since 1984

www.mpginstruments.com

Since 1984, Instrumentation for Avionics and Telecommunication, Consultancy

MPG 4020 Series

RF SIGNAL GENERATOR

The MPG 4020 Series is a fast low-noise RF signal generator instrument able to generate AM, FM and PM modulations. It also provides comprehensive features that satisfy the need for a VOR/ILS Avionics signal generator.

The modulation source can be internal digitally generated or provided via two External Modulation Inputs. The use of a Vector Modulator and Digital Modulation Techniques ensures very high accuracy and stable performance under all operating conditions.

The MPG 4020 Series can be operated manually, using a simple touch-screen user interface or remotely via a standard GPIB port, using the same remote commands as the Aeroflex 750C, 2030 and 2040 series.

The MPG VOR-ILS 4020 Series generates waveforms suitable for testing VHF Omni-directional Radio Range (VOR) systems, Instrument Landing Systems (ILS) and Marker Beacons receivers. Avionics parameters are presented in the same form as described on the ICAO standards.

The MPG Generator is an ideal solution for the testing of avionics receivers and airfield alarm monitors.

DESIGN FEATURES:

- Frequency range: 100kHz ÷ 6GHz
- RF Output Power: -130 ÷ +10dBm (*)
- AM, FM and PM Modulations
- Single, Composite, Dual and Dual Composite modes
- VOR/ILS RF Avionics Generator
- Low spurious signals non-harmonics
- Low phase noise
- 0.1Hz to 50kHz internal mod oscillators
- Two External Modulation Inputs
- One LF Output
- Multi-channel system:
  - 1-channel generator (4020)
  - 2-channel generator (4021)
  - 3-channel generator (4022)
- Vector Signal Generation of signals
- GPIB 488.2 for remote operation
- Touch-screen user interface
- Two USB ports
- One Ethernet Port

(*): Performance not guaranteed below -120 dBm.

C.C.I.A.A. Roma 525830 - Reg. Trib. Roma 1509/84 - Cap. Soc. Euro 46.800,00 i.v. - Cod. Fisc. 06323110582 - Part. Iva 01531141008

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ILS

In ILS mode, the Sum of Depth of Modulation (SDM) of the 90 Hz and 150 Hz tones can be entered to a resolution of 0.1% AM depth. The Difference in Depth of Modulation (DDM) is entered to a resolution of 0.01% depth for a DDM up to 20% and 0.1% for higher DDM settings.

A choice of which tone is dominant is available to the user. The 30 Hz repetition frequency of the ILS waveform can be adjusted in 0.1 Hz steps. Changing between localizer and glide-slope operation is accomplished with a single button on the user interface.

Marker beacon

In the Marker Beacon mode, signals are generated simulating the outer, middle and inner marker beacons. A single button press selects which marker beacon is simulated. Carrier frequency, modulation depth and modulation frequency can be varied from the default settings.

VOR

In VOR mode, the AM depth of the 9960 Hz subcarrier and 30 Hz tone can be independently set and the relative phase of the 30 Hz tone and the modulation tone on the subcarrier is set by directly entering the bearing information in degrees. The VOR repetition rate of 30 Hz can be adjusted in 0.1 Hz steps. For a fixed bearing, additional modulation can be applied to simulate identity signal. A To/From Beacon Button provides a rapid means of reversing a bearing entry and accounting for different bearing conventions.

RATED RANGE OF USE

Temperature: 10° to 40°C.

Humidity: 10% to 90%, noncondensing.

Altitude: 2,000 m (800 mbar)
at 25 °C ambient temperature.

CONDITIONS OF STORAGE AND TRANSPORT

Temperature: -40°C to +70°C.

POWER REQUIREMENTS

Input voltage range: 100 to 240 VAC.

Input frequency: 50/60 Hz.

CALIBRATION INTERVAL

1 year.

DIMENSIONS AND WEIGHT

Height: 4U for 4020 and 4021. 5U for 4022.

Width: 483mm.

Depth: 500mm.

Weight: 13 - 20Kg.

MADE IN ITALY

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