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Data Sheet

August 13, 2026

ROHDE & SCHWARZ

Rohde and Schwarz ESAI Test Receiver, 9 kHz to 2.5 GHz

Rohde & Schwarz ESAI EMI Test Receiver 9 kHz to 2.5 GHz class The R&S ESAI is the lower frequency member of the ESAI/ESBI/ESMI EMI test receiver family, combining a CISPR 16-1 / VDE 0876 compliant test receiver with a high end spectrum analyzer. This listing is the 9 kHz to 2.5 GHz class commercial EMI range (family documentation also specifies 20 Hz lower edge for military work). Siblings: ESBI 20 Hz to 5 GHz, ESMI 20 Hz to 26.5 GHz (to 110 GHz with external mixers). Preselection, switchable preamp, parallel detectors, tracking generator, and pulse plus sine calibration sources are family features. The R&S ESAI is the lower frequency member of the ESAI/ESBI/ESMI EMI test receiver family, combining a CISPR 16-1 / VDE 0876 compliant test receiver with a high end spectrum analyzer. This listing is the 9 kHz to 2.5 GHz class commercial EMI range (family documentation also specifies 20 Hz lower edge for military work). Siblings: ESBI 20 Hz to 5 GHz, ESMI 20 Hz to 26.5 GHz (to 110 GHz with external mixers). Preselection, switchable preamp, parallel detectors, tracking generator, and pulse plus sine calibration sources are family features. CISPR, VDE, FCC, EN, VCCI commercial compliance; MIL-STD, VG, DEF-STAN, BS, DO-160, GAM-EG13 military EMI; lab spectrum analysis; conducted and radiated disturbance.



MODEL

Rohde & Schwarz ESAI

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

ESAI

LISTING

<https://aumictechlabs.com/products/esai-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Rohde & Schwarz ESA1 is a dual-function EMI test receiver and spectrum analyzer engineered for electromagnetic compatibility (EMC) testing from 9 kHz to 3 GHz. It delivers full compliance with CISPR 16-1-1 standards and supports certification testing across CISPR, EN, ETS, FCC, ANSI, VCCI, and VDE requirements. The instrument combines precision test receiver selectivity with spectrum analyzer measurement speed, enabling both pre-compliance diagnostics during development and full-compliance validation in laboratory environments.

Technical Specifications

- Frequency Range: 9 kHz to 3 GHz
- Receiver Mode Bandwidths (–6 dB): 200 Hz, 9 kHz, 120 kHz, 1 MHz
- Analyzer Mode Bandwidths (–3 dB): 10 Hz to 10 MHz in 1/3/10 sequence
- Digital Filters: Approximately 40 channel filters
- Detectors: Peak, Quasi-Peak, Average, RMS, CISPR Average, CISPR RMS
- Displayed Average Noise Level (DANL): Typically –145 dBm at 10 Hz RBW; optionally –153 dBm with Preselector/Pre-amplifier B2
- Phase Noise: –113 dBc (1 Hz) at 10 kHz offset; –125 dBc (1 Hz) at 1 MHz offset
- Intermodulation-Free Range: 93 dB typical (with preamplifier); 100 dB cited for TOI point
- Preamplifier: Integrated 20 dB, switchable on/off
- Preselection: 11 filters with fixed and tuned bandwidths to 3 GHz; always active in receiver mode, switchable in analyzer mode
- Measurement Uncertainty: Typically less than 1 dB

Key Features

- Operates as both full-compliance EMI receiver and general-purpose spectrum analyzer
- CISPR bandwidths coupled to frequency range with optional disabling
- Low phase noise and wide intermodulation-free range minimize measurement artifacts
- Integrated preamplifier reduces noise figure
- Active preselection in receiver mode ensures filter selectivity

Typical Applications

- EMC pre-compliance and full-compliance measurements
- Certification testing per international and national EMI standards
- Spectral analysis and ACPR measurements in laboratory settings
- Product development diagnostic analysis

Compatibility & Integration

Designed for certification compliance across CISPR, EN, ETS, FCC, ANSI, VCCI, and VDE standards. Optional Preselector/Pre-amplifier B2 extends measurement capability.

