

Ultra Broadband 3.5 GHz and 10 GHz Baluns



The BL3-5G and BL10G baluns can be used to measure differential signals, for instance produced by free-space sensors for electromagnetic fields. The phase and amplitude balances are excellent and the frequency range is extremely wide. This allows faithful measurement of signals like pulses, for instance. The shielding effectiveness of the devices allows measurements in a disturbed environment. As these baluns are passive and all the ports are 50 ohm, they can be used in both directions.

SPECIFICATIONS

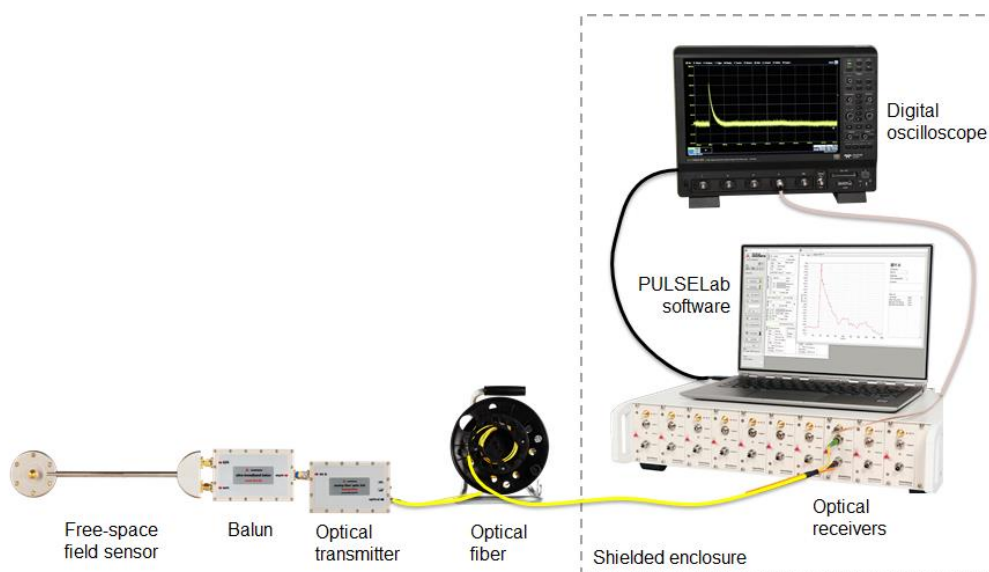
Type	BL3-5G	BL10G
Frequency range (-3 dB)	500 Hz - 3.5 GHz	100 kHz - 10 GHz
Impedance	50 ohm	50 ohm
Insertion loss	6.0 dB - 0 / + 3 dB	6.1 dB - 0 / + 3 dB
Return loss (sym ports)	> 16 dB > 20 dB below 1 GHz	> 10 dB > 20 dB below 100 MHz
Differential amplitude balance	± 0.2 dB	± 2.0 dB ± 0.5 dB below 1 GHz
Differential phase balance	± 2 degrees	< ± 10 degrees < ± 2 degrees below 1 GHz
Common mode rejection	> 30 dB > 55 dB below 100 MHz	> 20 dB > 40 dB below 1 GHz
Maximum input power	100 mW	
Maximum input voltage	500 V (25 ns pulse)	
Connectors	3 x SMA female	
Distance between sym ports	30 mm	
Dimensions	120 x 64 x 36 mm (L x W x H)	
Weight	280 g	400 g
Recommended sensors	SFE1G 1.0 GHz D-dot (electric) SFE3-5G 3.5 GHz D-dot (electric) SFM2G 2.0 GHz B-dot (magnetic)	SFE10G 10 GHz D-dot (electric)

Example of measurement setup

A free-space derivative electromagnetic field sensor delivers two balanced pulse signals to the balun which converts them to an unbalanced signal.

In order to ensure noise-free measurement over long distance, the balun is connected through a fibre optic link to the measurement equipment installed in a shielded enclosure.

Montena PULSELab software application automatically configures the oscilloscope for pulse acquisition, display and storage in the control PC.



Ordering information

TYPE	DESCRIPTION
BL3-5G	Balun for free-space field sensors, 500 Hz - 3.5 GHz, 3 x SMA connectors
BL10G	Balun for free-space field sensors, 100 kHz - 10 GHz, 3 x SMA connectors

Related products / accessories

TYPE	DESCRIPTION
SFE1G	Free-space D-dot field sensor (E-field), Aeq $2 \times 10^{-2} \text{ m}^2$, up to 1 GHz, 2 x SMA connectors
SFE3-5G	Free-space D-dot field sensor (E-field), Aeq $2 \times 10^{-3} \text{ m}^2$, up to 3.5 GHz, 2 x SMA connectors
SFE10G	Free-space D-dot field sensor (E-field), Aeq $2 \times 10^{-4} \text{ m}^2$, up to 10 GHz, 2 x SMA connectors
SFM2G	Free-space B-dot field sensor (B-field), Aeq $2.2 \times 10^{-4} \text{ m}^2$, up to 2 GHz, 2 x SMA connectors
MOL3000	Point-to-point optical link, 80 Hz – 3.5 GHz, fixed 0 dB gain, including one optical transmitter on battery, one optical receiver on battery, two battery chargers and one carrying case
MOL2000T	Point-to-point optical link, 80 Hz – 3.5 GHz, -62dB to +24dB remote controlled gain through USB, including one optical transmitter on battery, one optical receiver on battery, two battery chargers, one USB OTG cable, one 7" Android tablet and one carrying case
MOL2000T-M	Single channel optical link for multilink chassis, 80 Hz – 3.5 GHz, -62dB to +24dB remote controlled gain, including one optical transmitter on battery, one optical plug-in receiver module and one battery charger
PULSELab	Pulse measurement and processing software application, Life time license for installation on one PC