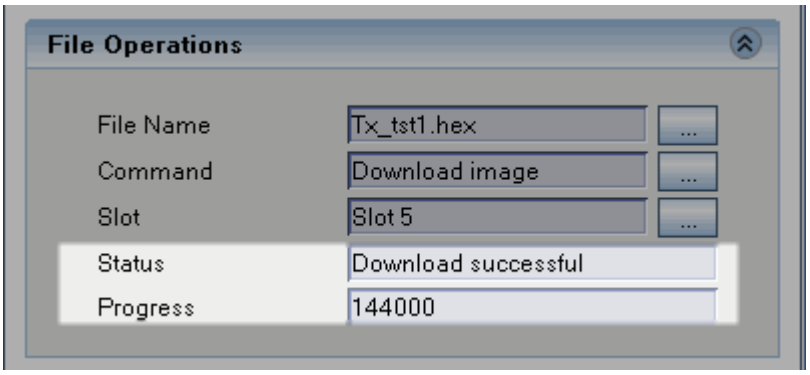


f. Check that **Download Image** is displayed and click **OK**.

g. After a few seconds delay the file starts downloading.



See the **Status** and **Progress** text fields to check that the file is downloading. When the file finishes downloading, the **Status** changes to **Download successful**.

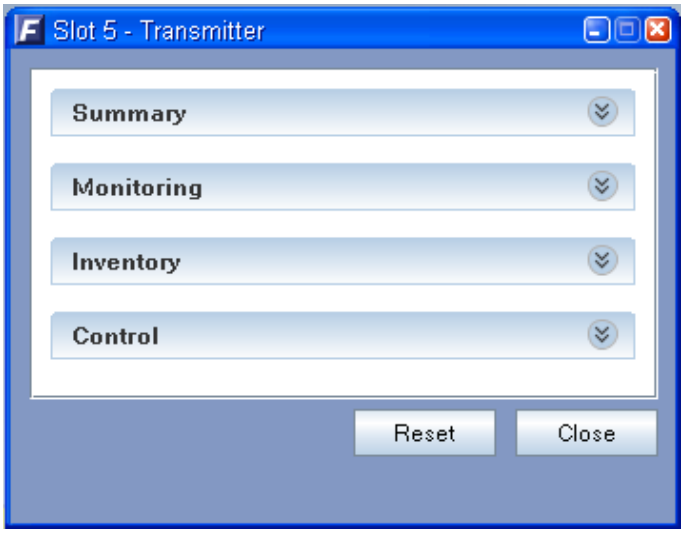


6. Click **Close** to close the **Software Update** window.

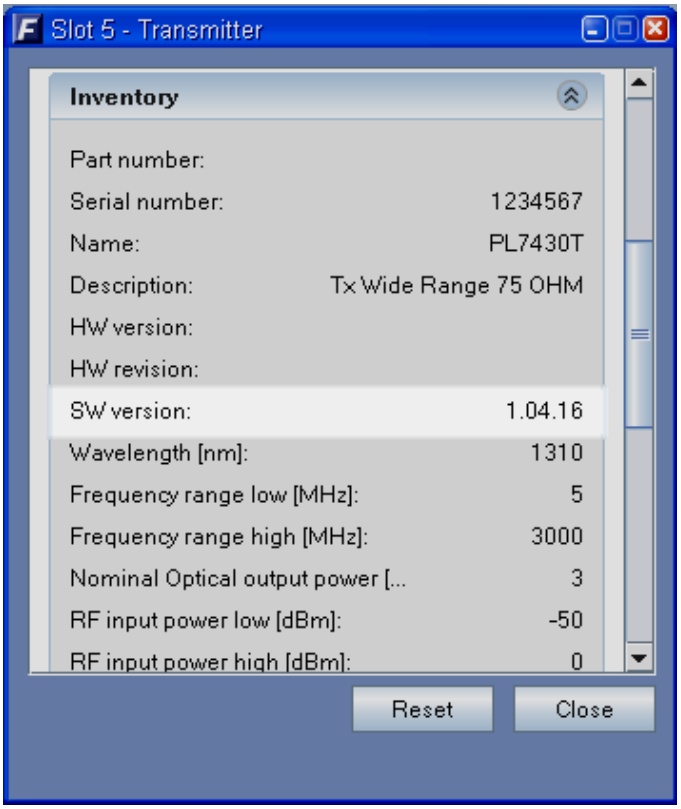
8.1.1 Checking the Software Version

To check the current software version or that the software download was successful:

1. On the *Sat-Light/Platinum* GUI, click the card panel for which you want to check the software version. A card report window opens displaying **Summary**, **Monitoring**, **Inventory** and **Control** Information.



