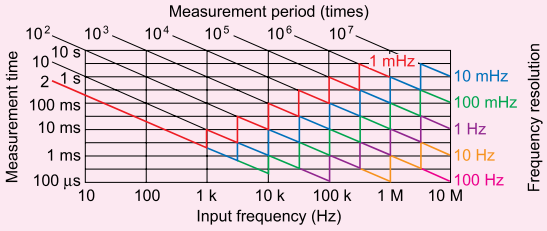
Specifications

MF2400B Series

<table>
<tr><td rowspan="4">Input</td><td>Frequency range</td><td>INPUT 1
MF2412B: 600 MHz to 20 GHz
MF2413B: 600 MHz to 27 GHz
MF2414B: 600 MHz to 40 GHz
INPUT 2
10 MHz to 1 GHz (50 Ω), 10 Hz to 10 MHz (1 MΩ)</td></tr>
<tr><td>Input level range
(sine wave input)</td><td>INPUT 1
–33 to +10 dBm (<12.4 GHz), –28 to +10 dBm (<20 GHz),
–25 to +10 dBm (<27 GHz), [–44.6 + 0.741 x frequency (GHz)] to +10 dBm (≤40 GHz)
INPUT 2
25 mVrms to 2 Vrms (50 Ω), 25 mVrms to 10 Vrms (1 MΩ)</td></tr>
<tr><td>Impedance, coupling</td><td>INPUT 1: 50 Ω, AC couple
INPUT 2: 50 Ω or ≥1 MΩ (≤35 pF), AC couple</td></tr>
<tr><td>Connector</td><td>INPUT 1
MF2412B: N-type, MF2413B: SMA-type, MF2414B: K-type
INPUT 2: BNC-type</td></tr>
<tr><td rowspan="3">Gating function</td><td>Trigger mode</td><td>INT: Triggered by measurement signal
EXT: Triggered by external signal
∗Trigger level: 1.5 V ± (2 to 10 Vp-p), Trigger pulse width: ≥1 µs, Impedance: ≥100 Ω, Coupling: DC
LINE: Triggered by AC line signal</td></tr>
<tr><td>Trigger delay</td><td>20 ns to 0.1 s*1, off
(≤320 ns in 20 ns steps, and <1 µs in 40 ns steps variable; ≥1 µs in continuously variable as effective two digits)</td></tr>
<tr><td>Gate width</td><td>100 ns to 0.1 s (<1 µs in 20 ns steps variable; ≥1 µs in continuously variable as effective two digits</td></tr>
<tr><td rowspan="5">Pulse modulation wave measurement</td><td>Frequency range</td><td>MF2412B: 600 MHz to 20 GHz
MF2413B: 600 MHz to 27 GHz
MF2414B: 600 MHz to 40 GHz</td></tr>
<tr><td>Pulse width</td><td>100 ns to 0.1 s (NARROW), 1 µs to 0.1 s (WIDE)</td></tr>
<tr><td>Pulse repetition frequency</td><td>10 Hz to 4 MHz (pulse off time: ≥240 ns)</td></tr>
<tr><td>Carrier frequency measurement*2</td><td>Max. resolution: 10 kHz (pulse width: 100 ns to 1 µs), 1 kHz (pulse width: 1 to 10 µs),
100 Hz (pulse width: 10 to 100 µs), 10 Hz (pulse width: 0.1 to 1 ms),
1 Hz (pulse width: 1 to 10 ms), 0.1 Hz (pulse width: 10 to 100 ms)
Measurement time: (T or T_S whichever is greater) x $\{1/(f_R \times TGW)\}^2$ *3
<table><tr><td>Resolution</td><td>1 Hz</td><td>10 Hz</td><td>100 Hz</td><td>1 kHz</td><td>10 kHz</td><td>100 kHz</td><td>1 MHz</td></tr><tr><td>Measurement time</td><td>200 s</td><td>20 s</td><td>2 s</td><td>200 ms</td><td>20 ms</td><td>5 ms</td><td>5 ms</td></tr></table>∗Measurement carrier frequency: 1 GHz (TGW*3 = $0.1/f_R$)
Accuracy: ±1 count ±time base accuracy x measurement frequency ±trigger accuracy ±residual error*5
±1/TGW*3</td></tr>
<tr><td>Pulse width measurement</td><td>Resolution: 1 ns
Accuracy: ±20 ns ±time base accuracy x measurement pulse width ±trigger accuracy
Unit indication: µs (fixed)</td></tr>
<tr><td>Pulse period measurement</td><td>Resolution: 1 ns
Accuracy: ±20 ns ±time base accuracy x measurement period ±trigger accuracy
Unit indication: µs (fixed)</td></tr>
<tr><td rowspan="2">Carrier wave frequency measurement</td><td>Resolution, gate time</td><td>INPUT 1
NORMAL: 1 MHz/1 µs to 0.1 Hz/10 s
FAST: 1 MHz/0.18 µs to 0.1 Hz/1.8 s (typical)
INPUT 2
10 MHz to 1 GHz (50 Ω): 1 MHz/1 µs to 0.1 Hz/10 s
10 Hz to 10 MHz (1 MΩ): Shown below
  </td></tr>
<tr><td>Measurement accuracy</td><td>INPUT 1
NORMAL: ±1 count ±time base accuracy x measurement frequency ±residual error*4
FAST: ±1 count ±time base accuracy x measurement frequency ±trigger accuracy ±residual error*5
INPUT 2
10 MHz to 1 GHz: ±1 count ±time base accuracy x measurement frequency
10 Hz to 10 MHz: ±1 count ±time base accuracy x measurement frequency ±trigger accuracy</td></tr>
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