

# TRANSCOM INSTRUMENTS

## Product Brochure

Transcom Instruments  
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# Pathrrot X2 Channel Emulator

## Overview

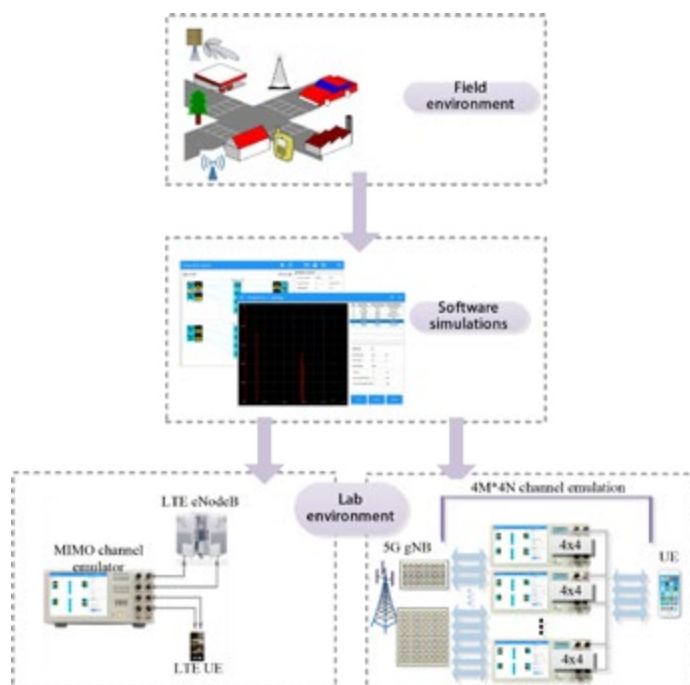


Pathrrot X2 channel emulator is the latest wireless measurement instrument launched by Transcom Instruments, which is oriented to the emulation for 4G/5G channel environment. It widely supports all kinds of MIMO channel models and has excellent RF performance, rich channel models, and friendly user experience etc. As a substitute of traditional field testing, the channel emulator can easily simulate the real world wireless propagation in the laboratory (i.e., virtual field test) by using real-time emulation capabilities of the instrument.

Pathrrot X2 provides a very effective means for the performance test of base station and user terminals, and it also builds a convenient test environment for the R&D of technologies and commercial products.

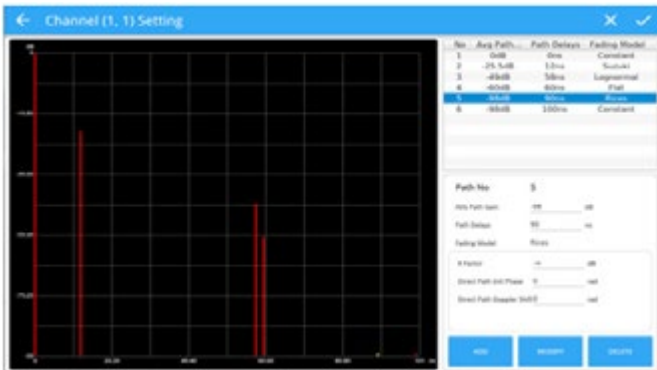
## Key Facts

Pathrrot X2 channel emulator is a high-end wireless communication test instrument. It supports various types of MIMO channel models and it is featured by excellent RF performance, rich models, and friendly user experience. Customers can carry out simulation tests of various field environments in the laboratory.



