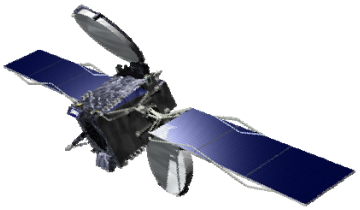
Glowlink® Model 3010

Uplink Power Control System



The Model 3010 combats signal degradation with safe, effective, reliable uplink power management.

Glowlink's groundbreaking SmartClamp™ technology prevents power overload.

Product Overview

Glowlink's Model 3010 represents a new generation of Uplink Power Control (UPC). This DSP-based system uses advanced Glowlink control technology to compensate for uplink atmospheric attenuation, and is effective through Ka-band frequencies. The Model 3010 incorporates advanced DSP control algorithms and has a built-in, all-digital, precision beacon receiver. Along with the beacon level, and other reference signals such as pilot or loopback carriers, the system verifies and refines uplink power adjustments using extremely powerful control algorithms, making the Model 3010 ideal for critical applications requiring accurate and reliable UPC.

The Model 3010 also offers Transponder Compression Avoidance™, a powerful safety technology that mitigates transponder interference by preventing excessive UPC adjustments. SmartClamp™ regulates power adjustments as the patented Transponder Operating Point (TOP™) technology continuously and accurately analyzes transponder compression levels. The result is safe and effective power control on a level unmatched by other UPC systems on the market.

The Model 3010's graphical user interface (GUI) provides easy-to-use, set-and-forget power control operations along with a historical power adjustment display. At the click of a button, the Model 3010 can also import historical beacon/pilot, loopback carrier, and attenuator settings directly into an Excel™ worksheet, along with a date and time stamp of each measurement for quick and easy analysis of system operations.

Model 3010 Product Features

- Available with Transponder Compression Avoidance™
- 32 dB of power adjustment range.
- Built-in beacon/pilot carrier monitoring capability.
- Historical graphical display to verify power adjustment.
- Easy-to-use graphical user interface.
- A failsafe signal path for added safety in operation.
- Available with redundant, hot swappable power supply for added reliability.

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Safe, Effective Power Control

The Model 3010 manages uplink power by monitoring a selectable satellite beacon/pilot reference carrier and then by responding to level changes with uplink power adjustments. Erroneous power adjustments caused by noise and measurement artifacts commonly encountered in UPC systems are prevented using sophisticated digital signal processing algorithms.

The Model 3010 also measures uplink power adjustments as observed through the satellite return path to ensure the power controlled traffic is maintained within specification. In 'loopback' mode, the Model 3010 continuously monitors the return carrier to verify the effect of the power control adjustments. Uplink power adjustments are then refined to maintain proper carrier receive levels.

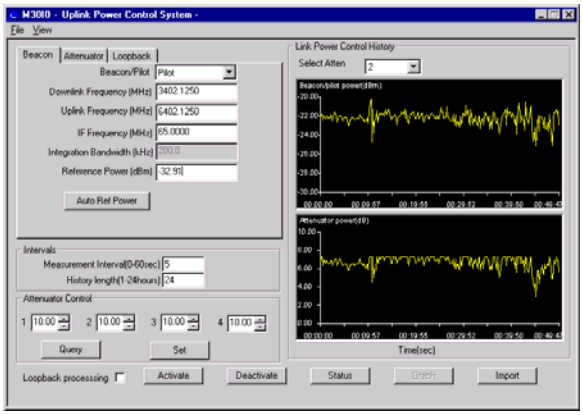
This process of quickly and constantly adjusting and refining uplink power levels provides effective and accurate power control management for uplink fades, and can also reduce secondary atmospheric effects such as scintillation.

Protects against Transponder Saturation

The Model 3010 Transponder Compression Avoidance™ feature prevents the catastrophic problem of a UPC system inadvertently pushing the transponder into severe compression or even saturation. This feature is enabled by Glowlink's Transponder Operating Point (TOP™) technology-- an accurate, non-intrusive way to detect transponder compression--, and Glowlink's SmartClamp™ technology to regulate and prevent power adjustments from compressing, or worse, saturating the service transponder.

Easy-to-Use GUI

The Model 3010 is operated from a Windows™ GUI running on a companion PC.



Beacon/pilot, attenuator channel, and loopback settings are each entered through the GUI, and as power control is activated, can all be viewed at the click of a button.

An import function transfers time and date stamped beacon/pilot power, loopback carrier power, and attenuator channel settings directly to an Excel™ worksheet for further analysis and reporting.

Reliable, Accurate Power Adjustments

The Model 3010 is highly scalable, and can support 1-4 channels of traffic, with adjustment ranges of 32 dB in 0.25dB minimum steps. Upper and lower power adjustment thresholds are also available to complement the SmartClamp™ feature.

As an added safety feature, The Model 3010's failsafe attenuator paths provide guaranteed signal routing in the unlikely event that the system loses power.

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Model 3010 Specifications

Attenuator Channels

Number of Channels	1 – 4
Frequency	50 – 1500 MHz 50 – 1750 MHz (optional)
Full Adjustment Range	32 dB
Adjustment Resolution	0.25 dB
Input Return Loss	20 dB
Output Return Loss	20 dB
Input Impedance	75 ohms
Output Impedance	75 ohms
Connector Type	BNC
Failsafe Path Attenuation	Factory configurable

Beacon/Pilot, Loopback Interface

Input Frequency	950 - 1450 MHz
Input Impedance	50 ohms
Connector Type	BNC
Operating Input Range	-55 to 0 dBm
Max Input Level	+5 dBm

Physical

19-Inch Rackmount	EIA RS-310C
Power	Autoselect 110-230VAC
Frequency	47-63 Hz

Options

-Transponder Compression Avoidance™
-Redundant, hot swappable power supplies
-Hardware/software maintenance and support

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Glowlink Related Patents

With respect to the Glowlink product(s) described in this document, the following patents may apply:
United States Patent No(s): 8,004,459; 7,667,640; 7,663,547; 7,639,761; 7,466,767; 7,120,392; 6,549,755; New Zealand Patent No(s): 529266; 533787, Singapore Patent No(s): 100422; 105251, Australia Patent No(s): 2002340512; 2003213579, Europe Patent No(s): 1393472, Canada Patent No(s): 2446301, China Patent No(s): ZL02812548.7, Hong Kong Patent No(s): 1066941.

Other U.S. and International Patents Pending