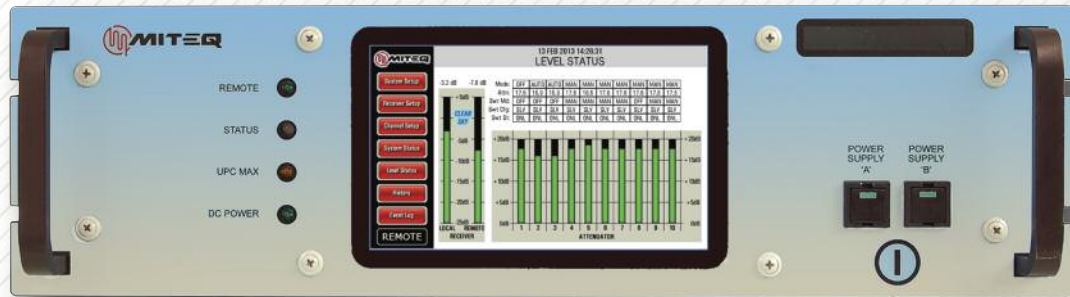


UPC2 Uplink Power Control Unit



The MITEQ UPC2 Uplink Power Control Unit is a rack-mountable unit, designed for geo-stationary satellite communication systems. It adjusts the strength of uplink signals to compensate for varying weather conditions.

The UPC2 can be setup completely from the front panel or over a remote bus via a host computer. All monitor and control functions are accessible at the front panel as well as over the remote bus. The UPC2 protocol set is backward-compatible with the well-known MITEQ UPC-A and UPC-L products.

A customer-supplied Beacon Receiver such as the MITEQ BR-L provides the UPC2 with a DC voltage proportional to the downlink signal strength.

The UPC2 can control up-to-ten uplink channels. Each channel can be either an attenuator channel resident in the UPC2 or an external MITEQ upconverter. The attenuator channels internal to the UPC2 are available for L-Band or 70/140 MHz IF frequencies. The UPC2 can adjust up to 20 dB of power correction for each channel. In the event of an internal attenuator fault or power loss to the UPC2, the signal will be switched to a failsafe path. This fail-safe path is routed through the rear panel via a “U” link connection. This connection allows the user to install a fixed attenuator in each path.

As an option, MITEQ offers the UPC2 with Diversity Site Switching to further reduce adverse effects of rain fade on uplink signals. Diversity Site Switching supports applications that employ two redundant uplink systems, in separate geographic locations such that uplink signals will only be transmitted from the site experiencing better weather conditions.

The UPC2 is equipped with fully redundant power supplies.

Features

- Up to ten uplink channels
- Fully redundant power supplies
- 10/100 Base-T Ethernet Interface
 - HTTP
 - Telnet
 - SNMPv1
- RS485/RS422 selectable remote interface
- Field expandable attenuator channels
- Color Touch Screen Display permit easy setup and monitoring

Options

- Up to ten attenuators with failsafe signal paths
- Site Diversity Switching (Option 3, see page 2)
- DC and 10 MHz by-pass (UPC-L) Options

RF Frequency (MHz)	Model Number
50–180	UPC2-A
950–2150	UPC2-L



Specifications	Model UPC2-A-ATT	Model UPC2-L-ATT
Functional Frequency	50–180 MHz	950–2150 MHz
Insertion loss at min. atten.	20 dB in 0.2 dB steps	
Amplitude response	±0.2 dB/50–90 MHz ±0.25 dB/100–180 MHz	±0.75 dB/950–1750 MHz
Input return loss	20 dB minimum	15 dB minimum
Output return loss	20 dB minimum	15 dB minimum
Input/output impedance	75 ohms (50 ohms optional)	50 ohms
Input third order intercept point	+28 dBm minimum	
Power output (P1 dB)	+10 dBm minimum	
Failsafe path insertion loss	1 dB maximum	2 dB maximum
DC by-pass Power Reference	N/A	24 VDC/2 amp maximum (no fuse) 5/10 MHz, 1 dB typical insertion loss 2 dB maximum
UPC2 Chassis features		
Summary alarm	Form-C contact closure	
Remote interface	10/100 Base-T and RS485/RS422	
Beacon level voltage input	0 to +10 VDC or 0 to -10 VDC (no zero crossing)	

Options

Available Attenuator Options (total of ten channels maximum)