Setup of test systems with the channel emulator

# Innovative Features & Benefits



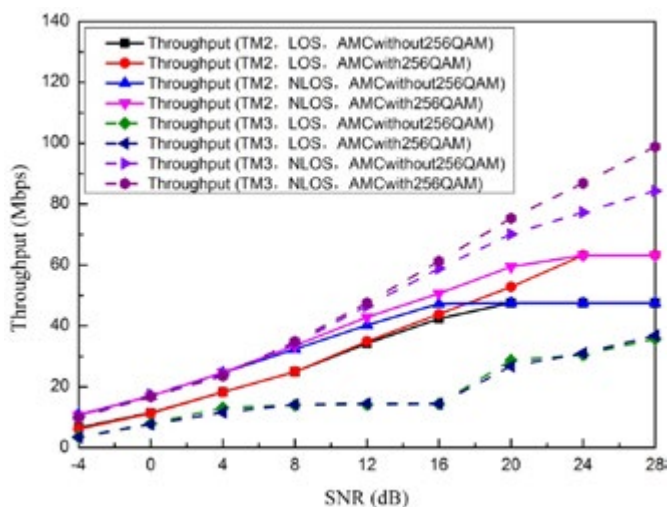
- Use the graphic user interface (GUI), support touch screen and provide friendly interaction experience

- Excellent RF performance, continuous coverage of wide frequency bands & large dynamic range of input/output power

- Include complex channel models for broadband wireless communications
- Flexible channel configurations, satisfying diverse needs of customers
- Have an open interface, and support user-defined channel models

