SMART Coupler

The SMART Coupler combines a specially developed broadband, 130 – 960 MHz, passive coupler with active, diagnostic technology for system monitoring with failure detection and malfunction location capabilities.

The SMART (System Monitor Alarm Report Technology) Passives system is made up of a SMART Gateway at the head-end and SMART Couplers deployed in the DAS. Each coupler reports the Voltage Standing Wave Ratio (VSWR) at each port based on a calibrated CW tone generated by the gateway. By storing and comparing the VSWR at each port over time the SMART system can report failures such as an open or short circuit. The gateway then communicates the alarm via e-mail, SMS, or SNMP and pinpoints the location where the failure occurred.

The real-time monitoring capabilities that the SMART Passives system provides will ensure that Public Safety DAS system integrators, Authorities Having Jurisdiction (AHJ), and building owners can depend on the operation of their critical communication systems.

Preliminary specifications. Pending FCC approval.

Features

- Monitors DAS infrastructure health; including antennas, coaxial cables, and other passive components
- Designed for public safety VHF, UHF, TETRA, 700, 800, 900 MHz bands
- FirstNet Band 14 Ready
- Diagnostics, power, and communications provided over RF coaxial cable by the SMART Gateway
- Alarms communicated via e-mail, SMS, and SNMP
- SMART Gateway dashboard web server compatible with all modern browsers

RF Specifications

Frequency:	130 to 960 MHz
VSWR, all ports:	1.25:1 max.
Power Rating:	50 W avg.
Directivity:	>18 dB
Impedance:	50Ω nominal
Freq. Sensitivity:	+/- 1.7dB 130-180 MHz +/- 1.2dB 180-960 MHz
Environment:	-20°C to +50°C, IP67
Housing Finish:	Red Painted
Connectors:	N (f), Triplate
Weight:	3.1 lbs.

Part Number	Coupling	Dissipative	Coupled
N Type	**Nominal**	**Loss, dB**	**Loss, dB**
SC-06N	6 dB	<1.0	1.26
SC-10N	10 dB	<1.0	0.45
SC-15N	15 dB	<1.0	0.14
SC-20N	20 dB	<1.0	0.04

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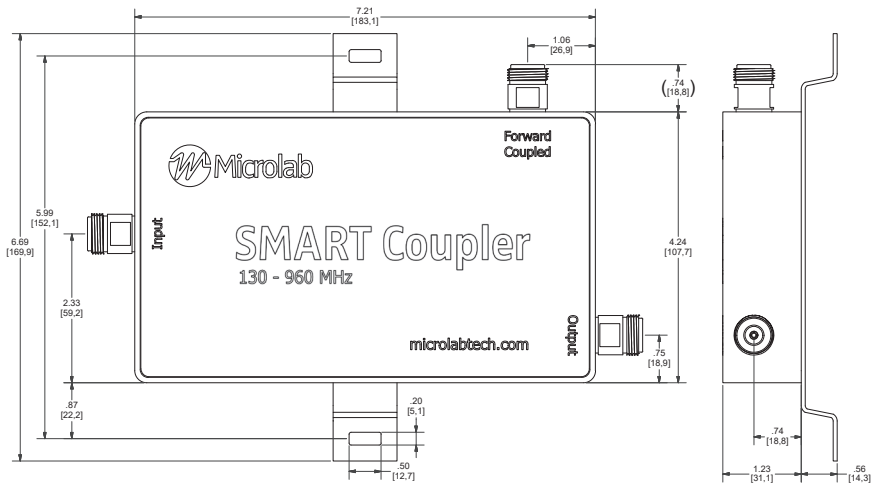
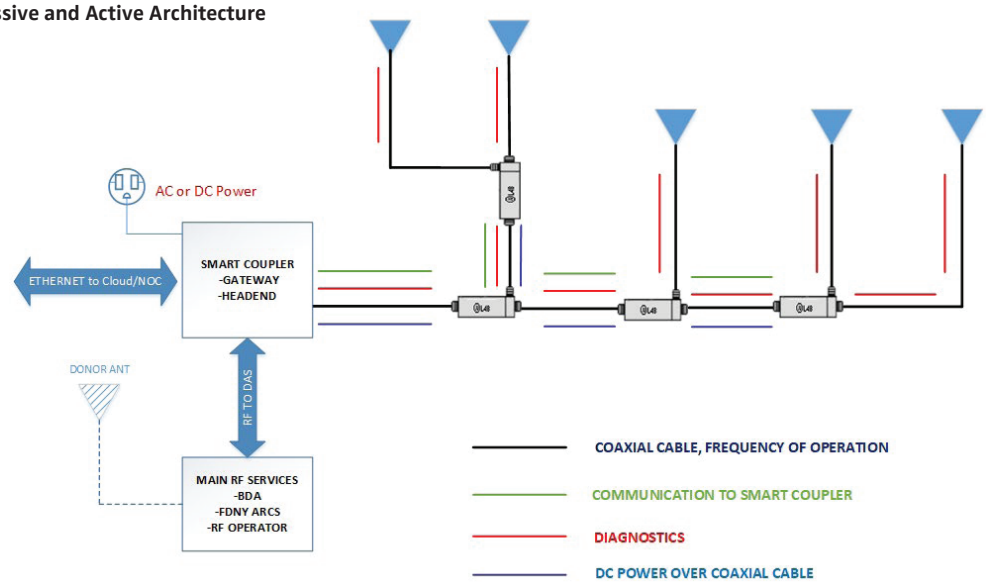
Parameter	Test Conditions	Minimum	Typical	Maximum
Frequency		130MHz		960MHz
Input Power Detector Range		-33 dBm	-	37 dBm
Input Power Detector Accuracy			+/- 3dB	
Monitor Frequency			928MHz	
DC Power*	+24 VDC @ +25deg C		0.3W	
DC Current*	+24 VDC @ +25deg C		0.01A	

* DC power is supplied from the gateway at the system's main RF source

Mechanical Outline with Bracket



Dimensions (L,W,H) (without bracket) – 7.21in (183.1mm), 4.24in (107.7mm), 1.23in (31.1mm)

SMART Coupler Passive and Active Architecture