## General Signal Source
### PXI Module

<table>
<thead>
<tr>
<th>Frequency range</th>
<th>Option 1 1601</th>
<th>10MHz~6.6GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 2 1602</td>
<td>10MHz~12.4GHz</td>
<td></td>
</tr>
<tr>
<td>Option 3 1603</td>
<td>10MHz~20GHz</td>
<td></td>
</tr>
<tr>
<td>Option 4 1604</td>
<td>10MHz~40GHz</td>
<td></td>
</tr>
</tbody>
</table>

### Step (Hz)
- 20

### Frequency switching (μS)
- ≤ 200

### Output level
- 10MHz~6.6GHz: -45dBm ~ +15dBm
  - Option 5 1601P: -45dBm ~ +37dBm
- 10MHz~12.4GHz: -45dBm ~ +15dBm
- 10MHz~20GHz: -25dBm ~ +15dBm
- 100MHz~40GHz:
  - 100MHz to < 10GHz: -25dBm ~ +15dBm
  - 10GHz to < 20GHz: -25dBm ~ +13dBm
  - 20GHz to < 40GHz: -25dBm ~ +13dBm

### Power step (dB)
- 0.1

### Output level steady (dB)
- ±0.5 (0~+40°C, Option 1/Option 2);
- ±1.5 (0~+40°C, Option 3/Option 4);
- ±0.2 (ALC ON)

### Power accuracy (dB)
- -45dBm to < -25dBm: ±2.5 (0~+40°C)
- -25dBm to < -15dBm: ±1.5 (0~+40°C)
- -10dBm to < 0dBm: ±1.5 (0~+40°C)
- 0dBm to < +15dBm: ±1.5 (0~+40°C) ±0.2 (ALC ON)

### Frequency temperature stability
- ±0.3ppm (Can be synchronized external reference)

### Frequency accuracy
- ±0.3ppm (Can be synchronized external reference)

### Spurious (dBc)
- -70 (Typical)

### Harmonics (dBc)
- 10MHz to < 3GHz: ≤ -30 (Output Level: 0dBm)
- 3GHz to < 20GHz: ≤ -40 (Output Level: 0dBm)

### Phase Noise (dBc/Hz)
- @10GHz
  - dBc/Hz@100Hz ≤ -76
  - dBc/Hz@1kHz ≤ -90
  - dBc/Hz@10kHz ≤ -94
  - dBc/Hz@100kHz ≤ -94
  - dBc/Hz@1MHz ≤ -100
- @20GHz
  - ≤ -70
  - ≤ -84
  - ≤ -88
  - ≤ -88
  - ≤ -94

### Power supply
- +12V

### Power consumption (W)
- ≤ 10

### Pulse Modulation

<table>
<thead>
<tr>
<th>Modulation depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 60dBc (Test Conditions: Output=+10dBm)</td>
</tr>
</tbody>
</table>
Modulation pulse width 100ns~10ms
Pulse cycle 500ns~10ms
Pulse fluctuation 0.1dB
Pulse up / down edge 30nS/50nS
Pulse overshoot --

List Scan
Store the number of points Supports up to 1024 points (External trigger)
Connectors:
RF connector: SMA-KFD
Control and power connector: J1, J2
Not using PXI, connector: J30J-9ZKP
Dimensions: ≤140×100×18mm (3U PXI one slot)
Control: SPI (Compatible PXI)
Operating temperature (℃) 0~+40
Storage temperature (℃) -20~+70

Notes:
1. Internal TCXO, automatic synchronization 10MHz (Pout≥+0dBm) external reference;
2. The frequency hopping time is the hardware switching time, and does not include the external software communication time. If SPI communication is used, the rate is less than 10MHz. If serial communication is used, the software processing time is related to the baud rate and the number of bytes;
3. Option: 1601/1602/1603/1601P is one slot, Option1604 is a dual slot module.

DB9/J30J-9 Common Interface Definition (SPI and serial control)

<table>
<thead>
<tr>
<th>Pin number</th>
<th>Pin definition</th>
<th>Function</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>U/S</td>
<td>Communication mode selection</td>
<td>6</td>
<td>SCLK</td>
<td>SPI Clock</td>
</tr>
<tr>
<td>2</td>
<td>TXD</td>
<td>Serial transmission</td>
<td>7</td>
<td>MOSI</td>
<td>SPI DATA</td>
</tr>
<tr>
<td>3</td>
<td>RXD</td>
<td>Serial receive</td>
<td>8</td>
<td>GND</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>NSS</td>
<td>SPI LE</td>
<td>9</td>
<td>+12V</td>
<td>Power</td>
</tr>
<tr>
<td>5</td>
<td>MISO</td>
<td>SPI DATA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: When the U/S is set to high, the system is serial communication, U/S is set to low, the system for the SPI communication; this pin is floating when the high.
PHASE NOISE

![Phase Noise Chart]

-180 to -40 dB

- Offset range from 1E-01 to 1E+07