

## POWER BOOSTER

The Power Booster Technology enables diverse antennas to be combined to allow an improvement in the receive signal's C/N of nearly 3dB and a potential link efficiency gain of 30-50%. Working in C, Ku, Ka and other bands using a single Power Booster, two antennas can be combined to duplicate the received carrier to noise or a redundant carrier can be received by same antenna and combined to also duplicate this level. As a result, small antennas can be used with an improved reception performance.

## FEATURES

### Supports C, X, Ku, and Ka bands Transponder Configuration

- Uplink and Downlink under same beam (noncrossstrapped transponder).
- Bent-pipe transponder (non regenerative)

**Operation Frequency** L band, 140MHz

**Bandwidth Supported** Up to 72 MHz

**Remote** Serial/ SNMP

**Redundancy** 1:1 (Optional)

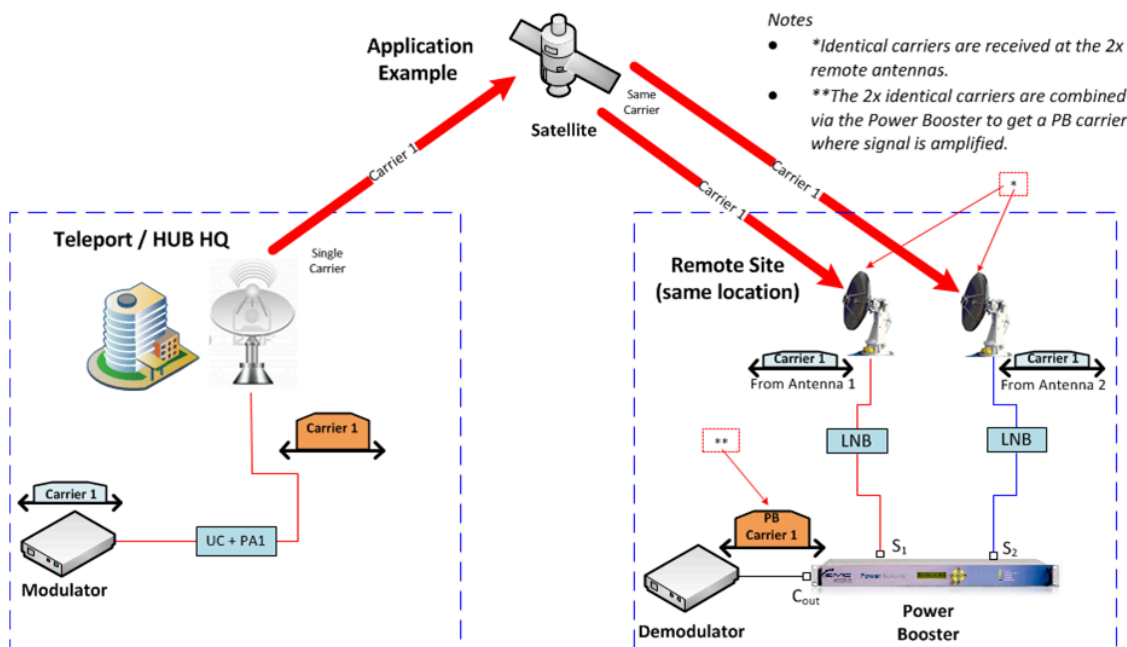
**BUC and LNB** DC and 10MHz reference pass through

### Monitor Parameters

- Estimated Delay
- Signal levels at  $H_{in}$ ,  $A_{in}$  and  $R_{out}$  ports
- Estimated Doppler Shift
- Delay and Doppler Variations

**10 MHz Reference** Internal and External selectable

**Spectrum Inversion** Inbound signal can be spectrally inverted relative to outbound signal (Applicable for bandwidths  $\leq 13.63$ MHz)



## SPECIFICATIONS

### PERFORMANCE

**Processing Bandwidth:** 200 kHz to 72 MHz

**Gain:** Up to 3dB

**Median Synchronization Time**

- < 15 s, from initial power on
- < 4.5 s, from interruption of  $H_{in}$  signal > 0.5 s
- < 1.5 s, from interruption of  $H_{in}$  signal < 0.5 s

