SCE-C4202

Wireless Channel Emulator



The SCE-C4202 is a two-channel wireless channel emulator for GEO and LEO satellite links, fixed base stations and mobile stations. It applies delay, Doppler, gain, AWGN and multipath fading to an RF signal in real time, and is operated from a 7-inch touch GUI with a built-in spectrum view.

200 – 2100 MHz RF range, up to 600 MHz per channel	**16 µs – 500 ms** Delay, 1 ns resolution	**±20 dB** Gain adjustment	**2 CH** Independent channels

FEATURES

- Fixed, Satellite LEO, Profile and Fading Channel modes
- Delay 16 µs to 500 ms in 1 ns steps
- Frequency offset ±10 MHz in 1 Hz steps
- Profile-driven dynamic delay, Doppler and gain (up to 1024 lines)
- SYNC RUN and LOOP execution of profiles
- Rayleigh / Rician fading with up to 24 taps
- Real-time spectrum and Delay / FO / Gain curves

APPLICATIONS

- GEO satellite link emulation
- LEO satellite pass emulation
- Fixed base station link emulation
- Mobile station channel emulation
- Multipath fading tests
- Uplink / downlink emulation with two channels

SCE-C4202

WIRELESS CHANNEL EMULATOR

SPECIFICATIONS

RF	
Frequency range (input / output)	200 to 2100 MHz, up to 600 MHz bandwidth per channel
RF input level	0 dBm max
RF output level	−10 dBm max
Channels	2 independent channels (CH1, CH2)
Channel Emulation	
Delay	16 μs to 500 ms, 1 ns resolution
Frequency offset	±10 MHz, 1 Hz resolution
Gain	−20 to +20 dB (fixed, and profile-based dynamic control)
AWGN	−150 to −100 dBm/Hz
Emulation Modes	
Satellite LEO	Altitude typically 300 to 2000 km; service angle 10° to 80°; Doppler reference frequency 100 MHz to 40 GHz
Profile	CSV files for Delay / FO / Gain, 1 to 1024 lines, SYNC RUN and LOOP
Fading Channel	Rayleigh / Rician, up to 24 taps (delay, gain, max Doppler per tap)
Interfaces	
Display	7-inch touch screen
Ports	Ethernet (admin), USB-A, USB-C (admin), Optical (admin), Ref 10 MHz Clock In
Power and Mechanical	
Input voltage	110/220 VAC (AC 115 to 230 V)
Power consumption	150 W max
Dimensions (W × H × D)	476.0 × 132.0 × 546.5 mm
Weight	6.5 kg
Mounting	19-inch standard rack
Package and Warranty	
Included	SCE-C4202 unit, power cable, Ethernet cable, user manual (1 set each)
Warranty	1 year from the date of purchase

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