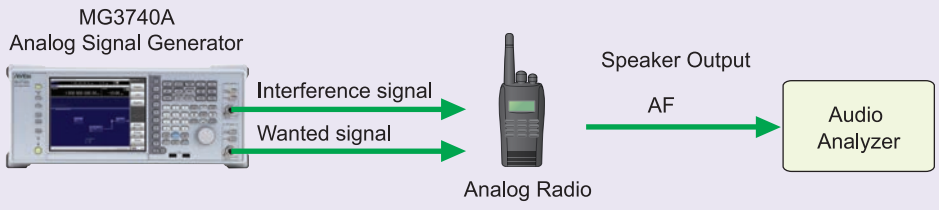
Leaflet

Good RF Performance, Low Cost and Low Workload

MG3740A
Analog Signal Generator
100 kHz to 2.7 GHz/4.0 GHz/6.0 GHz

For Analog Radio Rx Characteristics Tests



Setup for analog radio Rx characteristics tests

The MG3740A outputs RF signals for radio operation verification tests and evaluation of Rx characteristics, when the radio AF output can be measured with an external audio analyzer.

Large Measurement Margin → **Stable Measurements**

Dual RF outputs → **Cuts Costs**, **Cuts Workload**

• High-Purity Signal Source for Testing Analog Radio

Supports SSB Phase Noise Performance
–140 dBc/Hz (nom.)

Phase noise performance affects measurement results at narrow bandwidths of several kHz. In particular, high phase-noise performance is required for interference waveforms.
The excellent SSB phase noise performance supports narrowband radio Rx sensitivity suppression tests.

<–140 dBc/Hz (nom.) @100 MHz, 20-kHz offset, CW
<–131 dBc/Hz (typ.) @1 GHz, 20-kHz offset, CW
<–125 dBc/Hz (typ.) @2 GHz, 20-kHz offset, CW

The excellent level accuracy over a wide output level range supports accurate Rx sensitivity tests.

Amplitude setting range: –110 to +17 dBm (Standard)
–144 to +17 dBm (with opt. 042/072)
Absolute level accuracy: ±0.5 dB*1
Linearity 1: ±0.2 dB (typ)*2

∗1: 400 MHz to 3 GHz, –110 to +10 dBm
∗2: 50 MHz to 3 GHz, –110 to –1 dBm

• Supports Maximum Two RF Outputs

The dual RF outputs of the all-in-one MG3740A help cut infrastructure costs by eliminating the need for two signal sources when outputting wanted + interference waves for RX characteristics tests, and evaluating intermodulation characteristics, etc. Additionally, there is no need for troublesome settings at each of two separate signal generators helping cut operation time and costs using the frequency/level synchronization function.

• AM/FM/ΦM/Pulse Function (Standard)

Supports built-in analog modulation (AM/FM/ΦM) functions and pulse modulation (PM) functions.
Adding additional analog modulation input options (Opt. 050/080) supports modulation by external signal input. This is used when superimposing tone squelch signals.

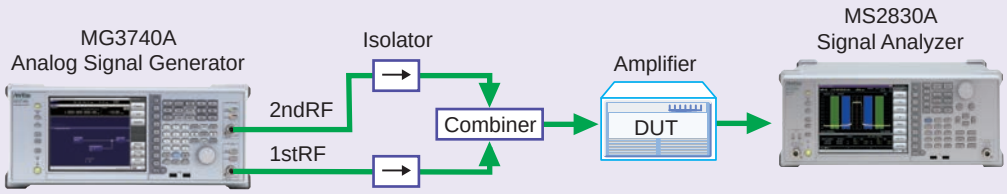
- AM + FM
- AM + ΦM
- Internal 1 + Internal 2
- Internal + External

∗ FM + ΦM does not support.

