

**Aumictech**

Test & measurement · bought, sold, repaired, calibrated

Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight S8825A Digital Communication Analyzer

Agilent Keysight S8825A Satellite and Aerospace Channel Emulation Toolset The Keysight S8825A Satellite and Aerospace Channel Emulation Toolset combines PROPSIM channel-emulator hardware with the Aerospace Channel Emulation (ACE) engine. OEM S8825A brochure tables list up to 64 RF channels, 1200 MHz bandwidth, 1000 ms delay, and plus or minus 1.5 MHz Doppler for 5G NTN and aerospace links. Laboratory emulation of satellite, airborne, and 5G non-terrestrial-network radio links including mixed cellular plus long-delay aerospace paths. The Keysight S8825A Satellite and Aerospace Channel Emulation Toolset combines PROPSIM channel-emulator hardware with the Aerospace Channel Emulation (ACE) engine. OEM S8825A brochure tables list up to 64 RF channels, 1200 MHz bandwidth, 1000 ms delay, and plus or minus 1.5 MHz Doppler for 5G NTN and aerospace links. Laboratory emulation of satellite, airborne, and 5G non-terrestrial-network radio links including mixed cellular plus long-delay aerospace paths. ACE engine for orbital delay, Doppler, and phase-noise impairments

**MODEL****Agilent / Keysight
S8825A****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****S8825A****LISTING**<https://aumictechlabs.com/products/s8825a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight S8825A Satellite and Aerospace Channel Emulation Toolset is a sophisticated solution designed for validating the performance of satellite, aerospace, and airborne radio systems under realistic and complex 3D propagation conditions. This toolset is built upon Keysight's PROPSIM channel emulator platforms, specifically the F8800A F64 or F8820A FS16 models, and integrates an aerospace channel emulation engine (ACE). It is engineered to address the evolving demands of modern space applications, including wider signal bandwidths, higher frequencies, and advanced technologies like beamforming. The S8825A is particularly relevant for testing 5G Non-Terrestrial Networks (NTN), enabling the emulation of both terrestrial and space-based links within a single unit.

Technical Specifications

Core Functionality:

- Channel Emulation:** Provides realistic emulation of complex 3D wireless propagation conditions for satellite, aerospace, and airborne radio links.
- 5G NTN Support:** Specifically designed to support testing of 5G Non-Terrestrial Networks, facilitating the validation of satellite connections from mobile phones and end-to-end system testing.
- High Velocity Environments:** Capable of creating test environments that emulate high Doppler frequencies and support long delays, which are critical for high-velocity aerospace and satellite link testing.
- Mixed-Use Scenarios:** Enables the mixed utilization of cellular links with long-delay aerospace links, allowing for complex test scenarios including 5G NTN.
- Emulation Capabilities:**
 - Propagation Delay:** Supports propagation delay emulation of up to 1000 ms.
 - Doppler Effect:** Emulates Doppler phenomena for each channel's path independently, maintaining phase continuity during dynamic delay variations. Doppler can be defined using linear, sinusoidal, or triangular functions.
 - Dynamic Multipath:** Offers dynamic multipath propagation capabilities, including dynamic mobile speed, multipath profile, and range delay.
 - Path Loss and Link Power Variations:** High dynamic range enables realistic path loss and link power variations.
 - Store-and-Forward Links:** Emulates store-and-forward type links.
 - Non-Linearities:** Emulates power amplifier non-linearity and phase noise of satellite hardware.
 - Interference:** Can include additive white Gaussian noise (AWGN) interference sources for each channel independently.
- RF Characteristics:**
 - RF Channel Count:** Supports up to 64 RF channels.
 - Signal Bandwidth:** Offers up to 1200 MHz signal bandwidth. The PROPSIM platforms supporting the S8825A offer signal bandwidths of 200 MHz / 1.6 GHz.
 - Frequency Range:** The core RF signal frequency range is 30 MHz to 6 GHz, with support for systems operating up to 100 GHz through external RF down/up conversion hardware. The supporting PROPSIM platforms have frequency ranges of 3 MHz - 7.25 GHz and 7.25 GHz - 18 GHz. The M1742A K-band Transceiver extends support to the 10 to 32 GHz range.
- Interfaces:**
 - Channel Modeling Interface:** Features a channel modeling interface.
 - Data Import:** Supports importing customer-specific radio channel and location parameters, including satellite orbital information or airborne route information, via an open text-based file format. It also supports importing data from third-party scenario tools and Keysight's .aso file format.
 - Connectivity:** Enables interconnecting networks for full end-to-end system testing.
- Software and Control:**
 - Channel Studio:** Channel Studio software allows for the creation of customer-specific channel models with dynamic modeling capabilities.
 - Scenario Creation:** Users can create test scenarios using PROPSIM tools or import them from third-party tools. The ASO editor supports the creation of dynamic multipath scenarios and allows linking multiple radios into one scenario.
 - Visualization:** PROPSIM aerospace channel emulation engine enables the creation and illustration of user-defined emulation models, visualizing links between transceivers and receivers.
- Physical * Modular Design:** Combines a terrestrial ch

