SPIRENT WIRELESS CHANNEL EMULATOR

MB5 MIMO Beamforming Test System

The MB5 system is built around Spirent’s VR5, the world’s most advanced platform for creating realistic RF environments for testing MIMO and beamforming systems. Now the accuracy and ease of use brought to the industry by the VR5 is expanded to ease the testing of MIMO beamforming systems (from 2x2 to 8x4) which require accurate and quick phase calibration.

APPLICATIONS

- Base Station and Mobile Device Testing
- Fundamental Research
- Development and Design Verification

Testing MIMO Beamforming products (e.g. TD-LTE, 802.11ac WiFi, WiMAX) present a series of unique challenges, both in the development and testing phases of a product’s lifecycle. The MB5 makes it easy to replicate the complete real-world spatial channel conditions of even the most complex environments, making it possible to isolate performance issues early in research, development or design verification.

Automated phase calibration ensures the accuracy required when testing these complex receiver designs. Spirent’s years of experience with geometric channel models have enabled the industry’s most accurate creation of ITU-R M.2135 models, Spatial Channel Models (SCM), Spatial Channel Models Extended (SCME), and WINNER I and II models.

BENEFITS

- **Simplified testing** – The system keeps testing simple, preventing setup errors, no matter complex the forward-looking technologies you’re working with

- **Spirent brings the real world into your lab** – With the ability to accurately reproduce even the most complex and phase-dependent 8x4 beamforming, the system brings real-world RF scenarios to your testing

- **Maximum effectiveness of your resources** – Even the most complicated test cases can be set up and run, quickly and correctly, via a very intuitive user interface
COMPLEX TESTING MADE SIMPLE & EFFICIENT

Spirent’s years of experience have taught us that, when testing is too complex, errors are made, anomalies go unnoticed and testing is sometimes left unfinished because of the time required to set it up. Even worse, a series of tests may be completed before someone notices a setup error.

In the case of MIMO beamforming technology, phase calibration takes on new importance in terms of channel emulation. A seemingly slight inaccuracy in phase relationships can spell the difference between valid testing and wildly irrelevant and misleading results.

With this in mind, Spirent developed hardware to automate phase calibration to the tight tolerances required for MIMO beamforming testing. For users who have not yet upgraded to VR5, Spirent offers the MB5 bundle that includes everything you’ll need to begin beamforming testing in your lab. Where phase calibration is required, the system automatically engages a user-supplied network analyzer.

Please see the main VR5 data sheet for more information on the VR5 platform.

TECHNICAL SPECIFICATIONS

Note
The MB5 supports any configuration supported by the VR5 platform. Specifications not outlined in this data sheet are available in the VR5 data sheet.

RF Configurations
8×2 or 8×4 MIMO, beamforming and MIMO beamforming
Uni-directional or bi-directional

Output Power
Maximum: -30 dBm
Minimum: -110 dBm

Phase Calibration
Fully automated
Calibration time: < 10 minutes per frequency
Error (typical): less than ±5° within 20 MHz bandwidth

Phase Aligned Over Operations
Change of frequency within calibrated frequency set
Change of power levels
Change of carrier to noise ratio
Change of channel models

ORDERING INFORMATION

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<td>Bidirectional 8x2 system with automated phase calibration</td>
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<td>VR5-SYS-B8X4AC</td>
<td>Bidirectional 8x4 system with automated phase calibration</td>
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Please contact your regional Spirent sales representative for detailed ordering information.

SPIRENT GLOBAL SERVICES

Spirent Global Services provides a variety of professional services, support services and education services — all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at www.spirent.com/gs or contact your Spirent sales representative.