2. Click the **Inventory** bar to display an inventory of all the card's components.



The **SW version** is displayed. Scroll down if the SW version is not in view.

Chapter 9 Troubleshooting

The *The SatLight/Platinum Suite* unit is tested before it leaves the factory. However if you have difficulties see the list below for possible solutions. If you still have problems, attempt to isolate and identify the malfunctioning unit before consulting Foxcom's technical support.

9.1 Troubleshooting the Transmitter

Using Local Card display functionality

Problem	Troubleshooting Action	Status/Fault Description
Transmitter Alarm LED is RED RF Alarm is RED	Press **UP/DOWN** button until you reach **ALM** screen. View **ALM** status	**ALM** screen reads **RF** or **RO** or **RT** or **ROT** or **TO** or **Optical** or **TEMP**
	Press **UP/DOWN** button on Transmitter front panel until you reach **MON** screen. Press **ENTER** Press **UP/DOWN** button to reach **Pin** screen.	RF Input level is out of range, either high or low.
	IF **Pin** reads **LOW**	Check RF input signal level to Transmitter card using a spectrum analyzer.
	IF RF input level to Transmitter is below the minimum Transmitter RF input level as stated in the specifications of the card	Correct input levels and recheck Transmitter RF alarm LED.
	RF input Level to transmitter OK	RF Alarm LED is **GREEN**
	IF RF input signal level to Transmitter card is within Transmitter input range and RF alarm LED is still **RED**	Replace Transmitter Card
	IF **Pin** reads **HIGH**	Check RF input signal level to Transmitter card using a spectrum analyzer.
	IF RF input level to Transmitter is above the maximum Transmitter RF input level as stated in the specifications of the card	Correct input levels and recheck Transmitter RF alarm LED.
	RF input Level to Transmitter OK	RF Alarm LED is **GREEN**
	IF RF input signal level to Transmitter card is within Transmitter input range and RF alarm LED is still **RED**	Replace Transmitter Card

Transmitter Alarm is RED	Press **UP/DOWN** button until you reach **ALM** screen. View **ALM** status	**ALM** screen reads **OPT**
	ALM screen reads **OPT**	Replace Transmitter Card
Transmitter Alarm is RED	Press **UP/DOWN** button until you reach **ALM** screen. View **ALM** status	**ALM** screen reads **TEMP**
	Check ambient temperature around the chassis	If ambient temperature around the chassis is within specified requirements, replace Transmitter card.
Transmitter PWR LED is OFF	Verify that the other cards plugged into chassis are working. Verify that the power supply is ON and working. Verify that the Transmitter card is fully inserted into the slot.	If other cards are working and/or the power supply is ON and working and the Transmitter **PWR** LED remains OFF; remove Transmitter card and insert to a different slot.
	IF **PWR** LED turns on **GREEN**	Replace chassis
	IF **PWR** LED remains **OFF**	Replace Transmitter Card
Note: Combination of failures will be indicated on the ALM screen (example RO=RF and Optical alarm, RT= RF and TEMP alarm, etc.). Use the above troubleshooting tables to diagnose the correct failure.		

9.2 Troubleshooting Receiver Cards

Receiver Alarm LED is RED	Press **UP/DOWN** button until you reach **ALM** screen. View **ALM** status	**ALM** screen reads **RF** or **RO** or **RT** or **ROT** or **TO** or **Optical** or **TEMP**
	If ALM screen reads **OPTICS**	
	Press **UP/DOWN** button on Receiver front panel until you reach **MON** screen. Press **ENTER** Press **UP/DOWN** button to reach **PinOpt** screen.	Optical Input level is out of range, either high or low.
	IF **PinOpt** reads **LOW**	Check Optical input signal level to Receiver card using an optical power meter.
	IF optical input level to Receiver is below the minimum Receiver optical input level as stated in the specifications of the card	Check fiber optical fiber cable for any physical damages, broken splices, dirty bulkhead connectors etc. Repair optical cable, or clean the dirty bulkheads and verify correct optical input levels and re-check Receiver alarm LED.
	Optical input Level to Receiver OK	Alarm LED is **GREEN**

