



### Overview:

- ◆ 2 or 4 inputs (100 - 2700 MHz)
- ◆ Covers all Public Safety and Commercial Bands
- ◆ Monitors downlink signal
- ◆ Monitors DAS Infrastructure
- ◆ Web server compatible with any browser
- ◆ E-mail, SMS & SNMP (v1, v2c, and v3)
- ◆ NEMA4 wall mountable chassis
- ◆ Safety and Regulatory compliant

Model #	Description
PSM02	2-port Signal Monitor
PSM04	4-port Signal Monitor
TBD	AC Power Adapter
TBD	4G Wireless modem
TBD	Monthly monitoring/notification
Call*	RF Jumper Cables
Call*	RJ-45 Cable

In-building coverage for Public Safety wireless systems has always been desirable, but has recently become a requirement for many buildings, both new and existing. The National Fire Protection Association (NFPA) and the International Fire Code (IFC) have both defined building safety codes that are widely accepted. State, Provincial and Local jurisdictions typically adopt standards based on these codes. The 2010 code revisions stipulated in-building testing of signal levels for Public Safety Two-way radio communications. As of 2015 over half of the US, and many other countries have begun enforcing these standards on new construction, with implementation on existing structures beginning in the future.

**NFPA 72 Chapter 24 and IFC 510.1 define the standards for enforcement.**

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. The time to find out that the coverage solution has failed is not while an event is happening. The PSM02/PSM04 has been designed to monitor the downlink signal of up to four families of public safety frequencies with virtually no impact on the coverage of the DAS. This means that the PSM02/PSM04 can be implemented even on existing installations.

Of course, a monitoring system is of little use if no one is notified of potential problems. The PSM02/PSM04 provides simple e-mail or SMS notification in addition to SNMP v1, v2c or v3. This can be delivered via connection to a LAN or an optional monthly service can be provided to connect wirelessly. In addition, daily notification of the functioning of the DAS is sent and a monthly report is compiled that can be presented to the building owner or local jurisdiction to demonstrate operational compliance. Connection to the unit is via ethernet IPV4 or IPV6. An optional wireless modem is also available.

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**Table 1 - Electrical Specifications**

PARAMETER	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM
Frequency (Note 1)	-	100 MHz	-	2700 MHz
Insertion Loss	-	0.3 dB	-	1 dB
Flatness	Within any communication band	-	-	0.2 dB
Input & Output Return Loss	-	15 dB	17d B	-
RF Input Power (Note 2)	-	-	-	20 Watts (+43 dBm)
Input Power Detector Range	-	-20 dBm	-	+43 dBm
Input Power Detector Accuracy	-	-	±0.5 dB	±1 dB
Monitor Frequency (Note 3)	-	-	600.712 MHz	-
Monitor Port Output Power	-	-	-23 dBm	-20 dBm
Return Loss Monitor Range (Note 4)	±1 dB accuracy	-20 dB	-	0 dB
	±2 dB accuracy	-25 dB	-	-20 dB
DC Power	+24 to +48 VDC	-	18 W	25.5 W
Ethernet speed	-	-	10/100Mbps	-

Note 1) Frequency can be extended to 60 MHz upon request

Note 2) Higher power options are available

Note 3) Other frequencies available upon request

Note 4) The PSM is not designed as a NIST calibrated return loss monitor. This feature is used for DAS health monitoring where a large change in value can indicate a broken connection or failed component.

**Table 2 - Absolute Maximum Ratings**

Parameter	Specification
Downlink RF Input Power	20W (+43dBm) Average
Operational Temperature (Note 1)	0°C to +50°C
Storage Temperature	-20°C to +70°C
DC Voltage (both ports)	+56VDC

Note 1) Extended temperature range available

**Table 3 - Mechanical Specifications**

Parameter	Specification
Dimensions (not including connectors)	12 H x 12 W x 4.5 D (in) 305 x 305 x 114 (mm)
Weight	18.6 lbs (8.45 kgs)
RF Interface	N-female (8)
Ethernet ports	RJ-45 (3)
Ground lug	1/4-20 screw

Note 1) All ports rated for NEMA 4/IP66 or better.

**Figure 1 - PSM04 Block Diagram**