<p>Option 70/140 MHz 75 ohms See specifications above</p> <p>1-1-A One UPC2-A-ATT 1-2-A Two UPC2-A-ATT 1-3-A Three UPC2-A-ATT 1-4-A Four UPC2-A-ATT 1-5-A Five UPC2-A-ATT 1-6-A Six UPC2-A-ATT 1-7-A Seven UPC2-A-ATT 1-8-A Eight UPC2-A-ATT 1-9-A Nine UPC2-A-ATT 1-10-A Ten UPC2-A-ATT</p>	<p>Option 70/140 MHz 50 ohms See specifications above</p> <p>15-1-A One UPC2-A-ATT-50 15-2-A Two UPC2-A-ATT-50 15-3-A Three UPC2-A-ATT-50 15-4-A Four UPC2-A-ATT-50 15-5-A Five UPC2-A-ATT-50 15-6-A Six UPC2-A-ATT-50 15-7-A Seven UPC2-A-ATT-50 15-8-A Eight UPC2-A-ATT-50 15-9-A Nine UPC2-A-ATT-50 15-10-A Ten UPC2-A-ATT-50</p>	<p>Option 950-2150 MHz 50 ohms See specifications above</p> <p>1-1-L One UPC2-L-ATT 1-2-L Two UPC2-L-ATT 1-3-L Three UPC2-L-ATT 1-4-L Four UPC2-L-ATT 1-5-L Five UPC2-L-ATT 1-6-L Six UPC2-L-ATT 1-7-L Seven UPC2-L-ATT 1-8-L Eight UPC2-L-ATT 1-9-L Nine UPC2-L-ATT 1-10-L Ten UPC2-L-ATT</p>
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3. Site Diversity

Site Diversity Switching is used when there are two redundant, geographically separated sites. With this option, there are two UPCs, one at each site and they communicate via an Ethernet link. Redundant IF Signals are switched at each site on a channelized basis such that the signals are up-converted and transmitted from only one site at a time. Switching is based upon user-programmable Downlink Signal Strength thresholds adjusted to select the optimal uplink site based upon prevailing weather conditions.

General Specifications

Primary Power Requirements

Voltage	90-250 VAC
Frequency	47-63 Hz
Power consumption	40 W typical

Physical

Weight	25 pounds nominal
Overall dimensions	19" [482.6mm] x 5.25" [133.35mm] panel height x 20" [508mm] maximum
Connectors Signal Path	
UPC2-A	BNC female
UPC2-L	SMA female
Beacon level voltage inputs	BNC female or DE-9P
Receiver fault inputs	DE-9P
Remote interface	
RS485/RS422	DE-9S
Ethernet	RJ-45

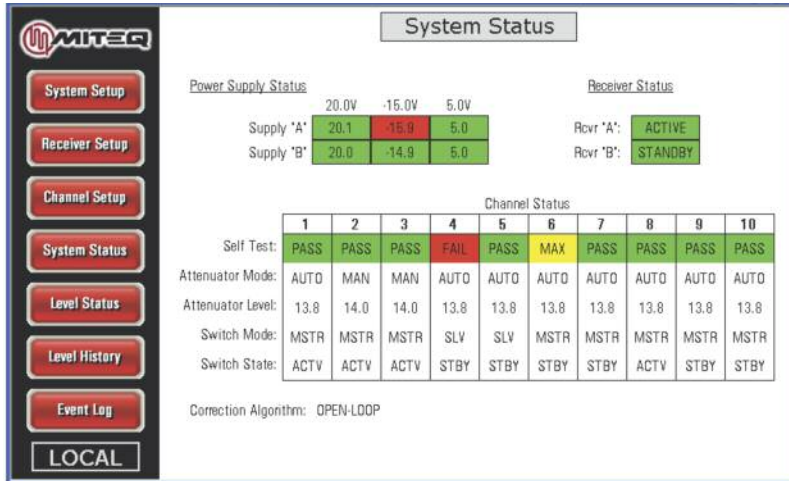
Environmental

Operating	Nonoperating
Ambient temperature	0 to 50°C
Relative humidity	Up to 95% at 30°C
Atmospheric pressure	Up to 10,000 feet
	Ambient temperature
	-50 to +70°C
	Relative humidity
	Up to 95% at 40°C
	Atmospheric pressure
	Up to 40,000 feet
	Shock and vibration
	Normal handling by commercial carriers

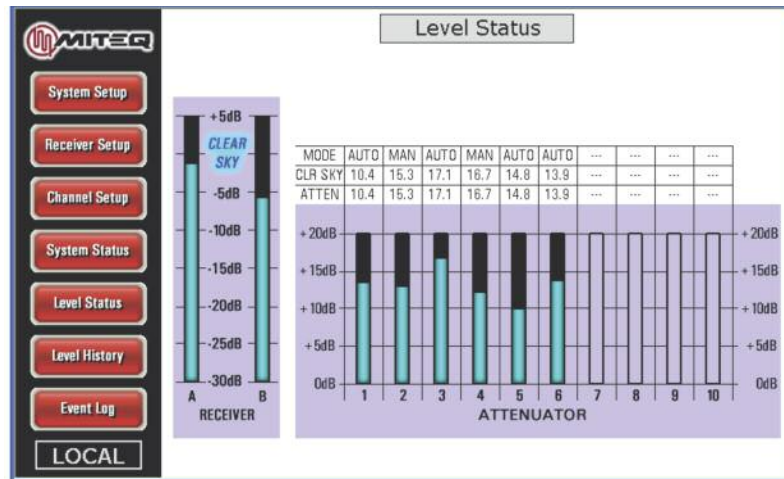
Touch Screen Displays

Typical control functions available;
Three of seven primary screens illustrated below

