

Anritsu Advancing beyond

EcoSyn™ Lite MG36021A

Microwave Frequency Synthesizer Module

MG36021A

10 MHz to 20 GHz



EcoSyn™ Lite MG36021A

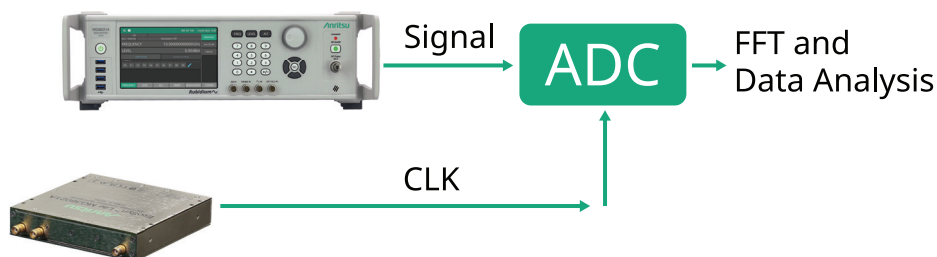
Anritsu's EcoSyn Lite MG36021A is a 10 MHz to 20 GHz CW Microwave frequency synthesizer module in a compact form factor of 4 in x 4 in x 0.8 in. It features outstanding phase noise, ultra-fast switching speed and high output power. EcoSyn Lite has USB and SPI interfaces for remote control and is powered using a +12 VDC source. It supports standard SCPI and QuickSyn™ native commands which make developing scripts to remotely control and automate very easy and user friendly.

Key Performance Specifications:

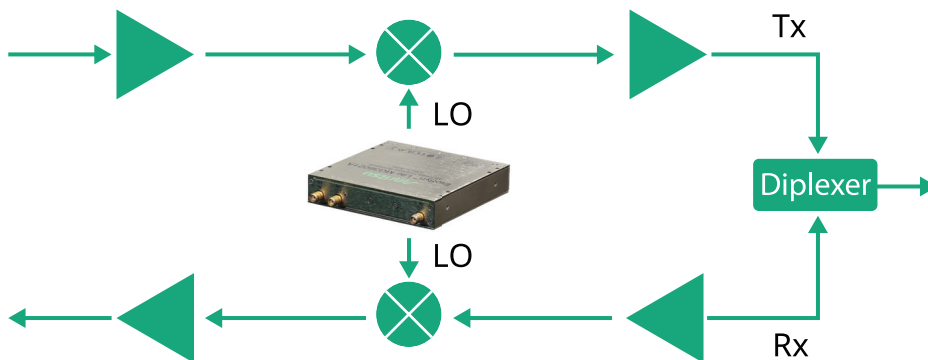
- Frequency Coverage of 10 MHz to 20 GHz
- Instrument grade phase noise performance
- Very fine frequency resolution
- Ultra-fast frequency Switching speed
- Built in 10 MHz OCXO reference as well as external reference input
- Robust output power
- Amplitude Control
- Supports Frequency Step and List sweep modes

Instrument Class Phase Noise in Module Form Factor

EcoSyn Lite features best in class phase noise performance that even compares favorably with some of the bench top signal generators. Along with superior non-harmonic spurious of -60 dBc, EcoSyn Lite RF output a very low jitter and can be used as a clock source for Gbit ADC/DAC testing and in high speed optical systems.



EcoSyn Lite's low phase noise both at close in and far off offsets and its robust output power of $+18$ dBm @ 20 GHz makes it ideal for use as LO for up/down converters in RF/microwave transceivers. These transceivers increasingly use complex and high order modulation signals which require LOs with very low phase noise for up/down conversion.



Ultra-fast Frequency Switching Speed

EcoSyn Lite has ultra-fast frequency switching time of less than 50 μ Sec in list mode. In ATE (Automatic Test Equipment) application, fast frequency switching speed saves testing time. Shorter test times translate to higher test throughput thus achieving less test cost. Ultra-fast switching time and small form factor makes EcoSyn Lite ideal in ATE rack applications.

