Microlab

Public Safety | Mission Critical

Public Safety / Critical Communications

Microlab has a long history in Mission Critical applications. We began in 1949 as a supplier of coaxial components for the Defense and Microwave industries. Since the 1990's Microlab has become a leader in the emerging commercial Distributed Antenna System (DAS) Market. Our components are approved and in use world-wide by many of the largest Wireless Service Providers.

Our reputation and commitment to quality and performance is second to none.

Microlab passive components cover all of the Public Safety/Transportation/Utility frequencies with products ranging from DC through 6 GHz and we were one of the first companies to understand and define the impact of PIM on these infrastructure systems. Microlab has built on that experience to introduce a new integrated solution specifically designed to monitor the network status of Public Safety communications systems. This solution features enhanced monitoring and reporting capabilities that are ideal for both new and existing networks.

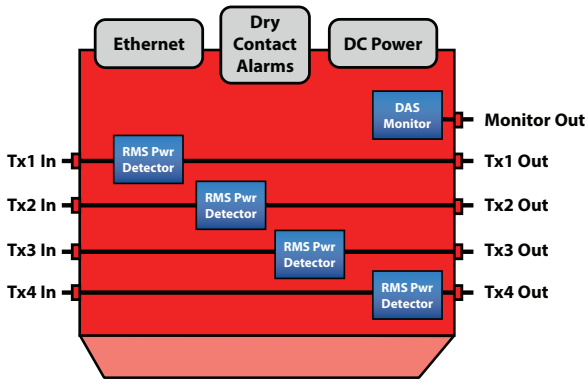
Passive Systems Monitor | PSM04

The Passive System Monitor (PSM04) monitors the DAS downlink signal of Public Safety communications networks with virtually no impact on the network coverage, allowing emergency responders to ensure that their communications networks are operational when they are most needed. This unit can be used with existing DAS installations or combined with Microlab's passive RF components to provide a complete remote signal monitoring solution.

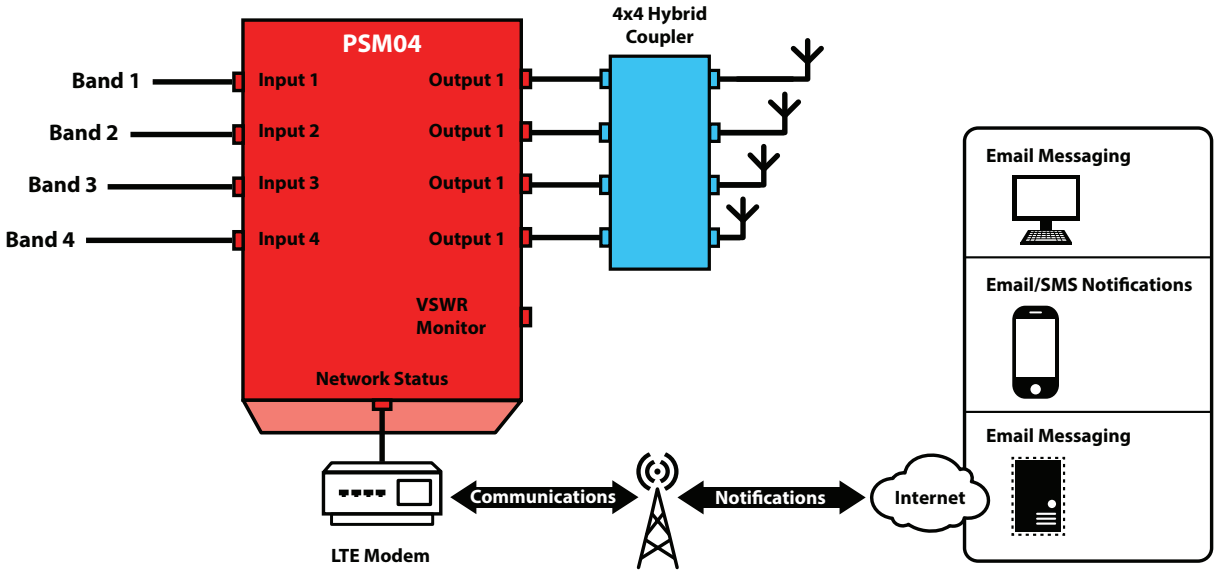
The Microlab PSM04 is a centralized, integrated solution that is easy to install and setup in new or existing networks. The pre-configured system software can be customized to send SMS, text and/or e-mail notification of network outage. The PSM04 allows for the monitoring of multiple RF sources, with up to four channels, independent of the signal type being transmitted. It also monitors the health of the DAS itself. The system includes a modem that provides connection to the unit is via Ethernet IPv4 or IPv6 and provides compliance with the NFPA 72 Chapter 24 coverage requirements.

