Microlab | ACTIVE SOLUTIONS

Data Sheet

Digital GPS Signal Repeater System

Cellular network timing solution

Microlab's digital GPS repeater system be used for cellular communications UTC synchronization for C-RAN hubs and Distributed Antenna Systems (DAS) where the GPS signals are not readily available (no sky-view) close to the basestation or where remote monitoring and advanced alarms are required. The system is built with Microlab's patent-pending Digital SkyTiming Technology™ offering industry-first GPS signal transmission via CPRI for highly accurate timing and location.

Features

- GPS timing system configured with indoor unit and outdoor unit
- Patent-pending **Digital SkyTiming Technology™**
- Improved fiber optic signal transport via industry-standard CPRI protocol
- Provides GPS timing offset within 100ns accuracy
- Supports single mode fiber with LC/UPC connectors
- Network Monitoring System (NMS) reports broken antenna or degraded GPS and fiber optic link status
- Secure SNMP v3 and HTTPS interface
- Reporting and monitoring through web server using IPv4 and IPv6
- Range of 10km between indoor and outdoor unit
- 32-48 RF outputs supported with optional GPSS216/GPSS232 splitter trays (sold separately)

Configuration

- **GPSR400 outdoor unit**
  - Up to 4 GPS antenna inputs
  - High performance 4.3-10 antenna connections
  - Redundant fiber optic output links
  - +24 VDC redundant power supply
  - Loss of signal alarms
  - LED system health indicators
  - RJ-45 Ethernet local port
  - Outdoor Rated wall-mount enclosure

- **GPSR116 Indoor head-end unit**
  - 1 RU rack-mounted controller
  - 16 RF outputs, SMA connectors
  - Option to support additional RF outputs

Microlab, A Wireless Telecom Group Company, 25 Eastmans Road, Parsippany, NJ 07054
Tel: (973) 386-9696 | sales@microlabtech.com | www.microlabtech.com | Fax: (973) 386-9191

SPECIFICATIONS	GPSR116	GPSR400
Description	Indoor Head End, 16 ports	Outdoor Remote Unit 4 Antenna Input
# of RF channels (Note 1)	16 Tx	4 Rx
Bands Supported	GPS L1 (1575.42MHz)	
Power Supply (Note 2)	+24 VDC	
Power Consumption	13W (max)	
Rx Noise Figure	n/a	5dB (max without external LNA)
Rx Input IP3 (IIP3)	n/a	30dBm (min)
Rx RF Input Return Loss	n/a	14dB (min)
Antenna Power Supply	n/a	+5V (typ) 50mA (max)
Tx RF Output Power	-75dBm (max)	n/a
Tx RF Output Return Loss	14dB (min)	n/a
Tx Output IP3 (OIP3)	0dBm (min)	n/a
Tx Other Spurious Outputs	-75dBm (max)	n/a
DC Load on RF output port	200 ohm, 1/4W	n/a
RF Link Budget to Antenna	n/a	0dB
Optical Link Budget (Note 3)	10km @ 1310nm	
Optical ports	SMF, LC/UPC standard	
Digital signal transport	CPRI (2.457Gbps)	
Delay Accuracy	<100ns, 25ns (typical)	
Ethernet ports	RJ45 (2)	
Ethernet speed	10/100 MBps compatible	
Dimensions (W x D x H) **Without mounting brackets or connectors (Note 1)**	19in x 16.0in 1.75in 482.6mm x 406.4mm x 44.4mm	14.75in x 9in x 6.75in 374.7mm x 228.6mm x 171.45mm
Weight	10.6 lb	16.75 lb
Rx RF Input Connector (Note 1)	n/a	4.3-10 (4)
Tx RF Output Connectors	SMA (16)	n/a
Operational Temperature	0 to +50°C	

Notes:

1) Customized channels/configurations supported

2) External power supply converters available as accessory.

3) Depends on the wavelength and whether single mode or multimode fiber.

Optional Accessories:

GPS-30-N-S: GPS Antenna 30dB gain, narrow band

GPSA001: GPSR116 AC/DC power adapter

GPSA002: GPSR116 PoE power adapter

GPSA003: GPSR400 AC/DC power adapter, IP67 Outdoor

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.