



ASM-002

## **SERVICE BULLETIN ASM-002**

**Product: Antenna System Monitor**

**Subject: Enhanced Directional Coupler**

### Description

This Service Bulletin announces the release of a new directional coupler for use with the 380-520MHz, 746-870MHz and 870-960MHz Antenna System Monitor (ASM) series products.

This new design provides enhanced measurement performance by reducing the range of VSWR error that can exist in the measurement of an antenna system installation. This error is due to the random phase angle occurrence of the Forward and Reverse powers that appear at the coupler's installation location in the antenna feed line, and vary depending on the specific frequencies operating at that site.

This error phenomenon exists in most antenna system measurement equipment, and is NOT unique to the ASM.



**New UHF Directional Coupler**



**New 7/8/900MHz Directional Coupler**

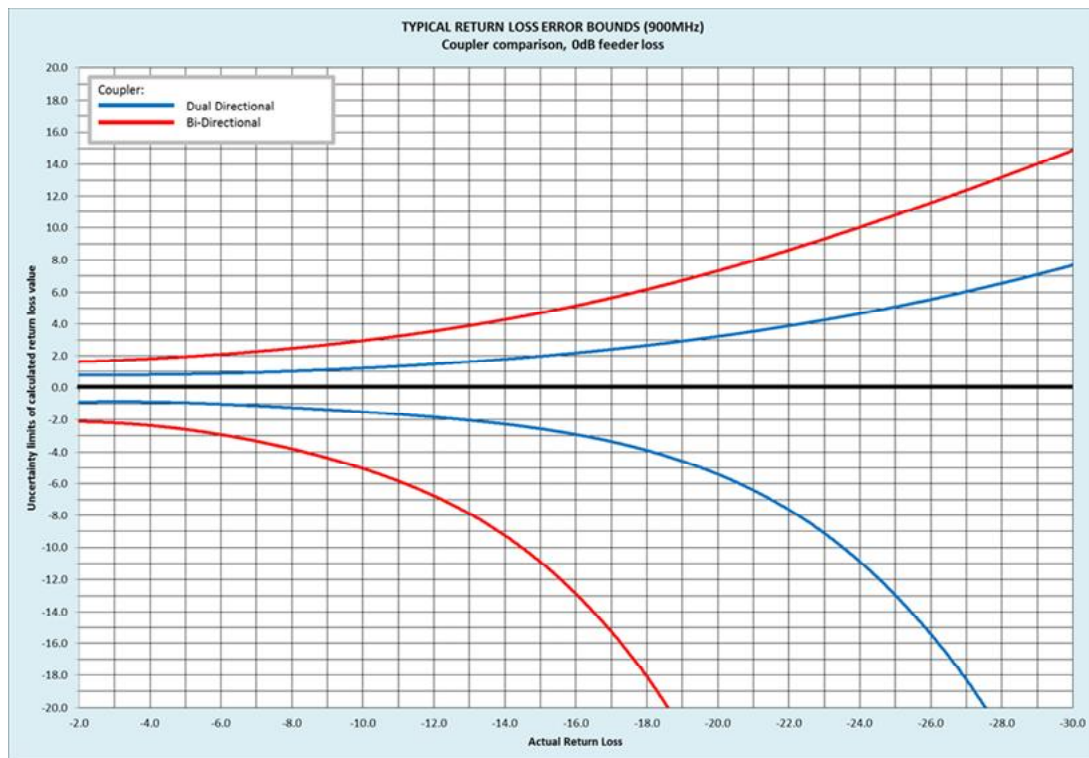
## Product Enhancement

The new coupler design provides enhanced directivity and sampling port isolation, resulting in less interaction between the Forward and Reflected RF powers at the coupler installation location - reducing the range of mathematical error that can occur.

## Performance Enhancement

These new coupler models enable the ASM to provide improved representation of an antenna system's Return Loss (VSWR) performance - enhancing the ASM's ability to more accurately quantify a "performance impacting change" within that antenna system.

The following graph shows the error bounds that may be experienced when measuring Return Loss in an example antenna network at the "combiner end" of the antenna feeder. These error bounds are similar to most other test equipment's measurement methodologies.



**Typical Error Bounds for Return Loss Measurement of an antenna feeder cable**

The red lines show the error bounds performance of the original coupler design, and the blue lines show the enhanced performance capabilities of the new coupler design.

## Installation

The new models have different connector locations and direction orientations for the FWD and REV sampling ports, but they remain in a 1RU 19in rack mount configuration. They can be directly installed into existing racking layouts utilizing the existing cabling if cable lengths permit, and if re-routed appropriately.

### Equipment Models Effected

Effective immediately, the following Legacy Models are replaced by the listed New Models.

Frequency Range	Legacy Model	New Model
	RFI	RFI
380-550 MHz	SP3855-2440-DIN	SP3855-4440-DFF
746-960 MHz	SP7496-2440-DIN	SP7496-4440-DFF

### Exchange Program

Customers may exchange existing couplers for the newer design for an Exchange Fee of US\$98 per unit. Please contact your nearest RFI Sales Office to discuss the Exchange Program offer. Orders must be placed by August 30, 2012 to take advantage of this program.

### Future Impacts on Product Availability

The legacy models listed in the table above are discontinued from production and no longer available for purchase – effective immediately. All future shipments of UHF and 7/8/900MHz Antenna System Monitor (ASM) models will ship from RFI with the new design couplers included.

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