**Maximum Delay Variation:** +/- 40 ns/s

**Maximum Amplitude Variation:** +/- 0.5 dB/s

**Maximum Frequency Variation:** +/- 21 Hz/s

### INPUT SIGNAL CONDITIONS

**Signal Format:** Continuous

**Symbol Rate:** Up to 65Mbaud

**Modulation Formats:** BPSK, QPSK, OQPSK, 8PSK, 16QAM, 16APSK, 32APSK, 64QAM

**Spectral Roll-off:** 10 – 35%

**SSB Phase Noise of A Signal:**

- -68 dBc/Hz at 100 Hz
- -90 dBc/Hz at 1 kHz
- -96 dBc/Hz at 10 kHz

**Linear Distortion of A, relative to H:**

- Amplitude: 0.5 dB peak-to-peak over symbol rate bandwidth
- Group delay: 0.2 symbol periods peak-to-peak over symbol rate bandwidth

**Dynamic Range of  $H_{in}$  Signal:** 30 dB composite

**Dynamic Range of  $A_{in}$  Signal:** 30 dB composite

**Expected Path Delay:** ±2ms

**$A_{in}$  Frequency offset from expected:**

< 8kHz, 16kHz, 32kHz, 64kHz, 128kHz selectable

**Power Supply Voltage:** 100–240 VAC, 47–63 Hz, 50W

**Temperature:**

- Operating: 0 to 40°C (32 to 104°F)
- Storage: -25 to 85°C (-13 to 185°F)

### ELECTRICAL

PORT	PARAMETER	VALUE
AC Input	AC Power Input	100 to 240VAC, 47 to 63Hz, 50W
USB	Interface	USB-B Male
Fault	Interface	RS232, DB9 Male
MGMT	SNMP Interface	RJ45 Female
M&C	Interface	RS232, DB9 Male
10MHz-IN	Input Reference	SMA Female
H L-IN ( $H_{in}$ )	Input Frequency Input Impedance Input Return Loss	L band 50Ω, N Female > 10dB
	Input Level	Max -5dBm total power in 950MHz-1750MHz BW -20dBm to -50dBm in desired 72MHz BW (Maximum input power reduces by 3dB for each halving of desired BW)
H IF-IN	Input Frequency	140MHz
	Input Impedance	50Ω, BNC Female
	Input Return Loss	> 10dB
	Input Level	-3dBm
H L-MON	Output Frequency	L band
	Output Impedance	50Ω, SMA Female
	Output Return Loss	> 10dB
	Output Level	10dB below $H_{in}$
A L-IN ( $A_{in}$ )	Input Frequency Input Impedance Input Return Loss	L band 50Ω, N Female > 10dB
	Input Level	Max -5dBm total power in 950MHz-1750MHz BW -20dBm to -50dBm in desired 72MHz BW (Maximum input power reduces by 3dB for each halving of desired BW)
A IF-IN	Input Frequency	140MHz
	Input Impedance	50Ω, BNC Female
	Input Return Loss	> 10dB
	Input Level	-3dBm
A L-MON	Output Frequency	L band
	Output Impedance	50Ω, SMA Female
	Output Return Loss	> 10dB
	Output Level	10dB below $A_{in}$
R L-OUT ( $R_{out}$ )	Output Frequency	L band
	Output Impedance	50Ω, N Female
	Output Return Loss	> 10dB
	Output Level	-20 to -50dBm
R IF-OUT	Output Frequency	140MHz
	Output Impedance	50Ω, BNC Female
	Output Return Loss	> 10dB
	Output Level	-20dBm
R L-MON	Output Frequency	L band
	Output Impedance	50Ω, SMA Female
	Output Return Loss	> 10dB
	Output Level	10 dB below $R_{out}$

### PROCESSING LATENCY

**Bandwidth range**      **NRS processing delay**

27.27-72 MHz	≈ 48 μs
13.63-27.27 MHz	≈ 76 μs
6.81-13.63 MHz	≈ 138 μs
3.4-6.81 MHz	≈ 260 μs
1.7-3.4 MHz	≈ 502 μs
0.85-1.7 MHz	≈ 1.2 ms
0.42-0.85 MHz	≈ 2.2 ms
0.21-0.42 MHz	≈ 4.2 ms
<0.21 MHz	≈ 8.0 ms

**Global Eagle**  
3044 N Commerce Parkway,  
Miramar, USA, 33025  
T +1 954 538 400  
[www.geemedia.com](http://www.geemedia.com)