Option 8 RF Profile and Complex Sweep

2030, 2031, 2032, 2040, 2041, 2042, 2050, 2051, 2052

Ability to offset for insertion loss or gain of external devices, and provides complex carrier sweeps. Particularly useful for EMC testing and for ATE applications.

- ***Calibration of RF power at a remote connector***
- ***Frequency dependent RF output power***
- ***Complex sweep capability***
- ***20 ms to 20 s step time***
- ***Sine, triangle and square wave modulation***

Option 8 RF Profile and Complex Sweep provides additional software features which are particularly well suited for Electromagnetic Immunity, Tempest testing and other applications using signal generators with external devices which introduce frequency dependent RF level errors.

Careful attention to transient states ensures that positive overshoots that could damage power amplifiers are not generated.

RF Profile and Offset

The RF Profile and Offset facility allows the user to reduce RF level errors introduced by using external amplifiers, attenuators or signal combiners. The signal generator accepts and displays RF level requests for the power referred to the output of the external device. The facility reduces the calibration effort required in ATE systems and minimizes the probability of operator induced errors when performing manual tests. The RF Profile facility allows the entry of 10 profiles containing up to 100 correction points with linear interpolation to minimize the RF level frequency response errors introduced by the external device.

The use of a large LCD panel and a flexible menu driven user interface provides a simple means of rapidly generating, selecting and editing profiles in an intuitive way whilst minimizing any ambiguity in the setting of the generator.

Segmented Sweep

The Segmented Sweep facility allows the generation of sweeps with up to 10 segments, each of which can have independent sweep parameter settings. The ability of each segment to have a different RF level permits swept immunity tests to be undertaken which follow the frequency dependent immunity limits specified in EMC standards. The independent frequency step size allows the sweep speed to be increased at higher carrier frequencies to minimize the test time.

The independent stop and start frequencies for adjacent segments also allows the generation of sweeps which deliberately omit sections of the RF spectrum to test systems with on-line signals or to speed up tests on multiband systems.

The sweep can be halted at any time if a device response is obtained and the signal generator settings can then be varied to explore the device response before then continuing with the sweep from the point where the sweep was halted.

Programmable frequency step times between 20 ms and 10 s combined with frequency step sizes down to 0.1 Hz allow the generation of fast swept signals or the slow sweeps associated with EMC testing.

Complex Sweeps

The segmented sweep can be combined with the RF Offset and RF Profile facility to produce complex sweeps which manipulate the RF output level of the signal generator to correct for the frequency response of amplifiers, cables, combiners and antenna characteristics. The ability to include correction factors in sweep mode allows the signal generator to be used in computer controlled test system which allow for manual intervention of the test without losing the system calibration information.

The use of the extended hysterisis facility with the sweep facility to minimize the number of attenuator level transients during a swept test is particularly useful for testing devices which are susceptible to large rapid changes in RF level.

Options

The Option 8 software is available on all versions of the 2030/40/50/50T series signal generators and can be combined with the second modulation oscillator, pulse modulation and generation, GSM PCN and Avionics options to provide a flexible signal generator capable of undertaking tests on most RF and receiver systems.

SPECIFICATION

GENERAL DESCRIPTION

Option 8 software provides additional sweep, RF offset and RF level profiling facilities to support the use of 2030, 2040A 2050 and 2050T series Signal Generators with external amplifiers and attenuators. The RF output from the external device can be calibrated and displayed on the front panel of the signal generator using the RF Offset and RF Profile facilities.

RF OFFSETS

Displayed signal generator output level can be offset by +80 dB to –40 dB from the actual RF output level.

RF Offsets may be used in normal signal generator modes or combined with segmented sweeps.

RF PROFILE

RF output level can be adjusted by ±40 dB from its nominal value without changing the displayed RF output level. Ten profiles can be created each containing up to 100 correction points and the RF output level is linearly interpolated between correction points.

RF Profiles can be used in normal signal generator modes or combined with the segmented sweep.

SEGMENTED SWEEP

Carrier frequency sweeps can be generated which contain defined segments each of which can have a different step size, start and stop frequency, step time and RF level.

Sweep facility is available for 2030 and 2050(T) series in analog modes and for 2040 series in Normal Noise mode.

Start and Stop

Start and stop frequency for each segment can be freely defined within the frequency capability of the signal generator.

Step Size

Minimum step size is 0.1 Hz.

Number of steps is implied by the step size and the start and stop frequencies.

Step Time

20 ms to 20 seconds per step.

Segments

Up to 10 segments may be freely combined together in any order.

VERSIONS AND ACCESSORIES

When ordering please quote the full ordering number information.

Ordering Numbers

Versions

2030	10 kHz to 1.35 GHz Signal Generator
2031	10 kHz to 2.7 GHz Signal Generator
2032	10 kHz to 5.4 GHz Signal Generator
2040	10 kHz to 1.35 GHz Low Noise Signal Generator
2041	10 kHz to 2.7 GHz Low Noise Signal Generator
2042	10 kHz to 5.4 GHz Low Noise Signal Generator
2050	10 kHz to 1.35 GHz Digital and Vector Signal Generator
2051	10 kHz to 2.7 GHz Digital and Vector Signal Generator
2052	10 kHz to 5.4 GHz Digital and Vector Signal Generator
2050T	10 kHz to 1.35 GHz Digital and Vector Signal Generator.
2051T	10 kHz to 2.7 GHz Digital and Vector Signal Generator.
2052T	10 kHz to 5.4 GHz Digital and Vector Signal Generator.
Option 008	RF Profile and Complex Sweep

Supplied with

AC power lead

Operating manual

Options

Option 001	Second internal modulation oscillator
Option 002	Pulse Modulation
Option 003	+19 dBm Output (2030 and 2040 only)
Option 005	GSM PCN PCS (GMSK Bt 0.3) (2030 series only)
Option 006	Avionics Option (must be ordered with Option 001)
Option 009	Internal Pulse Generator (cannot be used with Option 005) only available on 2030 series
Option 010	DME (requires Option 001 and 006, only available on 2030 series, cannot be fitted with Option 005)
Option 105	Modifies the pulse modulation for slower rise and fall time (order with Option 002)

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