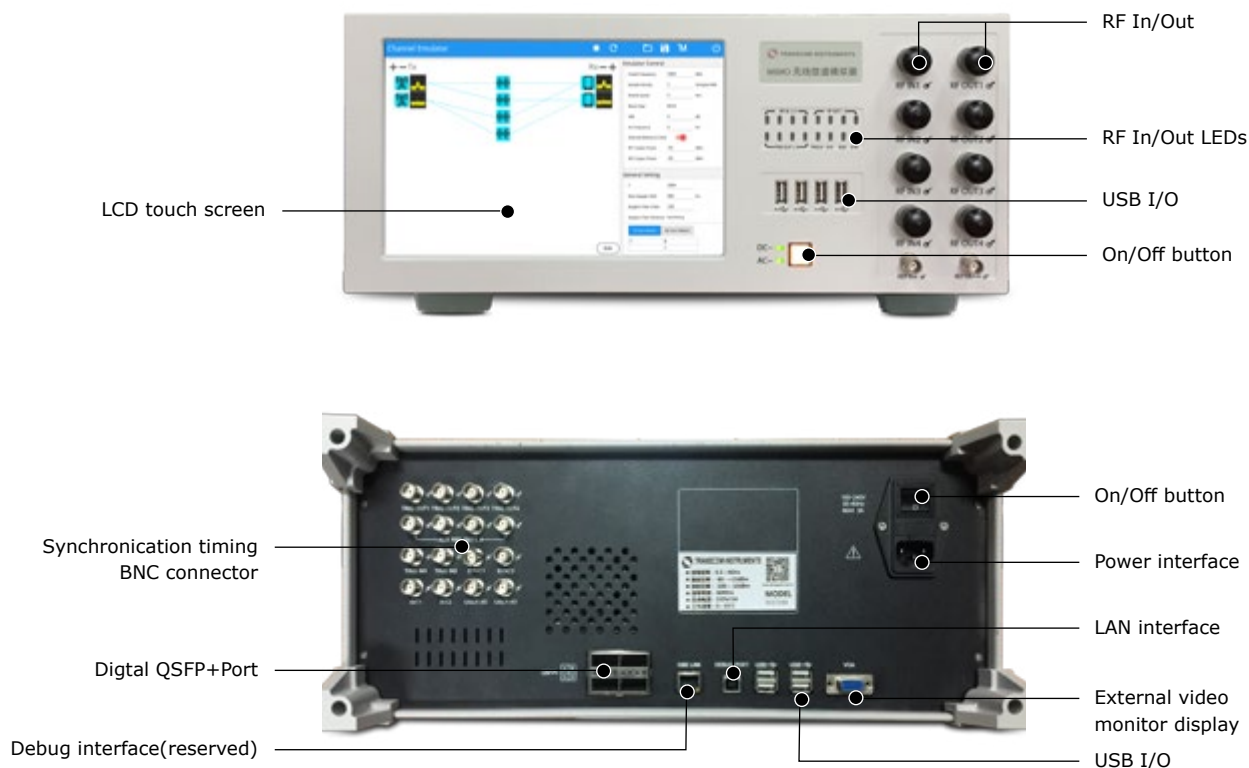


# Solution Highlights



- **End-to-end performance tests of wireless device and network infrastructure.** The test environment can be built indoors to vividly simulate outdoor channel characteristics instead of field testing.
- **Quality tests of wireless devices and network infrastructures.** Fully demonstrate the influence of channels on the receiving and transmitting performance of terminals or base station equipment, and add reference specifications to improve equipment quality.
- **Algorithm verification for wireless channel models.** Provide an integrated software and hardware platform to verify the model algorithm.
- **Simulate wireless channel characteristics.** Include path loss, multipath fading, delay spread, Doppler shift, polarization, correlation and spatial parameters, which have significant influence on the performance of MIMO system.
- **Simulate the vivid interference scenario.** Support the generation of AWGN and single-tone interference signals.

# Control Elements



# Specifications

General Specifications	
RF interface channel configurations	2 or 4 (8, 16 optional)
MIMO emulation	2x2 (4x2, 4x4, 8x4, 8x8 optional)
Number of paths per channel	Up to 48
Path delay resolution	Minimum 10ns
Noise Type	AWGN, CW
Doppler shift	Maximum 10kHz
Maximum time delay	30us
Bi-directional RF signal	Supported
Duplex mode	TDD (FDD optional)
Input power measurement	Supported
Input power meter modes	Instantaneous power detection, average power detection, frame power detection
Integrated phase and amplitude calibration	Supported
RF Specifications	
Frequency range	500MHz~4GHz (30MHz~6GHz optional)
RF channel signal bandwidth	60 MHz (100 MHz optional)
RF input power range	-50 ~ +15 dBm (-60 ~ +15dBm optional)
RF output power range	-100 ~ -10 dBm (-110~ -10dBm optional) , resolution 0.1 dB
Baseband Specifications	
ADC width	14 bits
DAC width	16 bits
Digital baseband clock rate	122.88MHz
Channel Modeling	
Fading profiles	Constant, Rayleigh, Rice, Normal, Suzuki, pure Doppler, Jakes
Fading profiles (optional)	Nakagami, Flat, Gauss, Butterworth
Standard channel models (optional)	GSM, DCS, TETRA, ITU 3G, JTC, 3GPP standard, 3GPP extended, 3GPP2 (IS-54, IS-95), 3GPP LTE MIMO, indoor hotspot, WiMAX MIMO, MIMO Kronecker, SCM/SCME, IMT-A, EPA, EVA
User-defined channel model loading	Supported

# Ordering List

Basic Platform	
X2-M2	2 RF ports, SISO channels configurable
X2-M4	4 RF ports, SISO channels and 2x2 MIMO channels configurable
X2-M8	8 RF ports, SISO channels, 2x2, 4x2 and 4x4 MIMO channels configurable
Frequency Range	
X2-F4	500MHz ~ 4GHz
X2-F6	30MHz ~ 6GHz
Bandwidth	
X2-B40	40MHz
X2-B60	60MHz
X2-B100	100MHz

*Keep innovating for excellence!*

## About us

Transcom Instrument Co., Ltd. founded in 2005 and headquartered in Shanghai, is a leading manufacturer and provider of RF and wireless communication testing instruments and overall solutions in China. Based on its independent brands and a wide range of core patented technologies, Transcom became national high-tech enterprise with independent intelligent property rights and has been listed into Shanghai Enterprise Recognition Award for High Growth SMEs in Technology.

Transcom is backed by a experienced and dedicated research team in mobile communication, radio frequency and microwave, and network optimization testing instrument. Through "Industry-University-Research" cooperation with universities, Transcom founded Southeast University-Transcom Electronic Measurement Technology Center at Southeast University to further ensure technology and talent reserve, and secure future visionary and sustainable technology development.

Transcom's product portfolios focus 4 areas: cellular network critical communication planning/maintenance/optimization, Manufacturing testing solution, educational instrument/equipment, spectrum monitoring sensor for system integration.



ISO14001



ISO9001

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Company Profile