	IF Optical input signal level to Receiver card is within Receiver optical input range and alarm LED is still **RED**	Replace Receiver Card
	IF **PinOpt** reads **HIGH**	Check Optical input signal level to Receiver card using an optical power meter.
	IF Optical input level to Receiver is above the maximum Receiver optical input level as stated in the specifications of the card	Correct input levels and recheck Receiver alarm LED.
	Optical input Level to Receiver OK	Alarm LED is **GREEN**
	IF optical input signal level to Receiver card is within Receiver optical input range and alarm LED is still **RED**	Replace Receiver Card
	IF alarm screen shows **RF**	
	Press **UP/DOWN** button on Receiver front panel until you reach **MON** screen. Press **ENTER** Press **UP/DOWN** button to reach **PoutRF** screen.	RF Input level is out of range, either high or low.
	RF Output power is **HIGH**	
	Press BACK button. Press **UP/DOWN** button until you reach **CTL** screen. Press **ENTER** Press UP/DOWN until you reach **PoutUser**.	Lower **PoutUser** in 1dB steps until alarm LED turns **GREEN**
	Press BACK button. Press **UP/DOWN** button until you reach **MON** screen. Press **ENTER** Press UP/DOWN until you reach **PoutRF**	Verify that your RF output level meets your link requirements and your system performance has not degraded.
	IF the link performance is degraded after alarm LED turns **GREEN**	Replace Card
Receiver Alarm is RED	Press **UP/DOWN** button until you reach **ALM** screen. View **ALM** status	**ALM** screen reads **TEMP**
	Check ambient temperature around the chassis	If ambient temperature around the chassis is within specified requirements, replace Receiver card.
Note: Combination of failures will be indicated on the ALM screen (example RO=RF and Optical alarm, RT= RF and TEMP alarm, etc.). Use the above troubleshooting tables to isolate the correct failure.		

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Appendix A: Current LCD Display and Navigation

The LCD screens described in this Appendix are applicable for the **current** firmware version.

Check with your Foxcom agent for the latest firmware updates.

Appendix A.1 LCD Menu Trees

An LCD display and four navigation buttons exist on each of the transmitter, receiver, RF amplifier and RF switch cards. **Figures 25 - 29** illustrate the menu tree for each family of cards.

