

RadiLink®

The replacement for Coaxial cable in EMC Applications
low loss * high dynamic range * wide band



The RadiLink® is an analog optical fibre link meant to replace coaxial cables in emission and certain immunity test set-ups. Coaxial cables have a high loss, certainly at higher frequencies, are hard to handle and influence chamber characteristics. The RadiLink® brings an end to all these problems. It provides gain instead of loss, has an extremely high dynamic range and has a flat response over a wide frequency range.

Low loss (Gain)

Coaxial cables have a loss, which can be up to 1dB/m depending on the type of cable and the frequency. Especially at higher frequencies and long cable lengths used in large chambers this causes great problems. The RadiLink® provides a small gain, solving loss problems regular coaxial cables cause.

High Dynamic Range

With regular fibre links the dynamic range is too low for use in EMC applications. The RadiLink® provides an unprecedented 80 dB dynamic link suitable for almost all EMC applications. In fact the high dynamic range in combination with the low loss makes most measurement receivers perform much better.

Wide band

Its frequency band from 9 kHz till 3 GHz makes it a perfect product for most EMC measurements.

Cover great distances

Unlike coaxial cables fibre cables provide almost no loss. The RadiLink® has an internal circuit allowing compensation for very long lengths. Standard the system is delivered with a fiber optic cable set of 25 meter, but optionally this can be extended to any length up to several hundreds of meters. This makes it the perfect product for laboratories with large distances between the control room and the antenna in the anechoic chamber.

Emission applications

Emission applications have typically low signal strengths. By applying the receiving side to the antenna the maximum signal is converted in to light and transferred to the measurement receiver without loss.

Versions

The RadiLink® is consisting of a plug-in card for the RadiCentre® single slot (CTR1001S), dual slot (CTR1002A) or 8-slot (CTR1008A) mainframe in combination with a remote link unit. Standard the remote link unit is powered by internal rechargeable batteries, but optionally it can be powered by LASER to enable continuous measurements. Apart from this a special CISPR 25 compliant unit is available that is dedicated for the automotive industry.



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The Standard for Consultancy, (Re)design
and Training in EMC and Product Safety

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Technical Specifications

RadiLink® RF analog fiber optic link

Performance

Frequency Range	: 9 kHz – 3 GHz
Input/Output impedance	: 50 Ohm
Frequency response	: ± 3 dB max. (typical ± 2 dB)
Dynamic range, 2 tone intermodulated	: > 80 dB (typical 85 dB)
Connectors (input and output)	: SMA
Link loss	: +0 dB gain
Noise figure	: Typical 17 dB @ 100 MHz
VSWR (input)	: < 2GHz better than 1:2 / > 2GHz better than 1:2,5
VSWR (output)	: Better than 1:2

Environmental conditions

Temperature range	: 15° to 35° Celsius
Relative humidity	: 10 – 90% (non-condensing)
Compliance	: EMC (EN61326); Low voltage (EN61010), LASER safety (IEC60825)
Immunity to radiated fields	: 200 V/m (10 kHz – 3 GHz)

Power

Supply voltage (remote unit)	: Internal battery pack, 7.2V / 150mAh or with optional LASER Power
Autonomy	: 10 hour battery operation time or continuously with LASER Power Supply
Charge time battery	: 2,5 hours

Mechanical

Dimensions (remote unit)	: 120 mm * 50 mm * 30 mm (L*W*H)
Weight	: Approx. 200 gram

Optical

LASER power (1&2)	: Max. 0,5 Watt output at aperture, 808 nm (only for LASER power supply)
Digital LASER (control unit)	: Max. 2 mW, 1310 nm
Digital LASER (remote unit)	: Max. 2 mW, 1550 nm
Analog LASER (remote unit)	: Max. 5 mW, 1310 nm
Connectors	: FC/PC (LASER power), SC/PC (digital data), E2000/APC7 (analog data)
Standard fiber length	: 25 meter

Safety

LASER product classification	: Class IIIb
Safety measures	: LED indications for LASER ON, Audible warning signals and Redundant closed loop safety system
LASER switch on/off time	: Approx. 10 ms

Models

RLK1003A	: RadiLink® plug-in card for RadiCentre®
RLK1003B	: RadiLink® battery powered remote unit
RLK1003D	: RadiLink® LASER powered remote*

* Requires the LPS1002A DUAL LASER power plug-in card

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More information

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