EIFFAGE TESEO

SOPM306 Series
USB & Optical RF Power Meters

OVERVIEW

The new series of USB & Fibre Optic power meters offer an extended measuring bandwidth up to 6 GHz, with two different models which can be operated on a fiber optic link and battery power, or as self powered stand-alone power meter with direct connection to an USB computer port. The new RF power meter is available in two different models:

SOPM306, rugged version with high immunity to EM disturbances. This unit has an user-replaceable battery. The battery can be replaced in seconds and recharged apart. This allows an almost uninterrupted working duty, eliminating the recharging down-time.

SOPM306L, the cost-effective version, keeping all the electrical specifications of the rugged version, but in a light enclosure, anyway granting EM shielding up to 100V/m. This model has an embedded rechargeable battery, not user replaceable.

EMI REJECTION

The SOPM306 Series has an high rejection to EM Fields and RF currents and are suitable to be used in harsh EMI environment.

SOPM306	EMI shielded 200V/m up to 18GHz Immune to BCI up to 300mA ESD protected up to 25kV
SOPM306L	EMI shielded 100V/m up to 18GHz Immune to BCI up to 300mA ESD protected up to 25kV

SYSTEM CAPABILITIES

The main systems capabilities are:

- Measure of RF signals with 50 ohm impedance, on three independent channels, simultaneously
- Wide frequency range, from 10 kHz up to 6 GHz in one single band.
- Large amplitude dynamics, from -50dBm up to +15dBm with auto-ranging feature.
- Battery level detection
- internal temperature and humidity detection
- Factory-stored look-up table, for the most accurate amplitude linearity, while setting the working frequency by the user.
- Can be operated either via optic fiber connection with an easy to install USB-Optic Fiber PC Interface, or directly via USB connection. While connected directly via USB to a PC, the internal battery is recharged.
- Reversed Battery Polarity protection and indicator (only for SOPM306 with user-replaceable battery)
- Free GUI (Graphical User Interface) which allows to operate the power meter on Personal Computers with Microsoft ® Windows® 10 Operative System.

BACK-COMPATIBLE

The SOPM306 Series is back compatible with the old SOPM01 and SOPM03 communication protocol.

This means that the old SOPM01 and SOPM03 can be replaced by the new SOPM306 or SOPM306L without changing software commands, keeping all the previous functions but with an extended bandwidth up to 6 GHz.

SOPM306 – RUGGED VERSION

This model is manufactured with unique and proven processing techniques, precisely machined from solid aluminium blocks with no metal extruded materials. Then its electronic design leverage on the decades of experience for ensuring the best available performances and long-lasting product lifetime with MTBF of at least 20 years as proved by large scale projects.

Shielding against EM field is very high, and this unit, while used with optic fiber remote connection, can be employed in harsh EM environment.

QUICK-CHANGE BATTERY

Thanks to a standard battery cell and a quick-change structure, the battery can be easily removed by the operator and replaced with another one. The battery is a standard Lithium cell rechargeable model, and it can be recharged apart with a standard battery charger.

The battery is retained by a EMC-proof seal metallic cap, than can be easily unscrewed using a screwdriver or a small coin.

An USB connector on the SOPM306 front panel also allows to recharge the battery without removing it.

SOPM306L – LIGHT VERSION

The SOPM306L is the cost-effective, ligth version of the SOPM306.

It is contained in a modern-style shielded enclosure, with plastic bumpers.

This model has the same electrical performances of the rugged version, but with light weight and a medium EMI shielding suitable for most of the standard radiated and conducted EMC application, or to be used in any application where an accurate RF power reading is needed.

USB RECHARGE

The SOPM306L has an embedded rechargeable Lithium battery.

The battery can be easily recharged through the front panel Type-C USB connector, using a standard USB cellphone power supply, a battery pack or even directly connecting it to a PC USB port.

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SYSTEM CONFIGURATION

The SOPM306 system is composed by of:

- **SOPM306 (or SOPM306L)** 3-channel power meter unit, battery powered.
- **SOPM306 GUI** software for WINDOWS that allows remote control of the power meter;
- **USB-OFI** USB Optic Fibre Interface, the opto/electrical transducer that plugs into the USB port of the PC, and is compatible with USB 2.0 Standard.
- **3 pcs COAXIAL CABLES** 25cm length, RG 142 type, SMA(m) to N(m) connectors
- **3 pcs SMA 50 ohm termination**
- **FF008** bifibre optical cable 8 meters length, connecting the SOPM306 or SOPM306L unit to the USB-OFI converter. ST connectors, multimode, 62.5/125 µm

Fibre optic cables having different lengths are available upon request.