A.1.1 L-Band, Wide Band and IF Transmitter Menu Tree

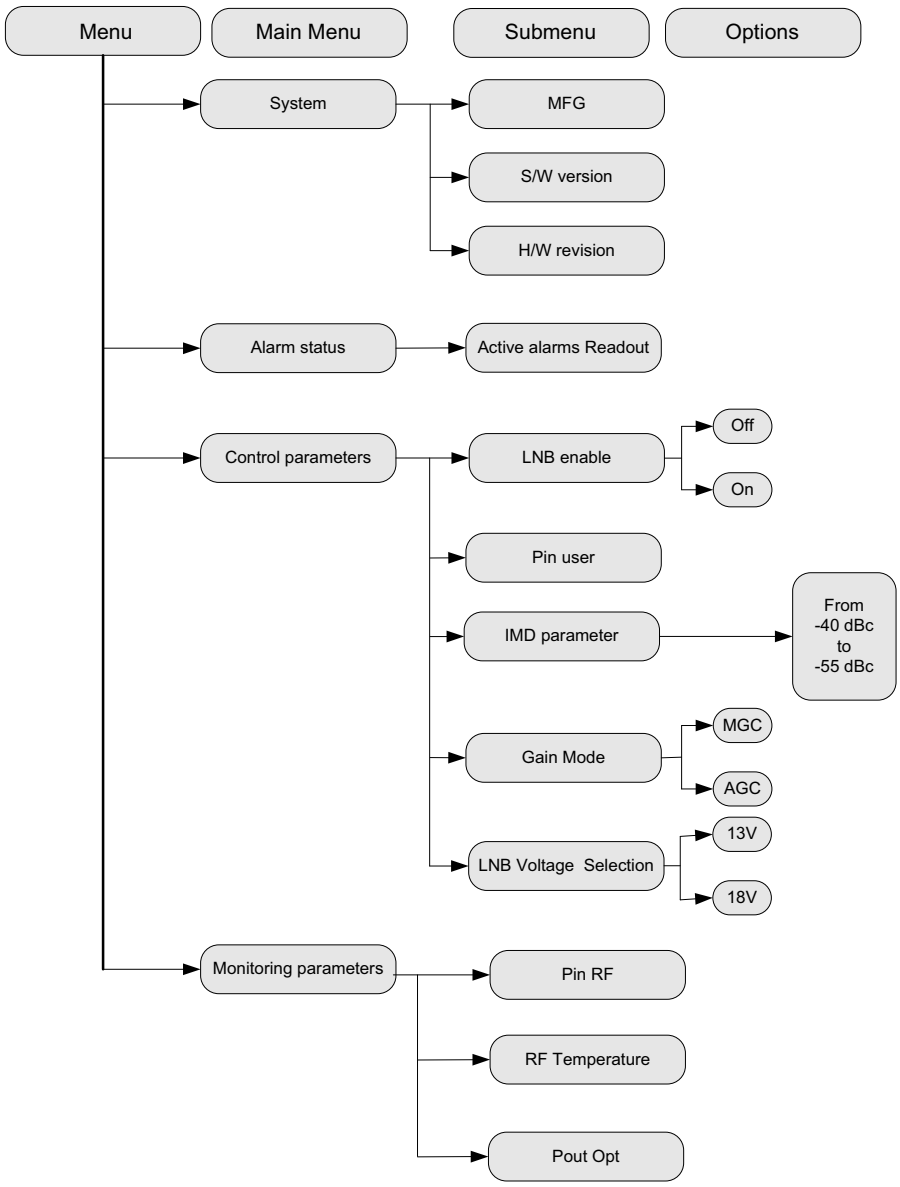

Figure 25 L-Band, Wide Band and IF Transmitter Menu Tree

Note: LNB voltage is only available on L-band.

