

## Features

- 18GHz to 32GHz frequency range
- Low phase noise -98dBc/Hz -10kHz @ 20GHz
- Calibrated output power
- Wide input voltage range: 5V~15Vdc @ 8W
- USB, Ethernet, TTL serial, interfaces.
- 12V POE (w/optional Ethernet adapter)
- External reference 5MHz to >100MHz
- Compact 3.2"x4.3"x0.485"



## Electrical Specifications

Note: The 5030 is **NOT** USB powered. You may purchase a Valon **PS6V-2** power supply kit.

### DC Input

<b>Input Voltage Range</b>	
Absolute Max	+16V to -16V (reverse protected)
Operational Max	+15v
Operational Min	+4.5V (minimum voltage at the module power connector)
Very low voltage operation	+3.5V (synthesizer remains locked and serial port ok)
Hardware Reset Threshold	16.0V for >10sec resets the synthesizer to factory default settings
<b>Input Power</b>	8 Watts normal operation 500mW Standby (power down)
<b>DC Input Connector</b>	Hirose DF3A-2P-2DS Mates with Hirose DF3-2S-2C plug and pre-crimped wire H2BXT-10112-R4 (red) and H2BXT-10112-B4 (black). 20" dc cable s supplied with synthesizer, additional cables available.

## RF Synthesizer Specifications

<b>Frequency Range</b>	18GHz to 32GHz. Tunable 16GHz to 33GHz with reduced power and spectral performance.
<b>Frequency Increment</b>	20Hz , 40Hz above 30GHz
<b>Frequency Lock Time</b>	<400uS Lock time is from the time the frequency command is sent, or a frequency step in sweep mode, or input from User Port in List mode to a stable Lock Detector output.

Phase Noise	Typical phase noise						
	Offset	100Hz	1kHz	10kHz	100kHz	1MHz	10MHz
	20GHz	-68	-90	-101	-104	-112	-133
	30GHz	-65	-88	-99	-101	-110	-130
<b>Harmonics</b>	2f harmonics are typically <-20dBc, higher order harmonics are tbd.						
<b>Sub Harmonics</b>	Sub harmonics (f/2, 3f/2 and f/4) are typically <-20dBc for 20GHz to 30GHz operation.						
<b>Spurious</b>	Non-Harmonic spurious typically <-60dBc including fraction-N spurs and boundary spurs. The 5030 also has four user selectable spur reduction modes. See Operations Manual						
<b>Output Return loss</b> 20GHz~ 30GHz				Typical(dB)			
				6dB			
<b>RF Connectors</b>	SMK 2.92 Female						

RF Output Power Range	Min dBm	Typical dBm	Max dBm
18GHz ~ 30GHz	+16	+18	+20
30GHz ~ 32GHz	+10	+13	+15
18GHz ~ 20GHz	+13	+15	+16
<b>RF Output Power Accuracy</b>			
18GHz ~ 30GHz	±1.2dB, +15dBm~-15dBm		
16GHz ~18GHz, 30GHz to 34GHz	±2.0dB, +10dBm~-15dBm		
<b>RF Output Power Resolution</b>	0.01dB		

### Reference Frequency

<b>Internal Reference</b>	10.000MHz
Frequency	± 2ppm (23°C) can be zeroed with reference trim command
Initial Accuracy	±0.5ppm -20°C to +70°C (case temp)
Temperature Stability	>± 10ppm
Reference Trim Range	0.01ppm
Reference Trim Resolution	
<b>External Reference</b>	50Ω nominal impedance
Frequency Range	5MHz to 100MHz, typical max 120MHz
Input power range	-10dBm min. to +13dBm max.
<b>External Reference Connector</b>	SMA Female 50Ω nominal impedance Note: Ext input is ac coupled to synthesizer but dc coupled to internal VCTCXO control circuit. See Operations Manual for details.
<b>EFC</b>	Pulling range >±10ppm
Electronic frequency Control at external reference input	Voltage ±3V Input resistance 20kΩ Frequency response 0Hz~>5kHz

### Interface

<b>USB</b>	<b>Micro-B socket</b> FTDI virtual com port 9600, 8, N,1,N default, see selectable baud rates below See FTDI for drivers for your computer. Note: The Configuration Manager GUI will automatically configure the USB port and switch to 115200 baud rate.
<b>Ethernet</b>	10BASE-T/100BASE-TX compliant with IEEE 802.3. 8-pin Hirose 2mm connector or optional external RJ-45 module and cable adapter.

