

Lossless GPS Signal Splitter

Cellular network timing solution

Microlab's Lossless GPS Signal Splitters can be used to distribute UTC synchronization to up to 32 remote units using only 2 redundant GPS antenna signals. The GPS signal quality is actively monitored by this system and can be combined with the Microlab Digital GPS Signal Repeater where GPS signals are not readily available. 16-channel and 32-channel options are available with up to +10dB selectable gain.



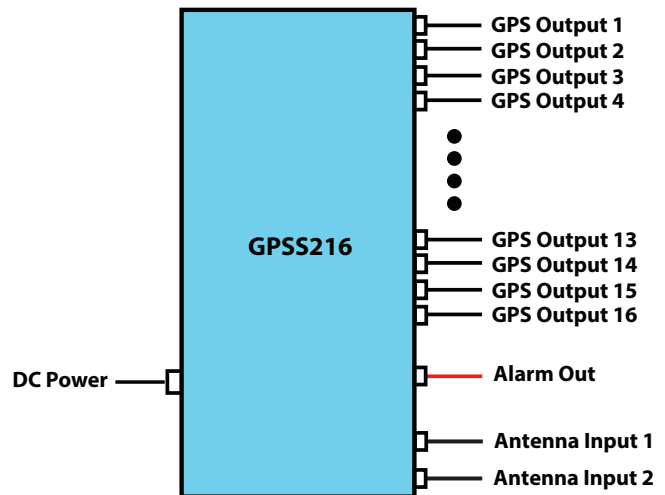
Features

- Lossless GPS Signal Splitter with up to 16 RF outputs in a 1RU chassis or 32 outputs in a 2RU chassis
- Input antenna redundancy with automatic switch over
- GPS signal quality monitoring
- Antenna DC bias supply with monitoring
- Dry contact alarms and LED indicators
- Compatible with Microlab GPSR116 Series Digital GPS Signal Repeaters
- Selectable gain: 0dB or +10dB

Applications

- Signal distribution for cellular communications UTC synchronization
- High density, indoor rack-mounted network timing
- GPS transmission re-broadcasting to multiple antennas

16-Channel Connection Diagram



SPECIFICATIONS	GPSS216	GPSS232	Comments
Description	16-channel Lossless GPS Splitter	32-channel Lossless GPS Splitter	
# RF output ports	16	32	
GPS Bands Supported	GPS L1 (1575.42MHz)		
Gain @ 1575.42MHz	0dB or 10dB ± 1dB		Selectable
Input/Output VSWR (max)	14dB		
Impedance	50 ohms		
Gain Flatness (max)	0.5dB		Single port
Amplitude Balance (max)	±1.0dB		Port to port
Input Isolation between Antennas (min)	50dB		
Output Isolation (min)	20dB		Port to port
Noise Figure (max)	4dB		
Output IP3 (min)	-7dBm		
Input P1dB (min)	-20dBm		
DC supply to antenna ports	+5V nominal, 50mA max		
DC load to output ports	200ohm, 1/4W		
RF Connectors	Input: SMA female Output: SMA female		
Max RF input without damage	-40dBm		
DC Input voltage	-48 / +24 VDC		Optional AC adapter
DC Power Consumption (max)	5W		
Dimensions (WxDxH)	19in x 17in x 1.75in 482.6mm x 431.8mm x 44.5mm		

Antenna Alarms & Indicators

Each antenna has an LED status indicator and a pair of “normally closed” dry alarm contacts

ANTENNA DC BIAS STATUS	Antenna Current Consumption	LED Status	Dry Contact Status
Normal	5mA to 50mA	Green	Closed
Open circuit or no connection	< 5mA	Yellow	Open
Short circuit	> 50mA	Red	Open

GPS Signal Quality Monitor

ANTENNA GPS SIGNAL HEALTH	Antenna Current Consumption	LED Status
Normal	≥ 4 GPS satellites pass mask	Green
Fault	≤ 4 GPS satellites pass mask	Flashing Red and Yellow

Note 1: Mask requirements: SNR > 10dB, Elevation > 10 degrees

Note 2: Antenna will automatically switch over to secondary when primary goes into fault condition

Optional Accessories:

GPSA001: AC/DC power adapter

GPSA002: PoE Adapter

DISCLAIMER:

GPS and GNSS re-transmission to an antenna requires regulatory approval. These approvals are granted on an individual basis by regulating bodies. Microlab cannot grant these approvals, and cannot be held responsible for violating these regulations using the system.

The FCC requires commercial users within the US to acquire and maintain a Part 5 experimental license to re-broadcast GPS signals. Licenses are not required if they are inside an RF shielded environment. European regulations vary by country. Consult local authorities for additional details.