A.1.2 10MHz Transmitter Card Menu Tree

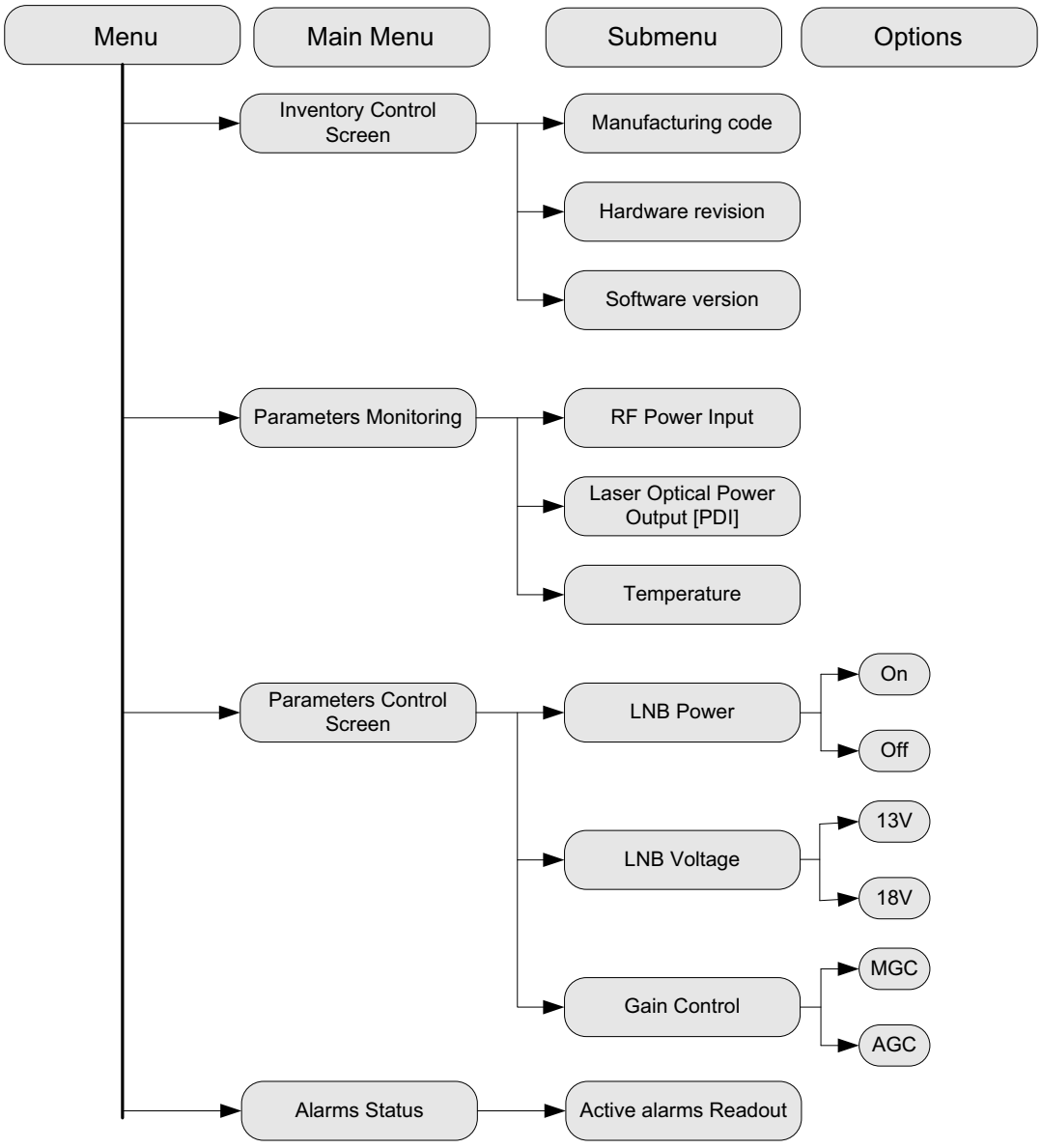

Figure 26 10 MHz Transmitter Menu Tree

Note: LNB power and voltage are not available

A.1.3 Receiver Card Menu Tree

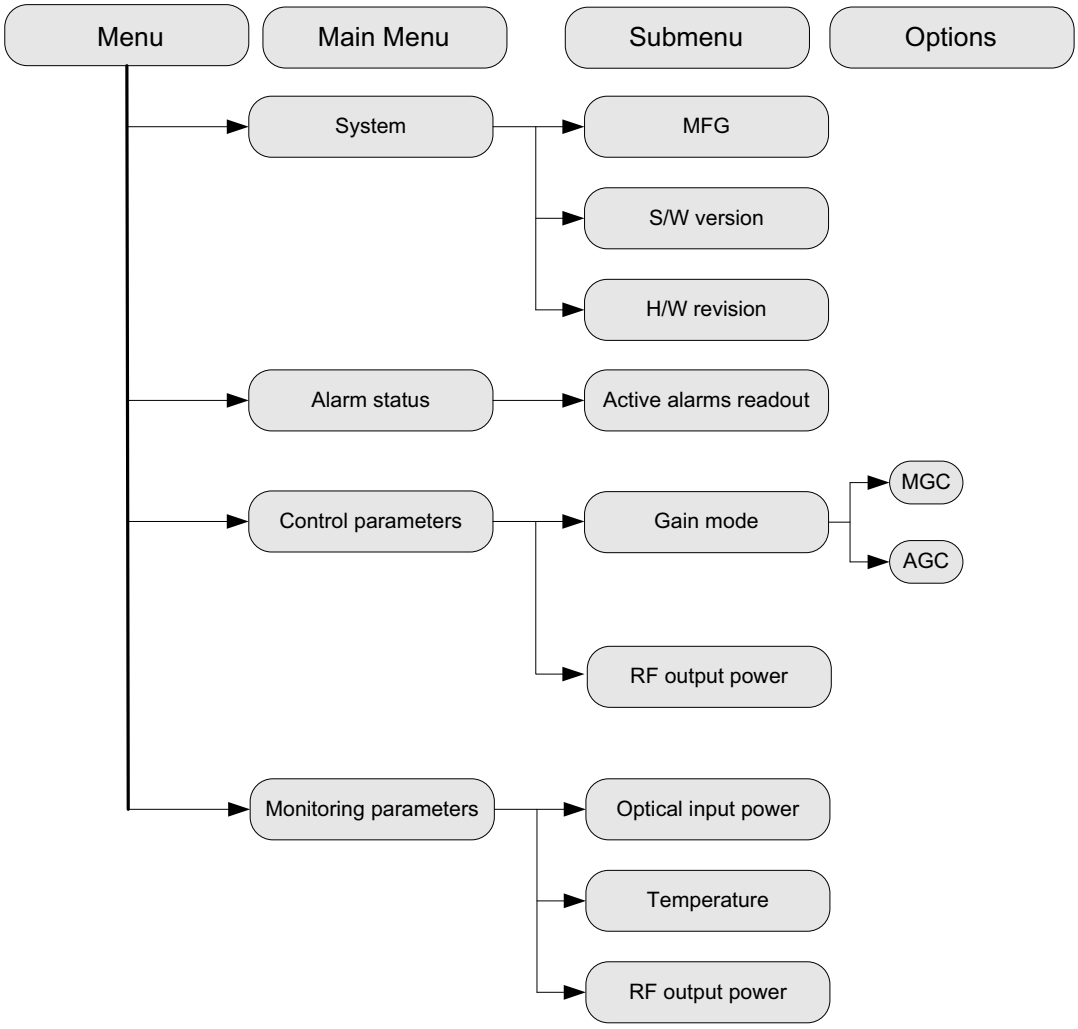

Figure 27 Receiver Card Menu Tree

A.1.4 Amplifier Card Menu Tree

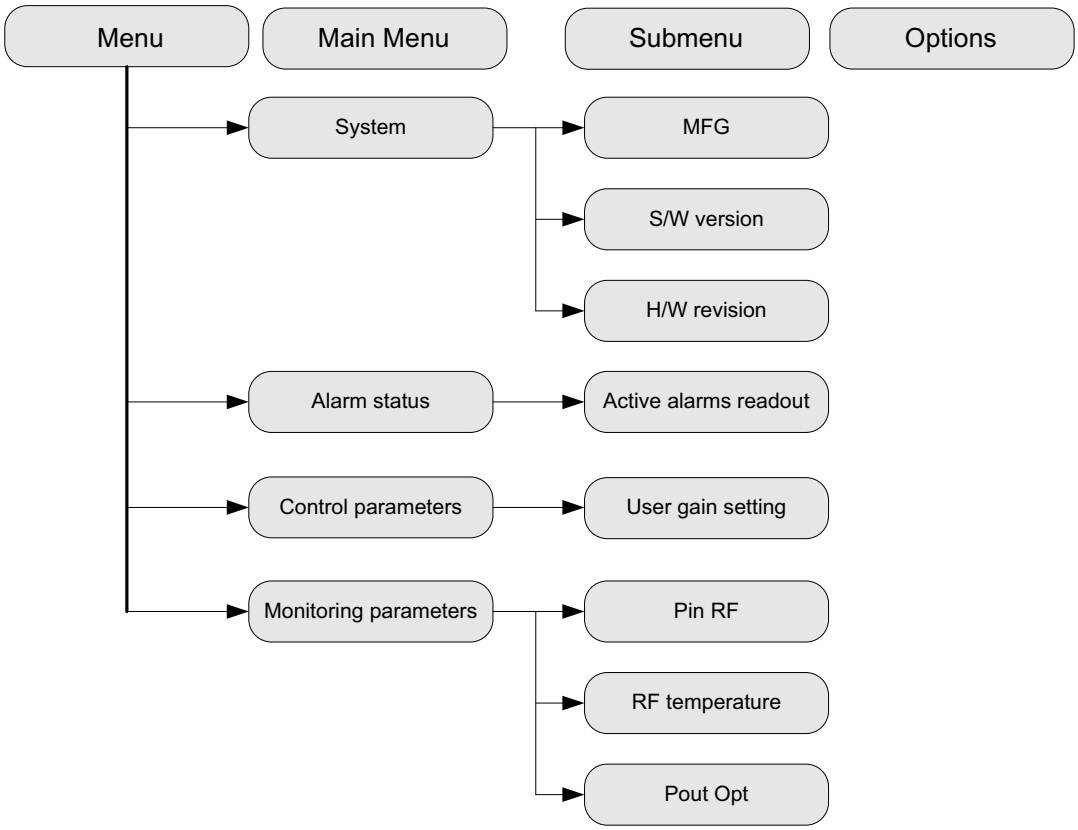

Figure 28 Amplifier Card Tree Menu

A.1.5 1:1 RF Switch Card Menu Tree

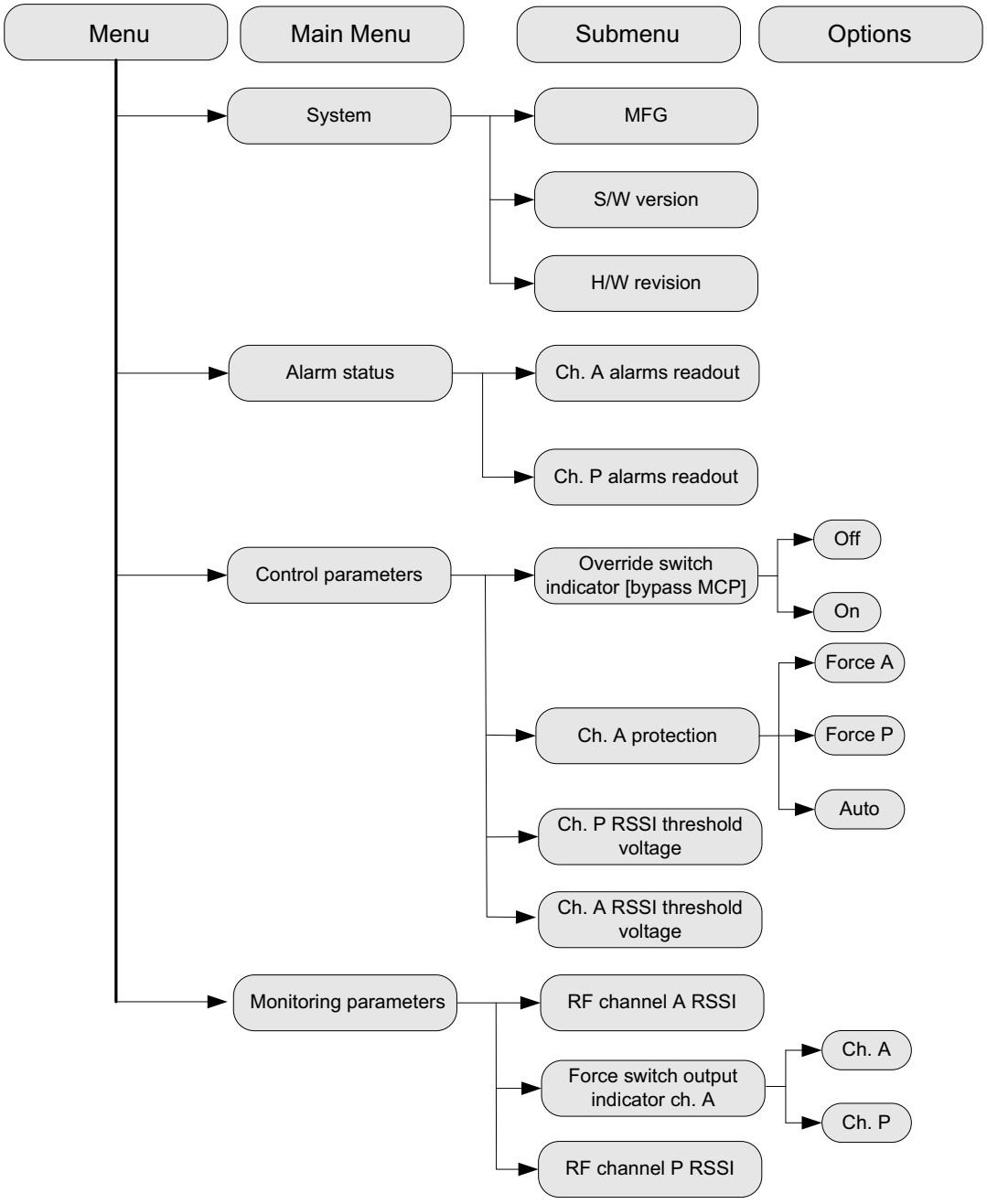

Figure 29 1:1 RF Switch Card Menu Tree

Appendix A.2 LCD Commands Description

A.2.1 LCD Control Buttons