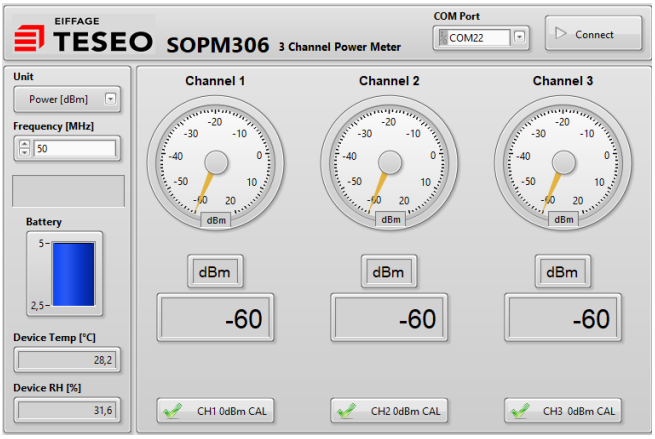
OPTIONS

- **CB12** standard battery charger for two Lithium cells for stand-alone battery recharge (usable only with SOPM306 rugged version)
- Individual certificate of calibration
- **2 PCS FOBC** ST-type optical bulkhead adapters
- **USB Cable** 2 meters length, USB-A to USB-C connectors
- **FFxxx**: Bifibre optical cable, ST connectors, xxx = length in meters, 62.5/125 µm

GUI

A software GUI (Graphical User Interface) is delivered together with the system.

It supports Windows® 10 Operative system.



Using this software the User can easily control and manage all the SOPM306 or SOPM306L functions.

For Users who need to integrate the SOPM306 or SOPM306L use into a measurement system, a complete set of low-level commands can be found in the User's Guide, in order to allow the development of special or dedicated software routines.

GUI software works either with SOPM306 or SOPM306L connected to PC by USB direct connection, or when the fibre optic and USB-OFI interface is used, automatically detected.

USB-OFI – OPTIC FIBRE INTERFACE

Thanks to this small interface the SOPM306 or SOPM306L can be driven via fibre optic, for application where high EM field rejection is required, or even when the distance between the power meter and the reading station is much greater than 2 meters.

Using a glass-type 200/230 µm fibre cable, the power meter can be operated up to 100 meter distance.

The USB-OFI is self-powered through USB connection and compatible with USB 2.0 Standard protocol

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TECHNICAL CHARACTERISTICS

	SOPM306	SOPM306L
Number of channels	3, independent	3, independent
Frequency Bandwidth	10 kHz to 6 GHz	10 kHz to 6 GHz
Amplitude Dynamics	-50 dBm to +15 dBm	-50 dBm to +15 dBm
Damage Level	+28 dBm	+28 dBm
Amplitude Resolution	0.01 dB	0.01 dB
Measuring units	dBm, mV_{RMS}	dBm, mV_{RMS}
Input impedance	50 Ω typ.	50 Ω typ.
Amplitude accuracy (corrected)	±0.1 + 0.01 dB (10 kHz – 2 GHz) ±0.25 + 0.01 dB (2 GHz – 6 GHz)	±0.1 + 0.01 dB (10 kHz – 2 GHz) ±0.25 + 0.01 dB (2 GHz – 6 GHz)
Frequency Response accuracy	±0.25 dB (10 kHz – 2.0 GHz) ±0.6 dB (2.0 GHz – 6.0 GHz)	±0.25 dB (10 kHz – 2.0 GHz) ±0.6 dB (2.0 GHz – 6.0 GHz)
VSWR max	1.06 (f < 100MHz); 1.13 (100MHz-3.0GHz) 1.60 (f > 3.0GHz)	1.06 (f < 100MHz); 1.13 (100MHz-3.0GHz) 1.60 (f > 3.0GHz)
Measuring Speed	20 kSps	20 kSps
Measurement throughput	>10 meas/sec, 3 channels	>10 meas/sec, 3 channels
Temperature Effect	0.2dB max over operation temp. range	0.2dB max over operation temp. range
Input connectors	SMA female	SMA female
Optical connectors	ST type	ST type
USB Connector	Type C	Type C
Fiber cable type	62.5/125 µm glass-type multimode	62.5/125 µm glass-type multimode
Fiber cable length	Up to 100 mt at max data rate	Up to 100 mt at max data rate
Battery type	rechargeable 1 element Li-Ion 18650	rechargeable 1 element Li-Ion 18650
User-Replaceable Battery	Yes	No
Battery charging time	8 hours	8 hours
Battery operating time	8 hours full charge (samples dependent)	8 hours full charge (samples dependent)
Power Supply	5.0 V (supplied from USB) - 500mA max	5.0 V (supplied from USB) - 500mA max
Communication Protocol	USB 2.0 Virtual COM	USB 2.0 Virtual COM
Dimensions & Weight	145 x 100 x 45 mm; 670 gr	145 x 115 x 55 mm; 515 gr
Operating Temperature / Humidity	0 °C to +40 °C; 10% - 90% RH non cond.	0 °C to +40 °C; 10% - 90% RH non cond.
Storage temperature	-20 °C to +70 °C	-20 °C to +70 °C
EMI/EMC	EMI shielded 200V/m up to 18GHz Immune to BCI up to 300mA ESD protected up to 25kV	EMI shielded 100V/m up to 18GHz Immune to BCI up to 300mA ESD protected up to 25kV

