Spirent **Vertex® Channel Emulator**

Technical Specifications

The Spirent Vertex® Channel Emulator is a versatile platform that offers unprecedented scalability while supporting emulation of a large number of channel models. The chassis is built to support a broad range of applications that require varying channel densities, from basic applications like two-channel SISO to complex, high channel density applications like MIMO OTA, MIMO beamforming and carrier aggregation needed for 5G scenarios.

Technical Specifications	
RF configuration	• With bidirectional module: from SISO up to 8x8 MIMO with bidirectional fading • With unidirectional module: up to 2x32 and dual 2x16 • Multiple instruments: Two instruments can be fully integrated into a system; additional instruments can be synchronized for more complex connection setups.
RF inputs	Up to 16
RF outputs	Up to 32
Digital channels	Up to 256 (40MHz or 100MHz bandwidth); up to 64 (200MHz bandwidth)
Bandwidth	40MHz, 100MHz, 200MHz
Frequency range	30MHz to 5925MHz
RF input	Input level range: -50 to +15dBm Level resolution: 0.1dB Damage level: +33dBm (Peak)
RF output level	Min/max range: -110 to -10dBm (RMS) Resolution: 0.1dB
Input and output power meters	Modes: • Continuous • RF burst-triggering for gated input signals
Residual EVM	-40dB typical
Residual noise	Better than -165dBm/Hz at a set output level of -45dBm
RF port VSWR	1.5:1
Independent paths	Up to 24 paths per digital channel
Delay	0 to 4000µs, 0.1ns resolution
Relative path loss	0 to 40dB
Dynamic channel parameters	• Sliding delay (moving propagation) • Birth-death delay • 3GPP High-Speed Train (HST) profiles log normal (shadow fading)

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About Spirent Communications

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks.

We help bring clarity to increasingly complex technological and business challenges.

Spirent's customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled.

For more information, visit: www.spirent.com

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Dynamic Environment Emulation (DEE)	Controllable parameters: State duration, channel output level, AWGN on/off, C/N, path on/off, relative power and delay, LOS AoA, K factor, frequency shift, Doppler velocity, MIMO branch phase, power imbalance, and correlation Channel model update rate: 100 times per second Start Method: Triggered, free play Play Method: Run for N loops, wrap around
Standards-based models	LTE, Wi-Fi (802.11a/b/g, 802.11n, 802.11 ac), IMT-A, WiMAX, UMTS, CDMA2000®, HSPA, GSM, SCM/SCME (ITU-R M.2135), WINNER, Butler
Custom models	Easy-to-use interface allows the user to create custom channel models or edit any of the standard channel models
Fading mode	Classical, GCM, MIMO OTA
Real-time fading	Types: Rayleigh, Rician, pure Doppler, frequency shift, phase shift Fading Doppler: Up to 12000Hz Repetition interval: >7 days Relative phase: 0-360 degrees, 0.1 degree resolution Rician K factor: -30 to +30dB Level crossing rate (LCR) accuracy: < ±2.5% deviation from theoretical LCR curve of the simulated vehicle velocity Fading power spectrum: classical 6dB, flat, classical 3dB, rounded, rounded 12dB, bell Correlation: programmable complex correlation between paths
IQ-playback fading	Supports IQ playback fading
AWGN	C/N Ratio: -40 to +40dB Accuracy: ±0.1dB Bandwidth: up to 200MHz Settable modes: C/N, Eb/No, N
Control interface	PC-based GUI Remote programming through ethernet
Other	10MHz internal reference accuracy: 1ppm

AMERICAS 1-800-SPIRENT
+1-800-774-7368
sales@spirent.com

US Government & Defense
info@spirentfederal.com
spirentfederal.com

EUROPE AND THE MIDDLE EAST
+44 (0) 1293 767979
emeainfo@spirent.com

ASIA AND THE PACIFIC
+86-10-8518-2539
salesasia@spirent.com

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