Buttons	Command
Up	Moves up the command list
Down	Moves down the command list
Enter	Selects a command
Back	One step back up the command hierarchy

Table 43 LCD Control Buttons

Key

S	Y	S	

Top level command

M	F	G	
1	2	3	A
B	4	5	

Second level command

A.2.2 L-Band, Wide Band and IF Transmitter Cards

S	Y	S	

System

M	F	G	
1	2	3	A
B	4	5	

Card manufacturing code
Read only

S	W		
V	e	r	.
1	.	0	4
.	1	6	

Card software version
Read only

H	W		
R	e	v	.
A	1	7	

Card hardware revision
Read only

A	L	M	

Card Alarms Status

A	L	M	
N	o	n	e

Card active alarms display
Read only
Read out - see **Table 44**

Readout	Over-Temperature Alarm	RF Alarm	Optical Alarm
None			
Temp.	*		
RF		*	
Opt.			*
TR	*	*	
TO	*		*
TRO	*	*	*
RO		*	*

Table 44 L-Band, Wide Band and IF Transmitter Cards Alarm Readout

C	T	L	

Card Control Parameters Screen

L	N	B	
E	N	.	
O	N		

Card LNB power enable/disable
Read-Write
Positions: On, Off

P	I	N	
U	s	e	r
–	3	0	
d	B	m	

Pin user selection
Read-Write

I	M	D	
S	e	t	
–	4	2	
d	B	c	

IMD [Inter Modulation] parameter user selection
Read-Write
Range: -40 to -55 dBc
Steps: 1dB

