

# Signal Sources

## Option 12 SINAD Measurement (2023A/B, 2025)



Option 12 further enhances the versatility of the 2023A/B, 2025 range providing a complete receiver sensitivity test solution in an economical, space saving package.

- High performance SINAD measurement
- 50 dB measurement range
- Accurate DSP based CMES, CCITT P53 and un-weighted filters
- RS-232 and GPIB control
- User selectable measurement averaging
- Simple menu set up
- Over/under range indication

*Option 12 provides the user with a high performance SINAD measurement function which can be used for receiver testing in development, production and servicing.*

*The SINAD function can be used independently of the signal source as a genuine second instrument. Alternatively the SINAD measurement can be operated with the source in manual or automatic control of RF level mode.*

### Simple Operation

Set up of the measurement selections from a utility menu ensures simple and fast operation.

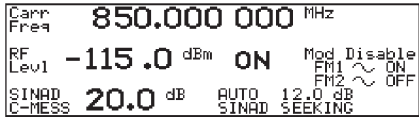
```
■ Util 49 --- SINAD Measurement
■ Average! 22 --- (1-127)
■ Weighting Filter: 2 - C-MESS
  0: Unweighted 1: CCITT 2: C-MESS
■ SINAD: 1 - Enabled
  0: Disable 1: Enable 2: AUTO
```

2023A/B and 2025 simultaneously displays the signal RF source parameters and the SINAD measurement result. The user is able to manually control the source amplitude and frequency and see at a glance the resulting SINAD. Input level over range and under range warning messages confirm valid measurement values.

```
Carr Freq 850.000 000 MHz
RF Lev1 -115.0 dBm ON FM1 ~ ON FM2 ~ OFF
SINAD 20.0 dB
C-MESS
```

### Automatic RF Level Coupled Operation

An automatic RF level adjustment mode to achieve a user defined SINAD value for a receiver under test is available for even simpler bench operation. In this mode the RF level is automatically reduced from a pre-set level until the measured SINAD value matches the user input value.



### Weighting Filters

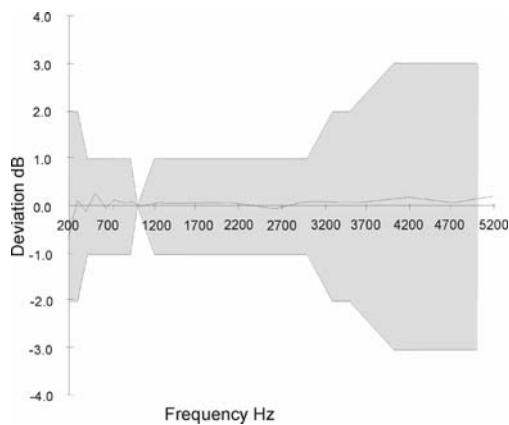
SINAD measurements can be made un-weighted or through accurate and stable DSP based CMESSAGE or CCITT P53 psophometric weighting filters.

### Result Averaging

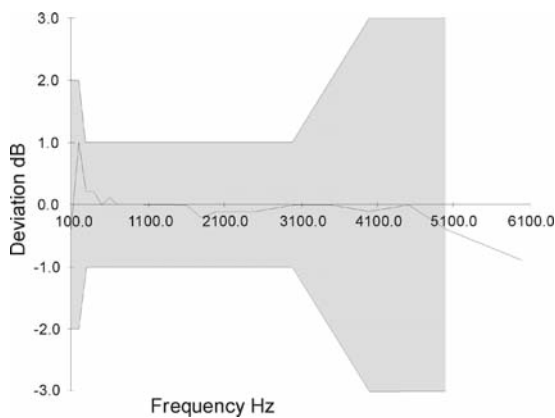
A user selectable result averaging function in the range 1-127 can be applied to the displayed SINAD result.

### Instrument Stores

The extensive volatile and non-volatile storage facilities on 2023A/B and 2025 are available for use with Option 12 SINAD to simplify repetitive test sequences for manual or GPIB operation.



Filter response compared to CMESSAGE standard error band



Filter response compared to CCITT standard error band

## SPECIFICATION

### GENERAL DESCRIPTION

This option provides an independent high performance SINAD measurement function featuring 50 dB SINAD measurement range, with automatic over/under range indication, user selectable weighting filters and result averaging. An automatic generator level seek mode from a user SINAD input value is included. Available with all existing 2023A/B and 2025 family options.

### MEASUREMENT RANGE

50 dB

### ACCURACY

$\pm 0.5$  dB

### DISPLAY

Resolution

0.01 dB

Averaging

User selectable result averaging from

1-127 measurements - Default setting is 5 measurements.

Over/under range indication

Automatic display warning when input signal level is out of range.

### INPUT SIGNAL

Weighting Filters

Selectable CMESS, CCITT P53 weighted measurement filters or un-weighted measurement (50 Hz - 7.0 kHz 3 dB bandwidth)

Modulation Frequency

1 kHz  $\pm 20$  Hz notch filter range

Sensitivity

50 mV RMS - 3.0 V RMS (250 mV RMS for 50 dB SINAD). Max. safe input level  $\pm 15$  V

Input impedance

100 k $\Omega$  (nominal)

Input Connectivity

SINAD baseband input is via front panel Ext Mod Input connector, (MOD I/O connector when option 7 or 11 are fitted).

## **VERSIONS AND ACCESSORIES**

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*When ordering please quote the full ordering number information.*

### **Ordering Numbers**

#### **Versions**

2023A	9 kHz to 1.2 GHz Signal Generator
2023B	9 kHz to 2.05 GHz Signal Generator
2025	9 kHz to 2.51 GHz Signal Generator

#### **Options**

Option 1	No attenuator (not available with option 3, 7 or 11)
Option 2	DC operation
Option 3	High power (not available with option 1, 7 or 11)
Option 4	High stability frequency standard
Option 5	Rear panel outputs
Option 7	Fast Pulse Modulator (not available with option 1, 3 or 11)
Option 10	Mod input sensitivity 1 V Pk
Option 11	Fast Pulse Modulator with High Power (not available with options 1,3 or 7)
Option 12	SINAD Measurement

#### **Supplied with**

	AC power supply lead
46882/373	Operating Manual
43130/119	DC supply lead (option 2 only)

#### **Accessories**

46880/088	Service manual
46884/792	Front bracket handle mounting kit
46662/601	Transit case
46662/602	Soft carry case
46884/650	RS-232 cable, 9-way female to 9-way female, 1.5m
43129/189	1m GPIB lead
59000/317	VISA Plug 'n' Play driver software (also available as a download from <a href="http://www.ifrsys.com">www.ifrsys.com</a> )

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