

Features

- 18GHz to 34GHz 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

Input Voltage Range	
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
Input Power	8 Watts normal operation 500mW Standby (power down)
DC Input Connector	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 is supplied with synthesizer, additional cables available for purchase.

RF Synthesizer Specifications

Frequency Range	18GHz to 32GHz. Tunable 16GHz to 34GHz with reduced power and spectral performance.
Frequency Increment	20Hz , 40Hz above 30GHz
Frequency Lock Time	<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
Harmonics	2f harmonics are typically <-20dBc, higher order harmonics are tbd.						
Sub Harmonics	Sub harmonics (f/2, 3f/2 and f/4) are typically <-20dBc for 20GHz to 30GHz operation.						
Spurious	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						
Output Return loss 20GHz~ 30GHz	Typical(dB) 6dB						
RF Connectors Reference Input/Output RF Output	SMA Female SMK 2.92mm Female (mates with 2.92, 3.5mm and SMA male)						

Maximum Output Power	Min dBm	Typical dBm	Max dBm
18GHz ~ 30GHz	+16	+18	+20
30GHz ~ 34GHz	+10	+13	+15
16GHz ~ 18GHz	+13	+15	+16
Minimum Output Power			-15
RF Output Power Accuracy 18GHz ~ 30GHz 16GHz ~18GHz, 30GHz to 34GHz	±1.2dB, +15dBm~-15dBm ±2.0dB, +10dBm~-15dBm		
RF Output Power Resolution	0.01dB		

Reference Frequency

Internal Reference Frequency Initial Accuracy Temperature Stability Reference Trim Range Reference Trim Resolution	10.000MHz ± 2ppm (23°C) ±0.5ppm -20°C to +70°C (case temp) >± 10ppm 0.01ppm
External Reference Input Frequency Range Input power range	50Ω nominal impedance 5MHz to 100MHz, typical max 120MHz -10dBm min. to +13dBm max. 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.
Reference Output	10MHz buffered internal reference +9dBm ± 1dB SMA Female 50Ω nominal impedance ac coupled 5MHz to 120 MHz +9dBm buffered external reference when external reference is selected.
EFC Electronic frequency Control at external reference input	Pulling range >±10ppm Voltage ±3V Input resistance 20kΩ Frequency response 0Hz~>5kHz

Interface

USB	Micro-B socket 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.
Ethernet	10BASE-T/100BASE-TX compliant with IEEE 802.3. 8-pin Hirose 2mm connector or optional external RJ-45 module and cable adapter.
USER PORT	3.3V TTL TXD & 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) LMS-2 LIST Mode switch and cable accessory is also available.
Selectable Baud Rates	USB, serial TTL: 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600

Environmental

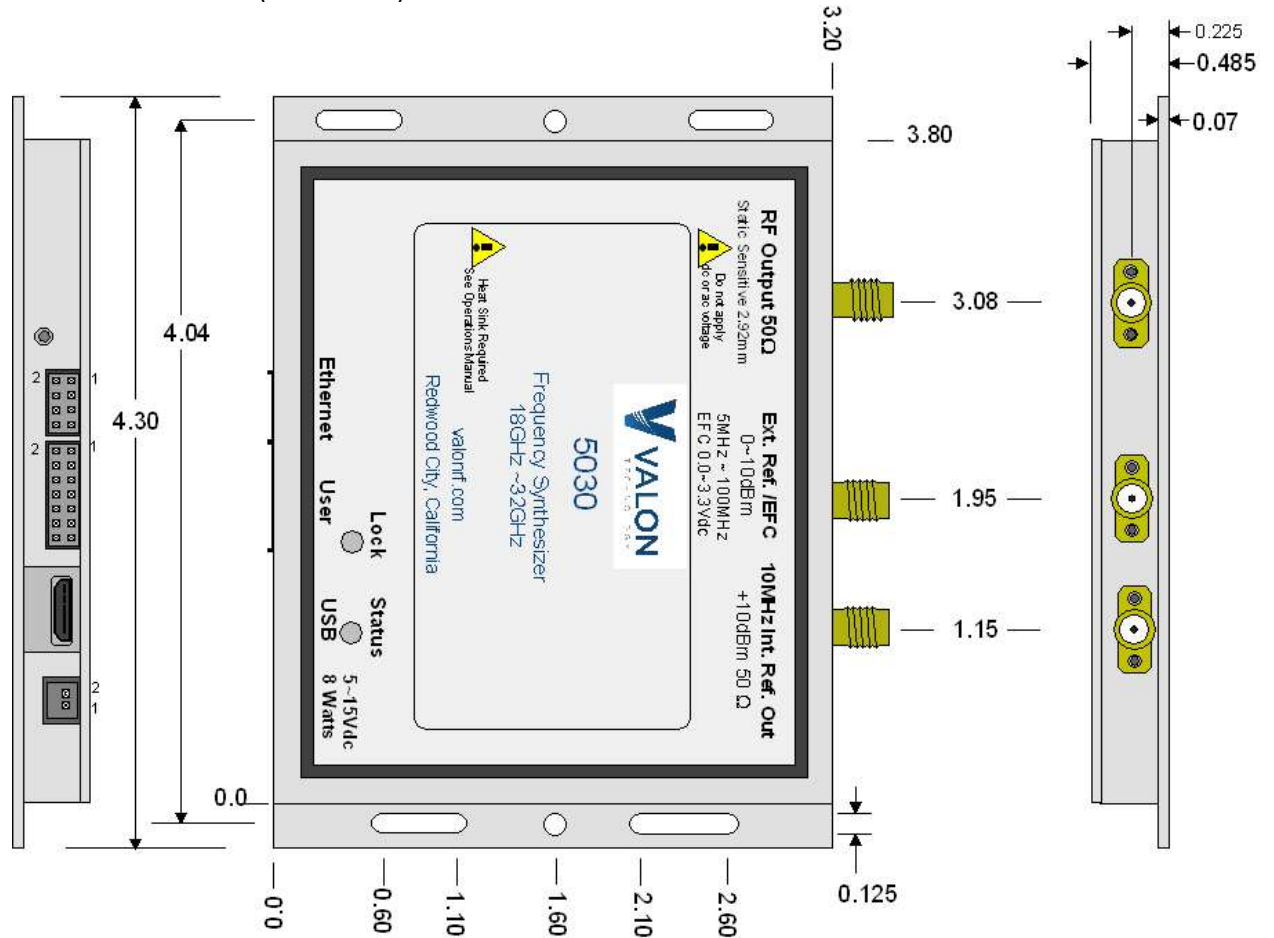
Operational full specifications:	-0°C~+60°C (case temperature, heat sink required)
No damage functional:	-20°C~+70°C (case temperature)
Humidity:	5%~95% minimal condensation allowed
IP rating:	50 No water protection.

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
- MKT-3 Mounting Kit

Visit 5015/5019/5030 Accessory page at www.ValonRF.com for details and pricing.