Switching speed can also be critical in radar cross section (RCS) measurements necessary to establish radar signatures for known targets, such as aircraft, ships, and missiles. These signatures are created through measurements at thousands of frequencies at compact indoor ranges as well as at static and dynamic outdoor ranges. Measurements are performed with systems similar to an actual radar transmitter and receiver, relying on a fast-switching frequency synthesizer for transmission and a fast-response, wideband radar receiver for analysis. Because of the total numbers of measurements that must be made, EcoSyn's ultra fast switching time can save several days of measurement time.

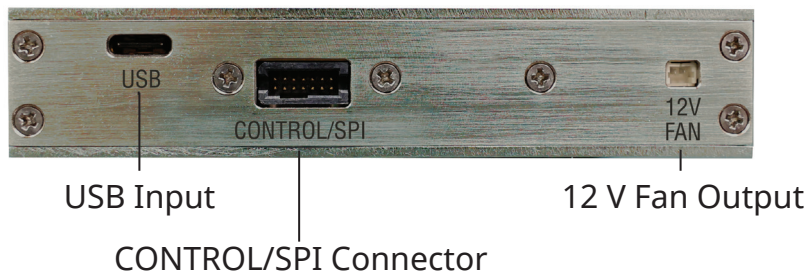
Testing an antenna also requires large amounts of data at multiple frequencies. Here again EcoSyn Lite's ultra fast switching speed can save a lot of testing time.



Efficient, Compact and Easy to Automate

EcoSyn Lite supports standard SCPI and QuickSyn native commands which make developing scripts to remotely control and automate very easy and user friendly.

EcoSyn Lite synthesizer module is housed in a portable, compact 4 in x 4 in x 0.8 in form factor which enables it to be used in space constrained applications which require instrumentation grade CW signal source. It supports USB and SPI interfaces for remote control and is powered using a +12 VDC source.



Key Specifications

Performance	
Frequency Range	10 MHz to 20 GHz
Internal Reference	10 MHz, OCXO
Reference In/Out	10 MHz
Input Power	+12 VDC
Power Consumption	15 W (nominal)
Size	101.6 mm x 101.6 mm x 20.3 mm (4 in x 4 in x 0.8 in)
Weight	0.38 kg (0.84 lb)

Interface

Connectors	
RF OUT	SMA(f)
REF OUT	SMA(f)
SPI	14 pin, 1.27 mm Spaced Double-row Header (see SPI interface details)
USB	Type-C Receptacle (USB 2.0). Provides Access to Soft Front Panel via PC
12V OUT	2-pin Header. Provides Power for External 12 V Fan. 500 mA (max)

SPI Interface

Signal	Pin	Description
SPI_CLK	5	SPI Clock. Supplied by the controlling computer (not the synthesizer). The controlling computer is the SPI master; the synthesizer is the SPI slave.
SPI_SS	6	SPI Slave Select. This signal is an active low input to the synthesizer. It frames command communications. For each command, SPI_SS goes low before the first bit is sent and goes high after the last bit is sent.
SPI_MISO	8	Master In/Slave Out. Status and other returned information from the synthesizer to the controlling computer
SPI_MOSI	10	Master Out/Slave In. Command data from the controlling computer to the synthesizer.
TRIGGER	12	Rising edge active input. When enabled, the trigger signal of +3.3 V can initiate frequency change or step through lists or sweeps.
LOCK	7	Output indicates the synthesizer is locked on its current setting (+3.3 V locked, 0 V unlocked)
RF_LOCK	9	Output indicates the synthesizer has detected an external or internal reference signal and locked on that signal (+3.3 V locked, 0 V unlocked).
RESET	13	Internally pulled up to +3.3 V with 100 kΩ resistor. Active “low” signal, which has a minimum width of 1 ms, will reset the synthesizer to a default state.
PW_+12V	1, 2	External +12 VDC supply
GND	11, 14	Ground

Ordering Information

Standard Accessories

Part Number	Description
40-187-R	AC/DC Power Supply, 1 meter 12 V output cable
2100-43-R	Development Cable
2000-1859-R	USB 3.0 Type-C to Type-A Cable

Optional Accessories

Part Number	Description
2000-2180-R	Cooling Assembly Kit

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