<b>USER PORT</b>	<p>3.3V TTL TXD &amp; RXD serial, 5-bit List Mode parallel, Sweep trigger in, Sweep step out, Sweep enable out. All 3.3V TTL Hi-Z input, 200 ohm output.          Optional SPI control with SCL MISO MOSI SEL (custom available on request)          Lock detect output.          Connector: Hirose DF11-8DP-2DS          Mates with Hirose DF11-8DS-2C plug and pre-crimped wireH3BXT-10112-** (Digi-Key)  <b>LMS-2</b> LIST Mode switch and cable accessory is also available.</p>
<b>Selectable Baud Rates</b>	USB, serial TTL: 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600

### Environmental

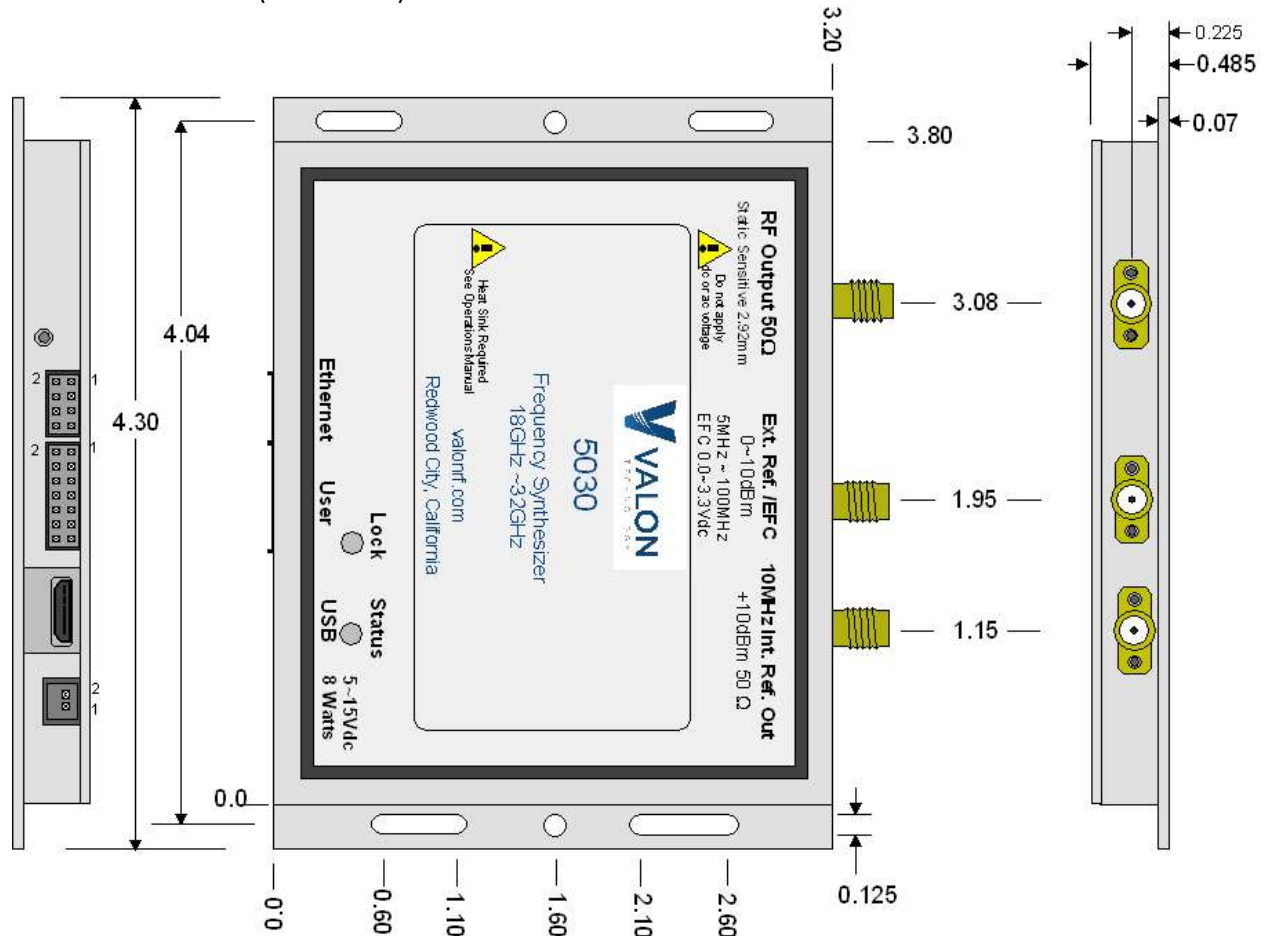
Operational full specifications:	-0°C~+60°C (case temperature, heat sink required)
No damage functional:	-20°C~+70°C (case temperature)
Humidity:	5%~95% minimal condensation allowed
IP rating:	50 No water protection.

## Mechanical Dimensions

3.2"x 4.3"L x 0.485"

Weight: 0.37lbs, 165g Material: AL-6061-T6

Finish: Clear Alodine (conductive)



### Available Accessories:

**ETH-1 Ethernet Adapter**

**ETH-2 PoE 12V Injector**

**PS6V-2 Power Supply Kit**

**LMS-2 List Mode Selector Switch and Cable Assembly**

Visit 5015/5019/5030 Accessory page at [www.ValonRF.com](http://www.ValonRF.com) for details and pricing.