Microlab

GPS Solutions Guide

www.microlabtech.com

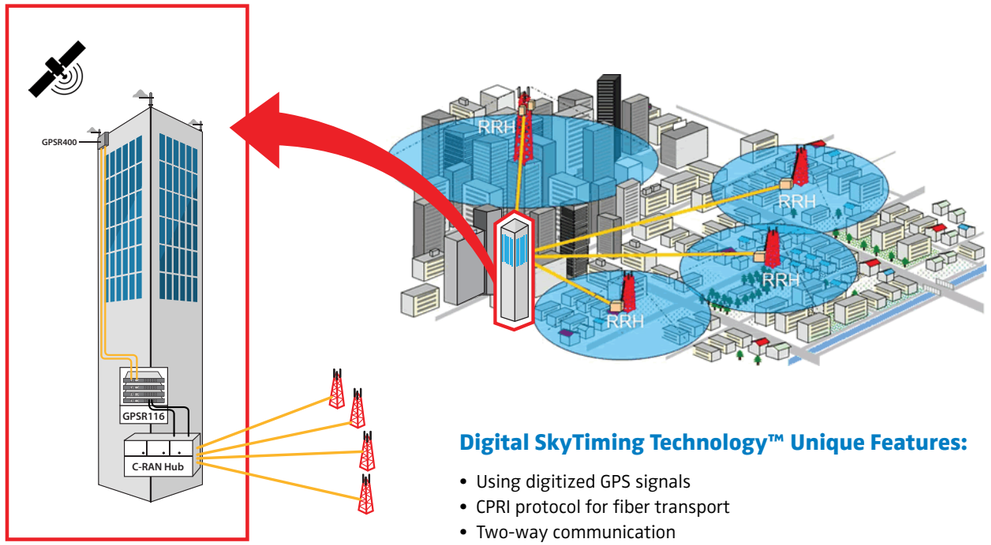
Wireless Telecom Group

Boonton CommAgility Microlab Noisecom

Digital Skytiming Technology™

Digital SkyTiming Technology™ is a patent-pending technique to transport GPS signals digitally over fiber for wireless network timing applications in C-RAN hubs and Distributed Antenna Systems (DAS). It is used in wireless systems where GPS signals are not readily available (where no skyview exists) close to the basestation or where remote monitoring and advanced alarms are required in the NOC by the carrier.

GPS signal is converted from RF to digital and transported over a fiber optic cable using Common Public Radio Interface(CPRI) protocol. The digital GPS signal is analyzed for number of satellites and the signal quality, and monitored for robust network operation. The fiber link is also analyzed for round trip delay times and link quality to support advanced wireless features. The digital signals are then converted back to RF and distributed to the wireless network.



Digital SkyTiming Technology™ Unique Features:

- Using digitized GPS signals
- CPRI protocol for fiber transport
- Two-way communication

Impact of Digital GPS Signal Repeaters

- Solves network timing distance limitation in C-RAN and DAS systems
- Redundancy for fiber, GPS antenna and power supply for reliability.
- Remote control and monitoring allows system management and reduces network troubleshooting
- Provides accurate timing required for advanced wireless services

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

Microlab ACTIVE SOLUTIONS

GPS Solutions
Signal monitoring and distribution for cellular communication
UTC synchronization/timing and location

Digital Skytiming™ Benefits

- Allows GPS signals to be transmitted up to 10km from antenna to BTS/BBU
- New web-based interface provides remote system control and monitoring over Ethernet
- Monitors antenna status with automatic switch-over
- Redundant fiber optic links monitored with auto switch-over
- Provides synchronization accuracy upto 100ns alignment for LTE and LTE-A
- Reduces temperature sensitivity
- Detects the presence of interference or jamming
- Eliminates signal degradation
- Advanced intelligent SNMP alarms