G	a	i	n
M	o	d	e
A	G	C	

Card gain control selection
Read-Write
Options: MGC, AGC

L	N	B	
V	s	e	l
1	3	V	

Card LNB voltage output selection
Read-write
Options: 13V, 18V

M	O	N	

Card Parameters Monitoring Screen

P	i	n	
R	F		
–	1	7	
d	B	m	

RF power input measurement in dBm
Read only

R	F		
T	e	m	p
4	2		
d	C	e	l

Temperature measurement on the RF card
Read only

P	o	u	t
O	p	t	
2			
d	B	m	

Laser optical power output measurement [PDI]
Read only

A.2.3 10 MHz Transmitter Card

S	Y	S	

Inventory Control Screen

M	F	G	
1	2	3	A
B	4	5	

Card manufacturing code
Read only

S	W		
V	e	r	.
1	.	3	4
_	0	7	

Card software version
Read only

H	W		
R	e	v	.
A	1	7	

Card hardware revision
Read only

M	O	N	

Card Parameters Monitoring Screen

P	i	n	
R	F		
–	1	7	
d	B	m	

RF power input measurement in dBm
Read only

P	o	u	t
O	p	t	
+	2		
d	B	m	

Laser optical power output measurement [PDI]
Read only

R	F		
T	e	m	p
4	2	C	

Temperature measurement on the RF card
Read only

C	T	L	

Card Parameters Control Screen

L	N	B	
P	w	r	
O	N		

Card LNB power [Not available]
Read-Write
Positions: On, Off

L	N	B	
V	o	l	t
+	1	3	V

Card LNB voltage [Not available]
Read-Write
Options: 13V, 18V

G	a	i	n
M	o	d	e
A	G	C	

Card gain control selection
Read-Write
Options: MGC, AGC

A	L	M	

Card Alarms Status

A	L	M	
N	o	n	e

Card active alarms display
Read only
Read out - see **Table 45**

Readout	Over-Temperature Alarm	RF Alarm	Optical Alarm
None			
Temp.	*		
RF		*	
Opt.			*
TR	*	*	
TO	*		*
TRO	*	*	*
RO		*	*

Table 45 10 MHz Transmitter Card Alarm Readout

A.2.4 Receiver Card

S	Y	S	

System

M	F	G	
1	2	3	A
B	4	5	

Card manufacturing code
Read only

S	W		
V	e	r	.
1	.	3	4
_	0	7	

Card software version
Read only

H	W		
R	e	v	.
A	1	7	

Card hardware revision
Read only

A	L	M	

Card Alarms Status

A	L	M	
N	o	n	e

Card active alarms display
Read only
Read out - see **Table 46**

Readout	Over-Temperature Alarm	RF Alarm	Optical Alarm
None			
Temp.	*		
RF		*	
Opt.			*
TR	*	*	
TO	*		*
TRO	*	*	*
RO		*	*

Table 46 Receiver Card Alarm Readout

C	T	L	

Card Parameters Control Screen

G	a	i	n
M	o	d	e
A	G	C	

Card gain control selection
Read-Write
Options: MGC, AGC

P	o	u	t
U	s	e	r
–	8		
d	B	m	

RF Power Out Selection
Read-Write
L-band: HP -30 to -5 dBm LP -55 to -25 dBm **5/10 MHz**: -30 to 0 dBm
Step:1 dB

M	O	N	

Card Monitoring Parameters

P	i	n	
O	p	t	
-	1	7	
d	B	m	

Optical power in measurement
Read only

T	e	m	p
4	2		
d	C	e	l

Temperature measurement on the RF card
Read only

P	o	u	t
R	F		
2			
d	B	m	

RF power out measurement
Read only

A.2.5 Amplifier Card

S	Y	S	

System

¶f

M	F	G	
1	2	3	A
B	4	5	

Card manufacturing code
Read only

S	W		
V	e	r	.
1	.	3	4
_	0	7	

Card software version
Read only

H	W		
R	e	v	.
A	1	7	

Card hardware revision
Read only

A	L	M	

Card Alarms Status

A	L	M	
N	o	n	e

Card active alarms display
Read only
Read out - see **Table 47**

Readout	Over-Temperature Alarm	RF Alarm
None		
Temp.	*	
RF		*
TR	*	*

Table 47 Amplifier Card Alarm Readout

C	T	L	

Card Parameters Control Screen

G	a	i	n
S	e	t	
2	0		
d	B	m	

User gain setting
Read-Write

M	O	N	

Card Parameters Monitoring Screen

P	i	n	
R	F		
–	2	1	
d	B	m	

RF power input measurement in dBm
Read only

T	e	m	p
4	2		
d	C	e	l

Temperature measurement
Read only

P	o	u	t
R	F		
2			
d	B	m	

RF Power output measurement
Read only

A.2.6 1:1 RF Protection Switch Card

S	Y	S	

System

M	F	G	
1	2	3	A
B	4	5	

Card Manufacturing code
Read only

S	W		
V	e	r	.
1	.	3	4
_	0	7	

Card Software version
Read only

H	W		
R	e	v	.
A	1	7	

Card Hardware revision
Read only

A	L	M	

Card Alarms Status

A	L	M	
A			
N	o	n	e

Channel A alarm
Read only

A	L	M	
P			
A	l	m	

Channel P alarm
Read only

C	T	L	

Card Parameters Control

O	v	e	r
r	i	d	e
O	f	f	

Override Switch setting indicator [bypass MCP]
Read-Write
Options: Off, On

A	o	u	t
M	o	d	e
F	r	c	A

Channel A protection mode
Read-Write
Options: FrcA, FrcP, Auto

T	h	r	s
P			
3	.	2	7
3	.	1	8

RSSI Threshold voltage setting for ch.P
Read-write
← This line shows the actual measured value
← This line shows user modified value

T	h	r	s
A			
3	.	2	7
3	.	1	8

RSSI Threshold voltage setting for ch. A
Read-write
← This line shows the actual measured value
← This line shows user modified value

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