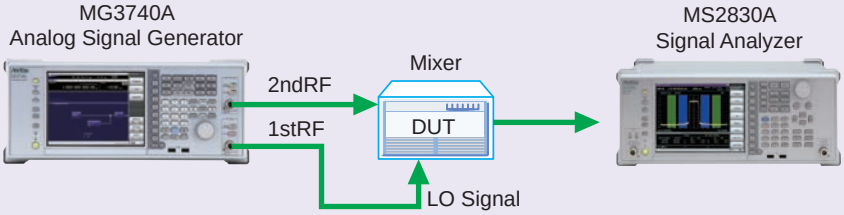
Analog Radio Main Rx Characteristics Evaluation Items

Test Items	Key MG3740A Features	
Sensitivity	✓	Wide level range, High level accuracy, Internal modulation function (Standard)
Passing Bandwidth, Attenuation	✓	High level accuracy, Frequency offset setting function
AF Level	✓	Internal modulation function (Standard)
Demodulation Frequency Characteristics	✓	Internal modulation function (Standard)
Demodulation Distortion	✓	Internal modulation function (Standard)
Demodulation S/N	✓	Internal modulation function (Standard), External modulation function (Option)
Spurious Response	✓	High level accuracy, Internal modulation function (Standard)
Sensitivity Suppression Effect	✓	Dual RF, Low SSB Phase Noise ∗All-in-one evaluation without requiring two separate signal sources.
Intermodulation Characteristics	✓	Dual RF, Low SSB Phase Noise ∗Two units of MG3740A support evaluation without requiring three separate signal sources.

For Reference Signal Generator to Evaluate Characteristics of Amplifiers, Mixers, etc.



Setup for evaluating intermodulation characteristics of amplifier



Setup for evaluating distortion characteristics of Mixer

The dual RF outputs of the MG3740A are ideal for evaluating intermodulation (IM3) characteristics of amplifiers, etc., as well as for use as RF/LO signal sources for testing mixers, eliminating the need for two separates signal generators. The high-performance MS2830A Signal Analyzer series is recommended for intermodulation and harmonic wave distortion measurements.

Dual RF outputs → **Cuts Costs**, **Cuts Workload**

No External Amp → **Stable Level Accuracy**, **Cuts Risk of Damage to DUT**

● Supports Maximum Two RF Outputs

Usually, two general signal generators are required to output two continuous waveforms when evaluating the intermodulation characteristics of amplifiers, etc., or for use as RF/LO signal sources at mixer tests. A maximum of two RF outputs (1stRF/2ndRF) can be installed in the MG3740A and the product lineup includes models with different 1stRF and 2ndRF frequencies.
Different frequencies and levels can be set at the two signal outputs and the frequency/level synchronization function cuts the setting workload too.

USB Power Sensor → **Efficient Equipment Investment**

● USB Power Sensor

Up to two USB power sensors (separately sold) can be connected to the MG3740A.
USB connectors to display the measurement results on the MG3740A screen.

Model	Frequency Range	Dynamic Range
MA24104A*	600 MHz to 4 GHz	+3 to +51.76 dBm
MA24105A	350 MHz to 4 GHz	+3 to +51.76 dBm
MA24106A	50 MHz to 6 GHz	–40 to +23 dBm
MA24108A	10 MHz to 8 GHz	–40 to +20 dBm
MA24118A	10 MHz to 18 GHz	–40 to +20 dBm
MA24126A	10 MHz to 26 GHz	–40 to +20 dBm

*: MA24104A has been discontinued. Replacement model is MA24105A.

● High-power Output Option (Option 041/071) Supports CW Levels of +23 dBm

In general, an external amp is required when the output of a signal generator is insufficient, such as covering the measurement system transmission path loss and inputting high-level modulation signals for amp distortion characteristics tests.
Since the output of an external amp cannot be assured, it must be checked with a power meter each time the frequency and level are changed. Moreover, when using an external amp, sometimes the DUT may be damaged by mishandling errors.
The MG3740A high-power output supports signals required for measuring path loss. In addition, stable measurement is assured when used within the guaranteed setting range.
And the risk of mistakenly damaging the DUT is reduced, even at the output limit.

MG3740A Key Features

- **Frequency Range**
  100 kHz to 2.7 GHz/4.0 GHz/6.0 GHz
- **SSB Phase Noise Performance**
  <–131 dBc/Hz (typ.) (1 GHz, 20-kHz offset, CW)
- **High-power Output]**
  +23 dBm (CW, 400 MHz to 3 GHz)
- **Digital Modulation**
- **BER Test Function**
  Input bit rate: 100 bps to 40 Mbps

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