

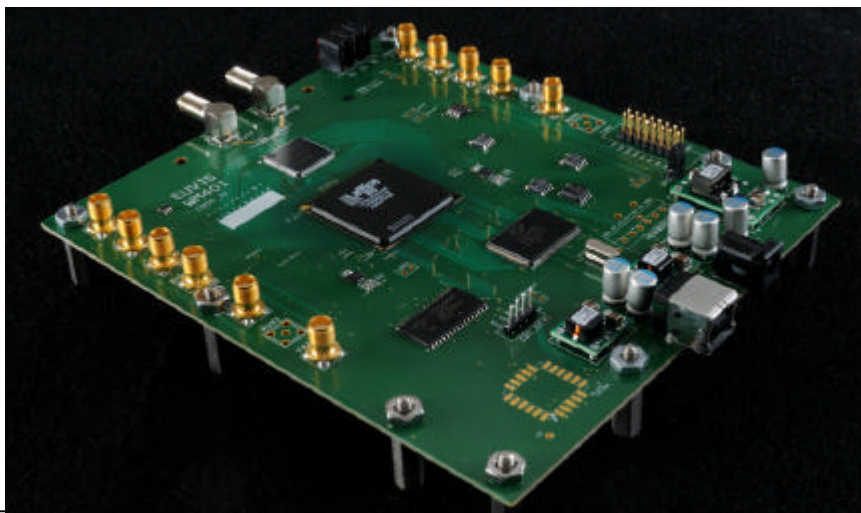
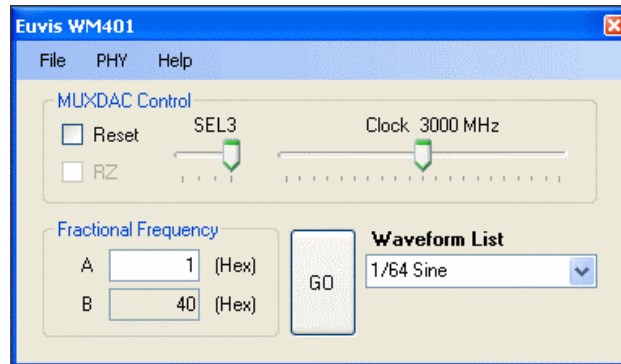
## WM401 – MUXDAC Evaluation Board (Waveform Module)

### PRODUCT DESCRIPTION

The **WM401** modules can only generate CW sinusoidal waveforms at frequencies of fractions of the sampling clock, from  $1/64$  to  $31/64$  of the data sampling rate. The **WM401** can be controlled by a PC via a USB interface. The module features a MUXDAC, **MD652D** or **MD662H**, either of which has 12-bit amplitude resolution. The module can be clocked from 2 GHz to 4 GHz. With a 4 GHz clock, the sampling rate is 4 GSPS for the **MD652D** and 8 GSPS for the **MD662H**. The module is equipped with a LatticeSC LFSC3GA25E-7FN900CES FPGA programmed to generate CW sinusoidal waveforms only and is not for re-programming. For other non-sinusoidal or more complex waveform generation, please use the [Euvis arbitrary waveform generators](#) (AWG). The **WM401** is powered by a 12V wall-mount AC adapter.

### KEY FEATURES

- Differential analog outputs
- 12-bit amplitude resolution
- CW waveform frequency:  $1/64^{\text{th}}$  ~  $31/64^{\text{th}}$  of the sampling rate
- Friendly control by graphical user interface (GUI)
- USB 2.0 compliant interface (other interfaces available upon request)
- +12V DC wall-mount power supply included



