

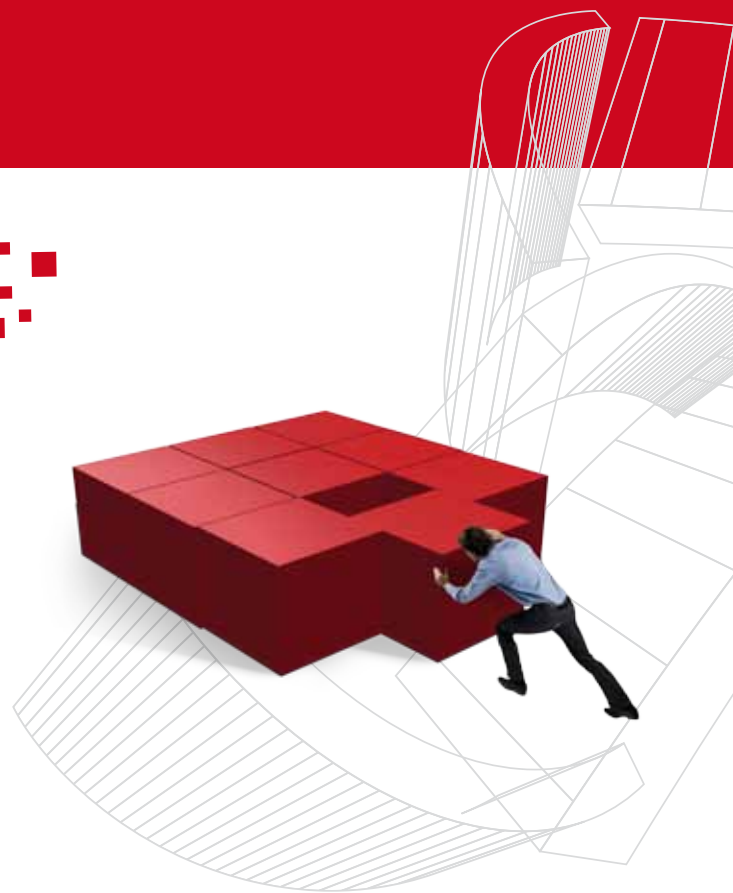


Continuous Monitoring



LS OBSERVER

Fixed Monitoring Unit



Great Flexibility with the LS OBSERVER FMU (Fixed Monitoring Unit)

The LS OBSERVER FMU (Fixed Monitoring Unit) is best applied in long-term outdoor monitoring and EMF measurements, ideal in cities where dense network coverage is needed. With a very small footprint it can be installed on high-rise building rooftops on a "single pole". Once installed it operates semi- or fully automated. The FMU comes in a robust enclosure. It is about as large as a mid-sized suitcase and withstands all

kinds of weather. It integrates at least one radio-monitoring receiver for scanning and geolocation.

The FMU is unique in two ways. It monitors and records the radio frequency spectrum non-stop around the clock. The recorded data is stored for analysis whenever necessary for up to two years. The FMU can be remote-controlled through a variety of cabled and wireless networking technologies.

Use LS OBSERVER for the following Measurement Applications

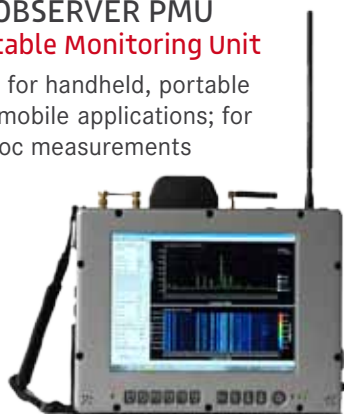
- Continuous monitoring
- Network coverage measurements
- Geolocation to locate illegal or interfering transmitters
- Radio surveillance for events, VIP or border control
- Control of critical communications networks
- Detection of white spaces
- Tunnel measurements
- Near reconnaissance
- EMF measurements



A family of 5 different types of Remote Monitoring Units (RMU) is available with LS OBSERVER de

LS OBSERVER PMU Portable Monitoring Unit

Ideal for handheld, portable and mobile applications; for ad-hoc measurements



LS OBSERVER TMU Transportable Monitoring Unit

Ideal for temporary mobile and fixed measurements, battery powered.



