IFR/INSTRUMENT FLIGHT RESEARCH

# 2041

The IFR / Marconi 2041 is a low-noise, high-performance analog signal generator designed for demanding RF testing and R&D applications. It offers superb spectral purity, covering a frequency range from 10 kHz to 2.7 GHz with exceptionally low phase noise and highly accurate output levels.

## SPECIFICATIONS

### Frequency

| | |
|---|---|
| Minimum Frequency | 10 kHz Hz |
| Maximum Frequency | 2.7 GHz Hz |
| Frequency Resolution | 0.1 Hz |

### Output

| | |
|---|---|
| Maximum Output Power | +13 dBm dBm |
| Output Power Range | -144 dBm to +13 dBm |
| Phase Noise | <-140 dBc/Hz (typically -143 dBc/Hz) at 20 kHz offset (1 GHz carrier) |
| Level Accuracy | ±1.0 dB (for levels > -127 dBm up to 2.7 GHz) |

### Modulation

| | |
|---|---|
| Modulation | AM, FM, Phase Modulation (ΦM), Pulse Modulation |
| Sweep Modes | Linear and Logarithmic (Frequency and Amplitude) |
| FM Distortion | <1% at 1 kHz rate and 100 kHz deviation |

### General

| | |
|---|---|
| Reference Oscillator | 10 MHz |
| Interfaces | GPIB (IEEE-488.2) |
| Display | High-resolution backlit LCD dot matrix display |
| Warm-up Time | 20 minutes to specification |

### Physical

| | |
|---|---|
| Power Supply | 90 V to 265 V AC, 45 Hz to 440 Hz |
| Dimensions (W×H×D) | 177 mm H x 419 mm W x 511 mm D mm |
| Weight | 21 kg kg |

### Frequency Specifications

| | |
|---|---|
| Frequency Range | 10 kHz to 2.7 GHz |
| Internal Reference Frequency | 10 MHz |
| Internal Reference Aging Rate | < ±1 x 10^-7 per year |

### Amplitude Specifications

| | |
|---|---|
| Output Impedance | 50 Ω |
| RF Output Connector Type | N-type (female) |
| Amplitude Resolution | 0.1 dB |
| Output Voltage SWR | < 1.25 (for carrier levels < 0 dBm, frequency < 1.35 GHz) |

### Spectral Purity

| | |
|---|---|
| Harmonics | <-30 dBc for levels < +7 dBm |
| Residual FM | < 0.3 Hz RMS in a 300 Hz to 3.4 kHz bandwidth at 1 GHz carrier |
| Sub-harmonics | None up to 1.35 GHz, <-40 dBc up to 2.7 GHz |
| Broadband Noise Floor | <-150 dBc/Hz (typically -156 dBc/Hz) at 10 MHz offset |

### Analog Modulation

| | |
|---|---|
| Amplitude Modulation (AM) Depth Range | 0% to 99% |
| Amplitude Modulation (AM) Resolution | 0.1% |
| Amplitude Modulation (AM) Distortion | < 1.5% at 30% depth |
| Frequency Modulation (FM) Resolution | 1 Hz |
| Pulse Modulation On/Off Ratio | > 80 dB |
| Pulse Modulation Rise/Fall Time | < 15 ns |

### System Connectivity and Interfaces

| | |
|---|---|
| External Reference Input Frequency | 10 MHz (or selectable from 1 MHz to 13 MHz in 1 Hz steps) |

### Power Requirements

| | |
|---|---|
| Power Consumption | 180 VA maximum |

### LF Generator

| | |
|---|---|
| LF Generator Waveforms | Sine, triangle, ramp, square, white noise, two-tone |
| LF Generator Frequency Range | 0.1 Hz to 500 kHz (sine), 0.1 Hz to 20 kHz (other waveforms) |
| LF Generator Frequency Resolution | 0.1 Hz |
| LF Generator Output Level Range | 0.1 mV to 5 V RMS (into open circuit) |
| Dual LF Generators | Single LF generator standard (second is optional) |
| LF Generator Distortion | <0.1% at 1 kHz, 1 V RMS |

### System

| | |
|---|---|
| Store/Recall Memory | 100 non-volatile settings |

### Environmental

| | |
|---|---|
| Operating Temperature Range | 0 to +55 °C |
| Storage Temperature Range | -40 to +71 °C |

### Compliance

| | |
|---|---|
| Safety Compliance | Complies with IEC 1010-1 / EN61010-1 |
| EMC Compliance | Complies with EN55011 Class B and EN50082-1 |

## TECHNOLOGY

Analog Signal Generation

## APPLICATIONS

RF and Microwave Testing, Receiver Characterization, Low Noise Measurements

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.