



Discover the Experience

Scalable Tool for Radio Channel Emulation EB PropSim F8



Foresight into the wireless experience by mastering the radio channel

As wireless systems evolve towards higher data rates, air interfaces require wider bandwidths and better spectral efficiency than before.

Advanced technologies such as MIMO and beamforming are becoming crucial elements for the performance of advanced wireless systems. Laboratory testing of devices, applications and networks emulating real air interface conditions, in addition to using standardized radio channel models for validating the basic functionality, is a must for ensuring that the performance expectations of the end-user will be met.

EB Prosim F8 is the answer for such radio channel emulation needs and testing requirements set by all existing and any future wireless radio systems and standards.

EB Prosim F8 is the only channel emulator on the market that is designed to support any existing 3GPP/3GPP2 WCDMA, GSM, TD-SCDMA, EV-DO / CDMA2000, TETRA, IS-54, 802.11n 3GPP LTE, WiMAX and Wi-Fi radio interfaces and future wireless system air interfaces. It offers flexibility and reliability for system and network level testing, especially in systems requiring excellent RF signal fidelity for higher order modulations and wider bandwidths up to 125 MHz with MIMO.

EB Prosim F8 has the widest RF signal dynamic range, best channel linearity, highest number of physical and logical fading channels, and the cleanest spectrum available on the market. Designed as a future-proof solution, it meets and exceeds the performance requirements for testing wireless technologies for 4G and beyond.

EB Prosim F8 in a nutshell

- Unique performance and feature set
- Best RF performance and accuracy available in market
- Up to 8 fading channels with up to 32 logical fading channels in a single unit
- Multiple units can be synchronized to work as one emulator
- 125MHz bandwidth with up to bi-directional 4x4, uni-direct 4x8, 2x16 MIMO
- 70 MHz bandwidth with up to multiple 2x2, 4x4, 8x8, 2X16, 4X16 MIMO



EB Prosim F8

EB's technology ensures the optimal performance of the most crucial area of wireless systems and devices - the air interface. EB is the global technology leader in test tools for measuring, modelling and emulating the radio channel environments of today and tomorrow. By using EB Prosim F8 different user groups can secure performance targets, quality and an enriching end-user experience through the product development life-cycle with their wireless devices and systems.

Channel modelling

▶ Fading profiles	Constant, Rayleigh, Rice, Nakagami, Lognormal, Suzuki, Pure, Doppler, Fiat, Rounded, Gaussian, Jakes, Butterworth, Rice, Arbitrary (with external tools)
▶ Standard channel models	GSM, DCS, TETRA, ITU 3G, JTC, 3GPP conformance, 3GPP deployment, 3GPP2 (IS-54, IS-95), 3GPP SCM/SCME MIMO, 3GPP LTE, WiMAX
▶ Delay profiles	Constant, sinusoidal sliding delay, linear sliding delay, 3GPP birth-death
▶ Internal interference generator	AWGN, CW
▶ Channel configuration topologies	SISO, MISO, SIMO, MIMO up to bi-directional 4x4 MIMO inside one emulator
▶ Built in channel modelling tool for user defined channel models	
▶ Import of user defined channel models	
▶ Playback emulation of measured radio channels	
▶ 802.11n channel modelling tool	
▶ 3GPP SCM/SCME channel modelling tool	
▶ Emulation of spatial channels	
▶ Channel modelling tool kit for external PC	

Platform features

▶ Emulation channel configurations (one unit)	1 to 8
▶ Integrated RF local oscillator (optional)	1 to 4
▶ RF platform frequency range	350MHz-3GHz / 350MHz-6GHz
▶ RF bandwidth	70MHz / 125MHz
▶ Number of fading paths per emulation channel	24 / 48
▶ Number of logical fading channels per emulation channel	2 / 4
▶ Vehicle speed	Up to 12 500 km/h
▶ Emulation of shadowing (slow fading)	With 100dB dynamics Flexible control thru pre-defined and user defined profiles
▶ Internal channel combining and splitting	
▶ Automatic input level setting	
▶ Built in input power measurement	
▶ Full ATE control	
▶ Interfacing unit	

RF performance

▶ RF input levels	-30...0dBm (Crest Factor 6dB) for full reference (SNR >60dB) Input signal level up to 30dB below nominal to SNR >30dB
▶ Adjustable channel gain dynamics	0..100 dB, with 0.1dB steps
▶ Path delay resolution	0,1ns
▶ Path delay accuracy	+/- 1ns
▶ Propagation delay	Up to 3000us
▶ Noise floor	-167 dBm/Hz (with output gain setting -20dB)
▶ Linearity EVM performance	Typical value < - 50 dB
▶ In band spurious SFDR	Typical value 60dB
▶ Out band spurious	Typically -45 dBc (to user signal) max. -60 dBm
▶ Output accuracy	0.5 dB (with onsite alignment +/- 0.2 dB)
▶ Output gain flatness	1 dB @70MHz, 3 dB @125MHz



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