S8825A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Satellite and aerospace channel emulation toolset
Series Family	Keysight S8825A with PROPSIM ACE
Hardware Platforms	F8820A PROPSIM FS16 and F8800A PROPSIM F64
FS16 Radio Channels	2 to 16 channels
F64 Radio Channels	8 to 64 channels
FS16 Digital Terrestrial Channels	256 terrestrial
F64 Digital Terrestrial Channels	1024 terrestrial
FS16 Aerospace Digital Channels	16 aerospace
F64 Aerospace Digital Channels	64 aerospace
EVM	less than minus 50 dB
Doppler Shift	plus or minus 1.5 MHz
Maximum Delay	1000 ms (1 s)
Maximum Bandwidth	1200 MHz (1000 MHz ACE)
RF Frequency Range	3 MHz to 6 GHz (30 MHz to 6 GHz ACE)
External Conversion Class	systems to 100 GHz supported with external RF down/up conversion
Internal Interference	AWGN and CW
Channel Capacity Class	up to 64 RF channels
Propagation Delay Emulation	up to 1000 ms
Signal Bandwidth Class	up to 1200 MHz
ACE Frequency Window	30 MHz to 6 GHz ACE
Use Cases	air-to-air and air-to-ground links; 5G NTN
Impairment Class	high Doppler, long delay, high dynamic range, PA impairments, phase noise
Control Interface	channel modeling interface on PROPSIM plus ACE
Cellular Mix	mixed-use of cellular links with long-delay aerospace links
Lab Role	controlled laboratory alternative to on-orbit or flight test

PARAMETER	VALUE
Target Radios	aerospace, satellite, and airborne radio systems
Bandwidth	1200 MHz (1000 MHz ACE)

S8825A Specifications

PARAMETER	VALUE
AWGN and CW internal interferers	External up/down conversion path to 100 GHz class systems
Technical Specifications	Instrument Type: Satellite and aerospace channel emulation toolset
Notes	Numeric rows from Keysight S8825A Satellite and Aerospace Channel Emulation Toolset brochure PROPSIM FS16/F64 comparison table.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
Specifications	
PARAMETER	VALUE
Instrument Type	Satellite and aerospace channel emulation toolset
Series Family	Keysight S8825A with PROPSIM ACE
Hardware Platforms	F8820A PROPSIM FS16 and F8800A PROPSIM F64
FS16 Radio Channels	2 to 16 channels
F64 Radio Channels	8 to 64 channels
FS16 Digital Terrestrial Channels	256 terrestrial
F64 Digital Terrestrial Channels	1024 terrestrial
FS16 Aerospace Digital Channels	16 aerospace
F64 Aerospace Digital Channels	64 aerospace
EVM	less than minus 50 dB
Doppler Shift	plus or minus 1.5 MHz
Maximum Delay	1000 ms (1 s)
Maximum Bandwidth	1200 MHz (1000 MHz ACE)
RF Frequency Range	3 MHz to 6 GHz (30 MHz to 6 GHz ACE)
External Conversion Class	systems to 100 GHz supported with external RF down/up conversion
Internal Interference	AWGN and CW
Channel Capacity Class	up to 64 RF channels
Propagation Delay Emulation	up to 1000 ms
Signal Bandwidth Class	up to 1200 MHz
ACE Frequency Window	30 MHz to 6 GHz ACE
Use Cases	air-to-air and air-to-ground links; 5G NTN
Impairment Class	high Doppler, long delay, high dynamic range, PA impairments, phase noise
Control Interface	channel modeling interface on PROPSIM plus ACE
Cellular Mix	mixed-use of cellular links with long-delay aerospace links
Lab Role	controlled laboratory alternative to on-orbit or flight test

PARAMETER	VALUE
Target Radios	aerospace, satellite, and airborne radio systems
Notes Numeric rows from Keysight S8825A Satellite and Aerospace Channel Emulation Toolset brochure PROPSIM FS16/F64 comparison table.	

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

788 S 500 E, Pleasant Grove, UT 84062
sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

NIST-traceable calibration · SAM registered ·
30-day returns
NAICS 423690 · 811210 · 541380
Generated August 14, 2026

Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.