Features & description

From manufacturer datasheet

Built-in AM/FM demodulation for aural monitoring

Tracking generator for gain/loss and filter response Pulse calibration source plus sine cal source Automatic overload detector in the signal path Technical Specifications Model: ESAI Manufacturer: Rohde & Schwarz Instrument Type: EMI Test Receiver / Spectrum Analyzer Alias: R&S ESAI; ESAI EMI Test Receiver Frequency Range This Listing: 9 kHz to 2.5 GHz (commercial EMI) Family Lower Edge: 20 Hz (MIL/analyzer path) Sibling ESBI Range: 20 Hz to 5 GHz Sibling ESMI Range: 20 Hz to 26.5 GHz (110 GHz with mixers) Standards Commercial: CISPR, VDE, FCC, EN, VCCI Standards Military: MIL-STD, VG, DEF-STAN, BS, DO 160, GAM-EG13 CISPR Compliance: CISPR 16-1 (08.93) VDE Compliance: VDE 0876 CISPR Bandwidths Class: 200 Hz, 9 kHz, 120 kHz (impulse) Detectors: peak, min peak, average, RMS, quasi-peak (parallel) Input 2 Pulse Range: 20 Hz to 200 MHz Preselection: refined tracking/fixed filters (family) Preamplifier: low noise, switchable after preselector RF Attenuation: wide range, small steps (family) Tracking Generator: included (family) Sine Calibration Source: built in Pulse Calibration Source: built in for CISPR weighting check Overload Detector: automatic in signal path Audio Demodulators: AM and FM

ESAI Characteristics / Specifications

PARAMETER	VALUE
Model	ESAI
Manufacturer	Rohde & Schwarz
Instrument Type	EMI Test Receiver / Spectrum Analyzer
Alias	R&S ESAI; ESAI EMI Test Receiver
Frequency Range This Listing	9 kHz to 2.5 GHz (commercial EMI)
Family Lower Edge	20 Hz (MIL/analyzer path)
Sibling ESBI Range	20 Hz to 5 GHz
Sibling ESMI Range	20 Hz to 26.5 GHz (110 GHz with mixers)
Standards Commercial	CISPR, VDE, FCC, EN, VCCI
Standards Military	MIL-STD, VG, DEF-STAN, BS, DO 160, GAM-EG13
CISPR Compliance	CISPR 16-1 (08.93)
VDE Compliance	VDE 0876
CISPR Bandwidths Class	200 Hz, 9 kHz, 120 kHz (impulse)
Detectors	peak, min peak, average, RMS, quasi-peak (parallel)
Input 2 Pulse Range	20 Hz to 200 MHz
Preselection	refined tracking/fixed filters (family)
Preamplifier	low noise, switchable after preselector
RF Attenuation	wide range, small steps (family)
Tracking Generator	included (family)
Sine Calibration Source	built in
Pulse Calibration Source	built in for CISPR weighting check
Overload Detector	automatic in signal path
Audio Demodulators	AM and FM
Spectrum Analyzer Use	general lab SA as well as EMI
Dynamic Range Intent	CISPR pulse weighting in all CISPR bands

PARAMETER	VALUE
Remote	IEC/IEEE class (family FSE based receivers)
Display	large CRT/analyzer display (FSE generation)
Frequency Span Family ESMI Text	10 Hz to 2 / 5.2 / 26.5 GHz class
Resolution Class Family Texts	1 Hz
Second Input Purpose	high energy pulses without damaging input 1
Image IF Rejection	preselection provides out of band immunity
Typical Later ESIB Attenuator	0 to 70 dB in 10 dB steps (successor family, confirm on ESAI)
Typical Later ESIB Input 1 Connector	N female 50 ohm (confirm on ESAI) Notes Specs from R&S ESAI/ESBI/ESMI family descriptions. Exact ESAI stop frequency varies by unit (listings 1.8 GHz, 2.5 GHz, or 3 GHz class); this file follows the 9 kHz to 2.5 GHz listing and the documented 20 Hz family start. Do not use ESIB/ESR numeric DANL tables as ESAI limits. Read the type plate and confirm preselector, tracking generator, and input 2.
Attenuation	wide range, small steps (family)

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	
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Notes

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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

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NIST-traceable calibration · SAM registered ·
30-day returns
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.