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 provides the UPC2 with a DC voltage proportional to the downlink signal strength.

The UPC2 can control up-to-ten uplink attenuator channels resident in the UPC2. The attenuator channels 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**

- L-Band and 70/140 MHz models
- 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 simplifies setup and operation

**Options**

- Up to ten attenuators with failsafe signal paths
- Site Diversity Switching (Option 3, see page 2)
- DC and 10 MHz by-pass for L-Band Options
- 30 dB optional range for 50–180 MHz
## Options

### Available Attenuator Options (total of ten channels maximum)

<table>
<thead>
<tr>
<th>Option</th>
<th>Frequency</th>
<th>Attenuation range</th>
<th>Characteristics</th>
</tr>
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<tbody>
<tr>
<td>1-1-A</td>
<td>70/140 MHz 75 ohms</td>
<td>See specifications above</td>
<td>Up to 20 dB in 0.2 dB steps</td>
</tr>
<tr>
<td>1-2-A</td>
<td>Two UPC2-A-ATT</td>
<td>950–2150 MHz</td>
<td>Up to 15 dB</td>
</tr>
<tr>
<td>1-3-A</td>
<td>Three UPC2-A-ATT</td>
<td>Up to 15 dB</td>
<td></td>
</tr>
<tr>
<td>1-4-A</td>
<td>Four UPC2-A-ATT</td>
<td>Up to 15 dB</td>
<td></td>
</tr>
<tr>
<td>1-5-A</td>
<td>Five UPC2-A-ATT</td>
<td>Up to 15 dB</td>
<td></td>
</tr>
<tr>
<td>1-6-A</td>
<td>Six UPC2-A-ATT</td>
<td>Up to 15 dB</td>
<td></td>
</tr>
<tr>
<td>1-7-A</td>
<td>Seven UPC2-A-ATT</td>
<td>Up to 15 dB</td>
<td></td>
</tr>
<tr>
<td>1-8-A</td>
<td>Eight UPC2-A-ATT</td>
<td>Up to 15 dB</td>
<td></td>
</tr>
<tr>
<td>1-9-A</td>
<td>Nine UPC2-A-ATT</td>
<td>Up to 15 dB</td>
<td></td>
</tr>
<tr>
<td>1-10-A</td>
<td>Ten UPC2-A-ATT</td>
<td>Up to 15 dB</td>
<td></td>
</tr>
</tbody>
</table>

### Specifications

#### Module UPC2-A-ATT

- **Frequency**: 50–180 MHz
- **Insertion loss at min. atten.**: 3.5 dB
- **Attenuation range**: 0 to 20 dB in 0.2 dB steps (30 dB optional for 50–180 MHz)
- **Amplitude response**: ±0.2 dB/50–90 MHz, ±0.25 dB/100–180 MHz
- **Input return loss**: 20 dB minimum
- **Output return loss**: 20 dB minimum
- **Input/output impedance**: 75 ohms (50 ohms optional)
- **Input third order intercept point**: +28 dBm minimum
- **Power output (P1dB)**: +18 dBm minimum

#### Module UPC2-L-ATT

- **Frequency**: 950–2150 MHz
- **Insertion loss at min. atten.**: 4.0 dB
- **Attenuation range**: ±0.75 dB/950–2150 MHz
- **Amplitude response**: ±0.2 dB/50–90 MHz, ±0.25 dB/100–180 MHz
- **Input return loss**: 15 dB minimum
- **Output return loss**: 15 dB minimum
- **Input/output impedance**: 50 ohms
- **Input third order intercept point**: +28 dBm minimum
- **Power output (P1dB)**: 3.5 dB maximum

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### General Specifications

**Primary Power Requirements**
- **Voltage**: 100-240 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

**Environmental Operating**
- **Ambient temperature**: 0 to 50°C
- **Relative humidity**: Up to 95% at 30°C
- **Atmospheric pressure**: Up to 10,000 feet

**Environmental Nonoperating**
- **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

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

System Status

![System Status Screen](image)

Level Status

![Level Status Screen](image)

Channel Setup

![Channel Setup Screen](image)