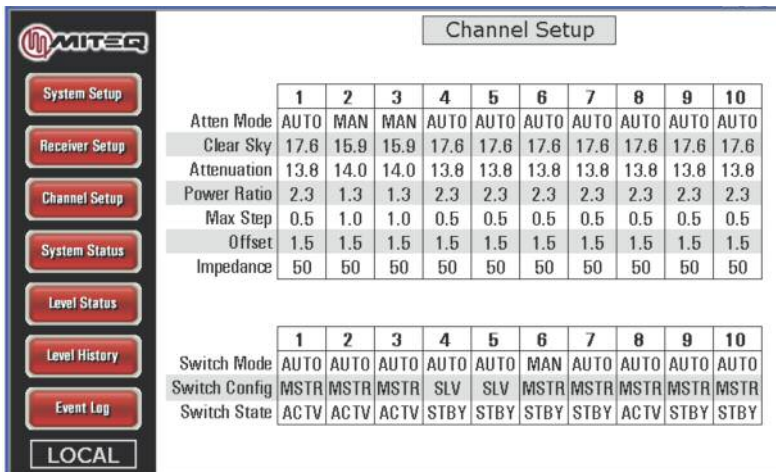
System Status



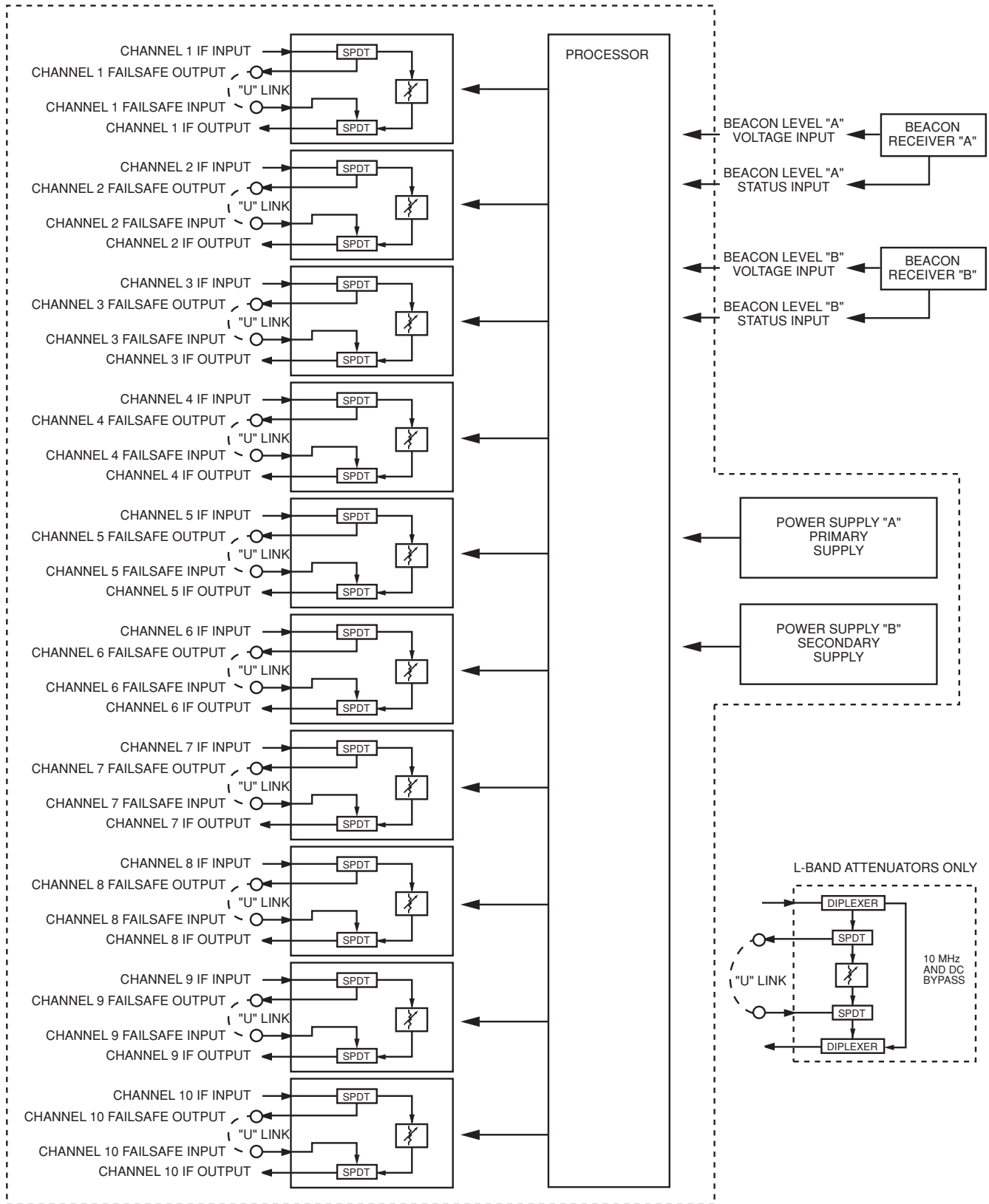
Level Status



Channel Setup



Functional Block Diagram



UPLINK POWER CONTROL UNIT