

NovaSource M₂ Synthesized RF Signal Sources

- Low Cost Synthesized RF Signal Source
- Fully Programmable
- PC Controllable (Software Included)
- Non-Volatile Memory Saves Settings
- Supports Stand Alone Operation
- Low Phase Noise
- Wide Tuning Range (up to 1.5:1)
- Low Power Consumption
- Standard Models from 45 MHz to 220 MHz
- Compact Size
- Quick Delivery



NovaSource M₂ RF Signal Sources from Nova Engineering fill the void in the communications industry for small, low cost, and easy to use synthesizers.

The *NovaSource M₂* series of signal generators are used in applications where flexibility and accurate frequency generation is required. *NovaSource M₂* is a complete "turn-key" solution to many frequency synthesizer applications.

NovaSource M₂ can replace equipment costing 10 - 20 times more in a variety of applications such as:

- Product Development
- Production Test
- General Lab
- Training

With the included software, interface cabling, and power supply *NovaSource M₂* is easily controlled from any PC via a parallel port, and easily configured for specific applications. With a PC and the supplied *NovaSource M₂* Control Panel software, the desired frequency is entered and stored in nonvolatile memory. Continuous control is also an option with *NovaSource M₂*. *NovaSource M₂* programmable synthesizers are completely self-contained and have a full range of synthesizer functions including:

- Buffered, attenuable RF output (+ 10 dBm, typical)
- Internal 1.0 PPM TCXO reference
- Input port for an external reference
- Individual models covering frequencies from 45 MHz to 220 MHz with tuning resolution of 25 kHz to 100 kHz

Low-priced and available for quick delivery, *NovaSource M₂* RF signal sources are a complete solution to many frequency synthesizer applications.

Specifications:

Part Number	Frequency - MHz	Step Size
NS2-0045253	45 - 65	25 kHz
NS2-0065503	65 - 95	50 kHz
NS2-0080503	80 - 120	50 kHz
NS2-0110104	110 - 160	100 kHz
NS2-0160104	160 - 220	100 kHz

General Specifications:

- Output Power +10dBm typical, with software controlled attenuation
- Spurious Output Level < -60 dBc
- Harmonics < -35 dBc
- Frequency Stability 1 PPM
- Frequency Standard 10 MHz (Internal)
- RF Output Modes Continuous, Momentary and Toggle (on-off)
- Power Consumption 18 VDC @ < 300 mA
- Temperature Range - Operating: 0 to +50°C (-20 to +70°C available)
- Control Interface: TTL Compatible Serial Data, Ext. Trigger
- Size (W x L x H) 2.75" x 3.52" x 0.75" / 70 mm x 90 mm x 19 mm

Cost:

NovaSource M2 RF Signal Sources are **\$1149.00** in single quantities. OEM and resale pricing is available.

Contact:

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NovaSource M2™ RF Signal Source Detailed Specifications

		Min.	Typical	Max.	
1.1	Frequency reference port		SMA jack; selectable as internal reference output or external reference input		
1.2	Internal reference frequency		10.00000 (9.6000 in 30 kHz step models)		MHz
1.3	Internal reference initial freq. accuracy (@ +23 +/- 2 deg. C)	- 1.0		+ 1.0	ppm
1.4	Internal reference stability, over operating temperature range	-1.0		+1.0	ppm
1.5	Internal reference frequency aging		Up to +/- 1.0		ppm/yr.
1.6	Internal reference output level	+1.5	+2.0	+2.5	dBm, 50Ω load Vpk-pk, 1Ω load
1.7	External reference frequency (dependent on PLL configuration)		up to 20		MHz
1.8	External reference input level		0.5 to 5.0		Vpk-pk
1.9	External reference input impedance		600 Ω in parallel with 25 pF		
RF Specifications		Min.	Typical	Max.	
2.1	RF output power (highest step)	+8.0	+10	+14	dBm
2.2	RF output power adjustment Number of steps Total range	25	Approximately 1 dB steps	31	dB dB
2.3	Non-harmonic spurious		< - 60		dBc
2.4	Harmonics		< - 35		dBc
2.5	RF output modes		Continuous, Momentary, and Toggle (on/off)		
2.6	RF OFF output level (RF Standby not enabled)		VCO powered off – no output		
2.7	Lock time (RF Standby <i>not enabled</i>): Ext. trigger falling edge RF within 30 deg. of final phase.		< 35 (most models <15)		msec
2.8	RF OFF output level (RF Standby enabled)	-40	-65	+70	dBm
2.9	Lock time (RF Standby <i>enabled</i>): Ext. trigger falling edge to RF within 30 deg. of final phase.		< 6.0 (most models < 2.0)		msec

Power		Min.	Typical	Max.	
3.1	DC supply input voltage	+16	+18	+24	VDC
3.2	DC supply current		500		mA
Mechanical		Min.	Typical	Max.	
4.1	Temperature range, operating	0		+50	Degrees Celsius
4.2	Temperature range, storage	-20		+70	Degrees Celsius
4.3	Control Interface		TTL compatible serial data, external trigger		
4.4	Control Software (NSCP – included)		PC – Windows 95/98/2000/XP compatible		
4.5	Status Indicator LED's		RF Output ON Phase Lock DC Power applied		
4.6	Size (W x L x H)		2.75" x 3.52" x 0.75" 70 mm x 90 mm x 19 mm		Inches Millimeters
4.7	Weight (not including cables or power supply)		6 oz. 170 g.		Ounces Grams
4.8	RF Output connector		SMA female		
4.9	Reference connector		SMA female		
4.10	Power connector		1.3 mm center-positive DC power jack		
4.11	Data connector		DB-9P male		
4.12	Enclosure		Extruded aluminum, plastic end-caps		
4.13	Finish		Epoxy-based paint, black		

Additional specifications by model number:

NovaSource™ Model Number	Frequency Range (MHz) (min - max)	Step size (kHz)	SSB Phase Noise (dBc/Hz) (all typical)
NS2-0045253	45 –65	25	-80 @ 1 kHz -100 @ 10 kHz -115 @ 100 kHz
NS2-0065503	65 –95	50	-80 @ 1 kHz -100 @ 10 kHz -115 @ 100 kHz
NS2-0080503	80 –120	50	-80 @ 1 kHz -100 @ 10 kHz -115 @ 100 kHz
NS2-0110104	110 –160	100	-80 @ 1 kHz -95 @ 10 kHz -110 @ 100 kHz
NS2-0160104	160 – 220	100	-75 @ 1 kHz -85 @ 10 kHz -110 @ 100 kHz

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