Features

- Monitors DAS downlink signal
- Up to 4 input channels (100MHz – 2,700MHz)
- 1 output port monitors DAS infrastructure health
- Covers all Public Safety Bands
- IPv4 and IPv6 web interface compatible with any browser
- E-mail, SMS, and SNMP (v1, v2c, and v3)
- Pre-configured modem included
- NEMA4 wall mountable housing
- Safety and Regulatory compliant



Typical Applications



PSM04 Application

In-building coverage for Public Safety wireless systems has always been desirable, but it has recently become a requirement for both new and existing buildings. The National Fire Protection Association (NFPA) and the International Fire Code (IFC) have both produced standards that are the most widely accepted internationally. State, provincial, and local jurisdictions typically adopt standards based on these codes. NFPA 72 Chapter 24 and IFC 510.1 define the standards for enforcement. The 2010 code revisions stipulated in-building testing of the signal levels of Public Safety Two-way radio communications. As of 2015 over half of the US states and many other countries began enforcing these standards on new construction, with implementation on existing structures expanding in 2016.

One aspect of the standard that has been overlooked is the requirement for monitoring these services. Unlike mobile phone coverage, these systems are typically not used on a regular basis. System outages or failures might only be found while an event occurs, which could be catastrophic. The Passive System Monitor (PSM) has been designed to monitor the downlink signal of up to four sources of public safety radio service with virtually no impact on the DAS coverage. The PSM can monitor both conventional and digital signals. So whether a control signal is always present, or the radio source is intermittent, the PSM can be configured to monitor it appropriately.

Since the PSM is monitoring radio signal sources, it does not matter what type of source is used. The source can be a signal booster, a repeater, or a base radio up to 20 watts. And since the PSM has minimal insertion loss (less than 0.25 dB), it can be implemented even in existing installations.

The PSM can be used to generate coverage reports in many different ways. The PSM can be monitored and controlled via Ethernet or SNMP with SMS and/or e-mail notifications available. The system can store network performance metrics available to the user via IPv4, IPv6, SNMP v1, v2c or v3 through a RJ-45 Ethernet port. A pre-configured wireless modem is included for system status reporting.

PSM04 Electrical Specifications

Parameter	Value
Frequency	100MHz - 2700MHz
Insertion Loss (S21)	< 0.25dB
Input & Output Return Loss	> 14dB
RF Input Power	20W (max)
Input Power Detector Range	-50dBm to +43dBm
Input Power Detector Accuracy	±0.5dB typ
Monitor Frequency	600.712MHz
Monitor Port Output Power	-15dBm (max)
Return Loss Monitor Range	0-20dBm
AC Power	8.5W @ 115VAC(typ)

PUBLIC SAFETY COMPONENTS (Available with 7-16 DIN, N, 4.3-10 Connectors)		
Available Product Series	**Features**	**Images**
SPLITTER (REACTIVE/WILKINSON)		
• Dx-08 • Dx-41 • Dx-49	• 138 - 960 MHz (Up to 6 GHz) • 10 to 500W • Ways: 2,3,4 • Very Low Insertion Loss • >20 dB isolation (Wilkinson)	
TAPPER		
• DN-x1 • DN-x4	• 137 to 960 MHz (Up to 6 Ghz) • Splits: 2:1 to 1000:1 • Equal / unequal • 500 W average • Minimal RF insertion loss	
DIRECTIONAL COUPLER		
• CK-20 • CK-70 • CK-80	• 80 - 520 MHz (Up to 2.7GHz) • Coupling: 3 to 50 dB • Directivity up to 25 dB • 100 to 200W • Low VSWR	
HYBRID COMBINER/MATRICES		
• CA-92 • CA-94 • CA-99 • CM-91 • CM-98 • CM-99	• 128 to 960 MHz • 80 to 150W • Ports: 2x2, 3x3, 4x4 • 30 dB isolation • Low VSWR	
DIPLEXER FILTER		
• BK-04 • BK-05 • BK-12 • BK-24 • BK-26 • BK-27 • BK-62 • BK-67 • BK-68	• 50 MHz to 2,700 MHz • Minimal Loss • Up to 50 dB isolation • 10 to 200W • Very low PIM	
ATTENUATOR/TERMINATOR		
• TA series • TB series • TK-200 • TK-21 • TK-23 • TK-25 • TK-27 • TK-28 • AM/N/P/Q/R • AR-R • AS-AU • AV-60F	• DC to 3 GHz • 1W to 200W average • High Peak Power • Excellent VSWR • Low PIM Models Available	
DC BLOCK		
• HR-20 • HR-21/22 • HR-25 • HR-28	• 250 to 2,700 MHz • 250 to 500W • 3 kV High Voltage Rating • Minimal Loss	
Antenna		
• YA-17NF	• 380 MHz to 6.0 GHz • 60W • For Indoor Applications • Low PIM • Small Size and Light Weight	
	Jumper Cables	
• JA-10MN - N(m-m) • JA-10MX - 4.3-10(m-m) • JA-10MD - 7-16(m-m) • JA-10MY - 4.3-10(m)-7-16(m) • JA-10MA - 7-16(m)-N(m) • JA-10MZ - 4.3-10(m)-N(m)	• DC to 6.0 GHz • 100W • 0.5 to 4 meters length • Multiple Connector Options • Low PIM