GPSR400 - Outdoor Remote Unit

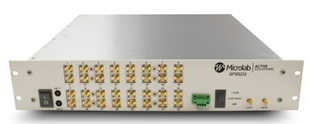
- Up to 4 GPS antenna inputs
- Outdor Rated Wall-mount enclosure
- Redundant fiber optic links
- Loss of signal alarms
- LED system health monitors
- Ethernet local port
- Connects to GPSR116 Indoor Head-End Unit

GPSR116 - Indoor Head-End Unit

- Up to 16 GPS RF outputs
- Redundant fiber optic links
- 1RU rack-mounted controller
- LED system health monitors
- Ethernet local port
- Connects to GPSR400 Outdoor Remote Unit

GPSS216 - GPS RF Signal Splitter

- Up to 16 GPS RF outputs
- 2 GPS antenna inputs
- GPS signal quality monitoring
- Compatible with GPSR116 Indoor Head-End Unit



GPSS232 - GPS RF Signal Splitter

- Up to 32 GPS RF outputs
- 2 GPS antenna inputs
- GPS signal quality monitoring
- Compatible with GPSR116 Indoor Head-End Unit

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

GPS Repeater

Model	Description
GPSR116	GPS Repeater Head End Unit, 16 RF outputs, SMA Connectors
GPSR400	GPS Repeater Remote Unit, 4 GPS Antenna Inputs, 4.3-10 Connectors

GPS Lossless Splitter

Model	Description
GPSS216	16-way GPS Active Splitter 10dB Gain 2-Ant SMA 1RU
GPSS232	32-way GPS Active Splitter 10dB Gain 2-Ant SMA 2RU
GPSS002-N	2-way GPS Active Splitter 12dB Gain N-type IP67
GPSS002-S	2-way GPS Active Splitter 12dB Gain SMA IP67
GPSS004-N	4-way GPS Active Splitter 9dB Gain N-type IP67
GPSS004-S	4-way GPS Active Splitter 9dB Gain SMA IP67
GPSS008-N	8-way GPS Active Splitter 6dB Gain N-type IP67 6dB gain
GPSS008-S	8-way GPS Active Splitter 6dB Gain SMA IP67

GNSSS Splitters

Model	Description
D2-42FN	2-way GNSS Splitter 1100-1700MHz 10W N-type IP67 Single DC Path Feed
D4-42FN	4-way GNSS Splitter 1100-1700MHz 10W N-type IP67

GPS Jumpers

Model	Description
GPSJ-10-EMSM	1m 0.141 GPS Cable DC-6GHz 50W 4.3-10(m)-SMA(m) Indoor n/a PIM Indoor
GPSJ-10-SMSM	1m 0.141 GPS Cable DC-6GHz 50W SMA(m)-SMA(m) Indoor n/a PIM Indoor
GPSJ-20-EMSM	2m 0.141 GPS Cable DC-6GHz 50W 4.3-10(m)-SMA(m) Indoor n/a PIM Indoor
GPSJ-20-NFSM	2m 0.141 GPS Cable DC-6GHz 50W N-type(f)-SMA(m) Indoor n/a PIM Indoor
GPSJ-20-SMSM	2m 0.141 GPS Cable DC-6GHz 50W SMA(m)-SMA(m) Indoor n/a PIM Indoor
GPSJ-30-SMSM	3m 0.141 GPS Cable DC-6GHz 50W SMA(m)-SMA(m) Indoor n/a PIM Indoor
GPSJ-40-SMSM	4m 0.141 GPS Cable DC-6GHz 50W SMA(m)-SMA(m) Indoor n/a PIM Indoor
GPSJ-50-SMSM	5m 0.141 GPS Cable DC-6GHz 50W SMA(m)-SMA(m) Indoor n/a PIM Indoor

GPS Accessories

Model	Description
GPSA001	GPSR116 AC/DC Adapter, 100-240V AC Input, 24V DC Output
GPSA002	GPSR116 PoE DC/DC Adapter, 45-57V DC Input, 24V DC Output
GPSA003	GPSR400 AC/DC Adapter, 100-240V AC Input, 24V DC Output IP67 Outdoor
GPS-30-NS	GPS Active Antenna L1 Band 30dB Gain N-type Lightning Protection

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