LS OBSERVER MMU Mobile Monitoring Unit

Ideal for drive-tests and commissioning measurements



Key Features



Continuous Monitoring

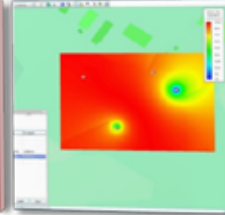


Recording Monitoring Data

Geolocation with TDoA



Geolocation with PDoA



Options & Accessories

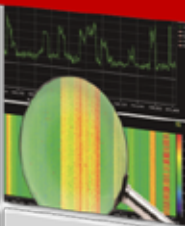


Multiple Receivers



Monitoring Antennas

Signal Analysis



Automated Data Processing



Why would I use LS OBSERVER FMU ?



+ Because I can use my measurement results straight away AND store them for future needs. (I may want to compare today's measurement results with measurements I make in the future or against data in the database.)

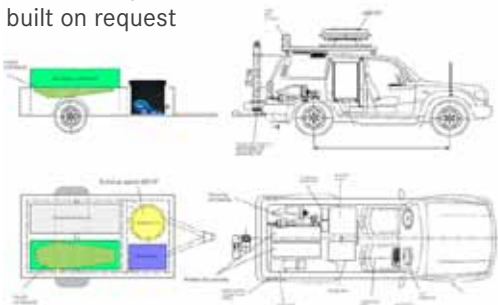
+ Because the LS OBSERVER FMU is part of a monitoring system that grows with my needs and my budget. (I can order a small number of units or a complete system, I can add stations one by one, and any type of station that I need.)

depending on your needs - for flexible use and a wide range of applications



LS OBSERVER System Integration

Customer specific solutions, built on request



Airborne Measurement Service Using Remotely Piloted Aircraft (RPA)

RF & antenna pattern measurements, site inspection and very mobile monitoring



Service offered by **Colibrex**
Member of the LS telecom Group

Technical Details **LS OBSERVER FMU**

		FMU 306	FMU 312	FMU 318
RF Characteristics				
RF Characteristics	Frequency range	9 kHz to 6 GHz	100 kHz to 12.4 GHz	10 MHz to 18 GHz
	Scanning speed	up to 24 GHz/s	up to 140 MHz/s	up to 2 GHz/s
	Max. input level	+20 dBm, 0 VDC	+20 dBm / 0 VDC	+15 dBm, 15 VDC
	IQ bandwidth	up to 27 MHz	up to 240 kHz	up to 20 MHz
	Frequency accuracy	1.10 ⁻⁹ unlocked 1.10 ⁻¹¹ GPS locked	1 ppm	1 ppm
Connectivity				
Connectivity	RF antenna inputs	1x N-Type	1x N-Type	2x N-Type
	External GPS antenna input	yes		
	Wired networking	1 x Gigabit-Ethernet		
	Wireless networking	opt. UMTS, opt. LTE, opt. WiMax		
	Wireless local networking	opt. WiFi (802.11 b/g/n)		
Geolocation				
Geo-location	Direction Finding (DF)	available on a project basis		
	Power Difference of Arrival (PDoA)	yes		
	Time Difference of Arrival (TDoA)	yes	no	yes
	GPS receiver	yes, high accuracy	yes	yes
Storage				
Storage	Storage time of raw data	up to 30 days	up to 30 days	up to 30 days
	Storage time of statistic data	up to 2 years	up to 2 years	up to 2 years
Environmental Parameters				
Environmental Parameters	Ruggedised	yes		
	Temperature range	-30°C* to +55°C	-30°C* to +55°C	-10°C** to +45°C
	Power supply	10-32V DC or 100-240V, 50-60Hz with external PSU		
	Power consumption	max. 110 VA typ. 45 VA	max. 105 VA typ. 42 VA	max. 150 VA typ. 75 VA
	Weight (system unit with mast clamp)	24.5 kg	24.5 kg	27.5 kg
	Dimensions in mm (W/H/D)	370x522x210 370x522x280 with mast clamp	370x522x210 370x522x280 with mast clamp	370x522x210 370x522x280 with mast clamp
	Humidity (non condensing)	5% - 95%	5% - 95%	15% - 95%
	Protection	IP 65	IP 65	IP 65
	Colour	White	White	White

*: startup temp. -20°C

** startup temp. 0°C