USB-OFI

Power Supply	Via USB by Personal Computer USB port
Communication Protocol	USB 2.0
USB Connector	Type C, mini
Optical connectors	ST Type
Dimensions & Weight	70 x 70 x 35 mm; 95 gr
Operating temperature	0 °C to +40 °C
Storage temperature	-20 °C to +70 °C

Technical and aesthetic specifications are subject to change without notice

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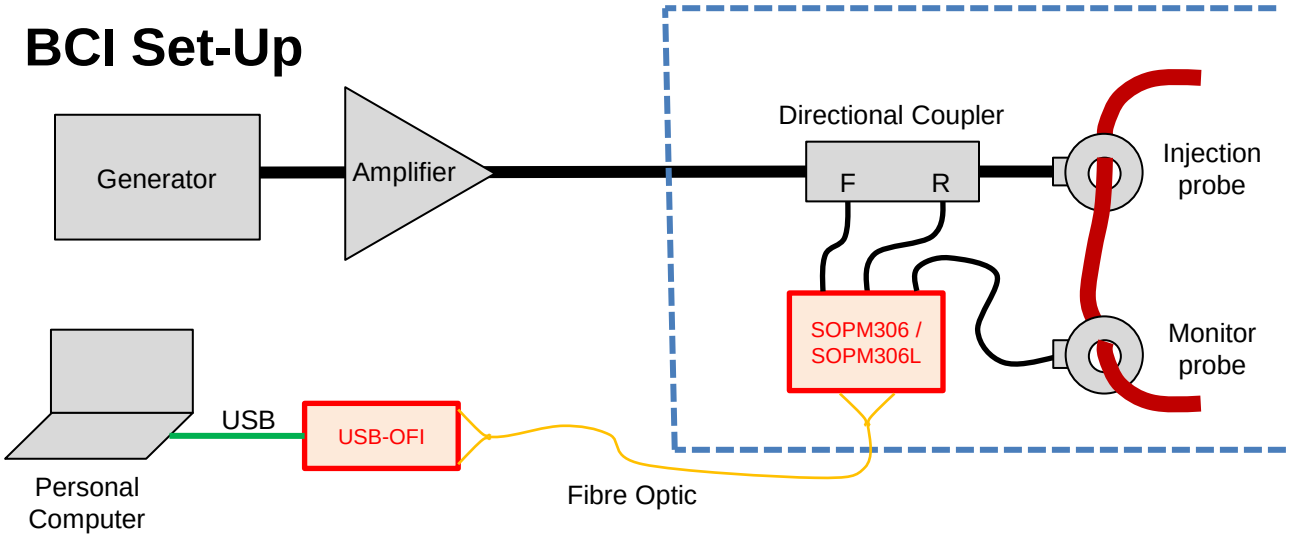
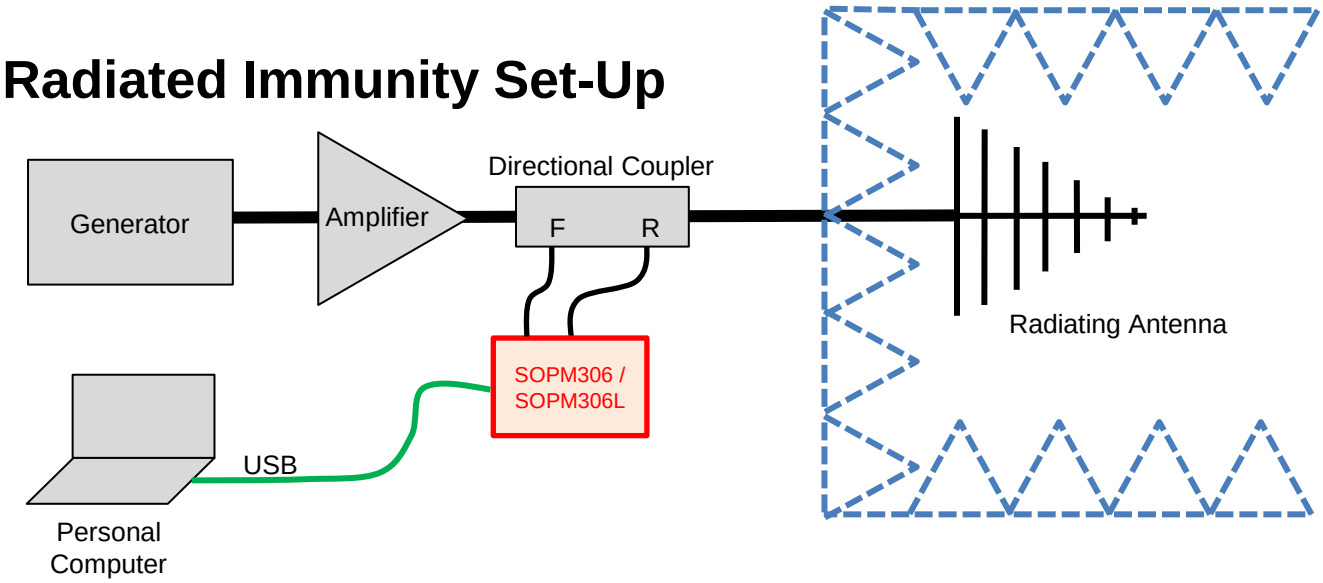
TYPICAL CONFIGURATIONS EXAMPLES

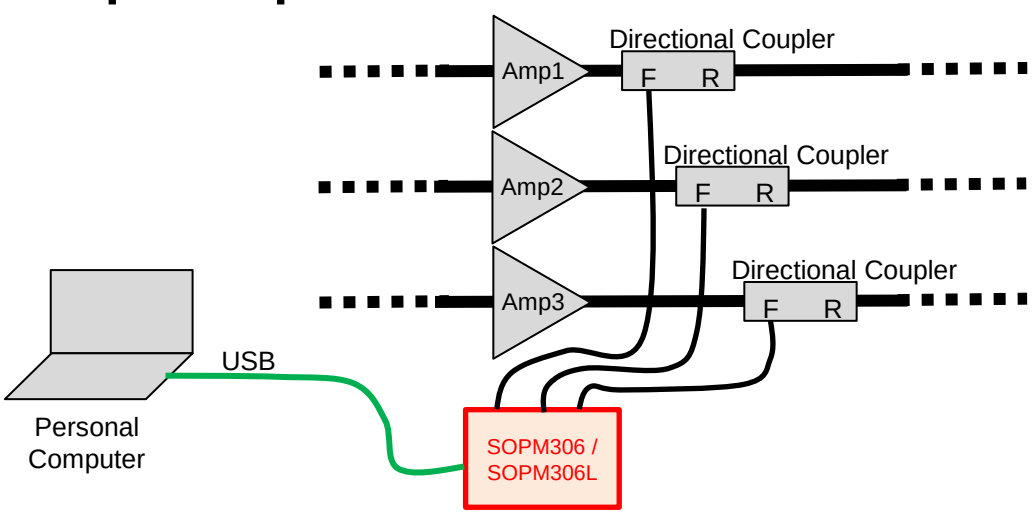
BCI Set-Up



Radiated Immunity Set-Up



Multiple amplifiers control



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