**ELECTRICAL SPECIFICATIONS**

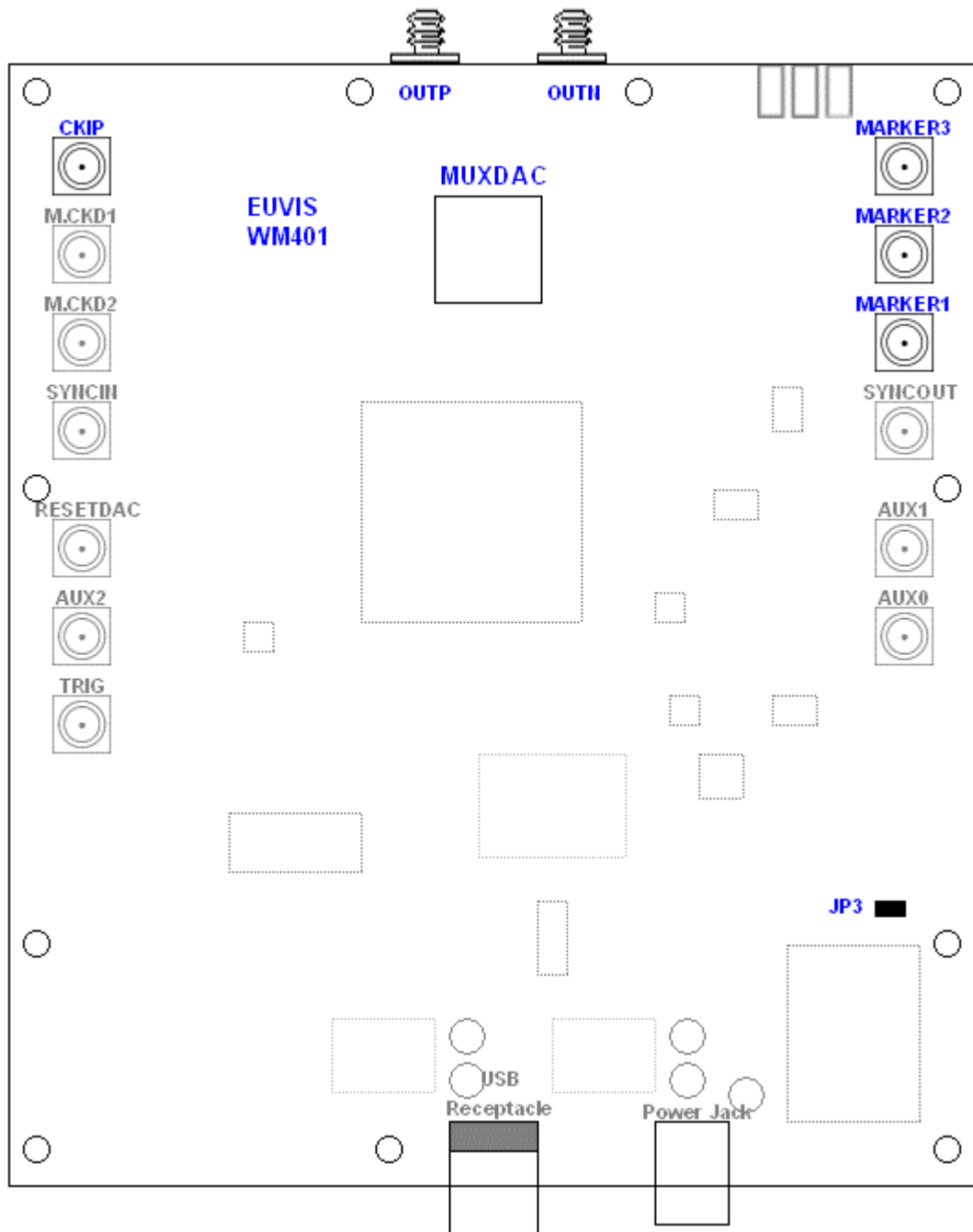
Parameter	Symbol	Min	Typical	Max	Unit
Operating Temperature	$T_o$		25		°C
Clock Frequency	$f_{ck}$	2		4	GHz
Frequency Resolution	$Df$	1/64			$f_{ck}$
Output Level	$V_{out}$	-635		0	mV
Output Power	$P_{out}$	-4		0	dBm
Output Residue Phase Noise <sup>1</sup>	$N_f$		-145		dBC/Hz
Clock Port Return Loss	$RL_{CK}$		10		dB
Output Port Return Loss	$RL_{RF}$		15		dB
Power Supply	+12V		+12		V
	$I_{+12}$		970		mA

<sup>1</sup>10 KHz offset

**TERMINAL DESCRIPTION**

Name	Function	I/O	Signal
GND	Ground		DC
+12V	Power, +12 V		DC
CKIP	Sampling Clock	I	RF
OUTP	Waveform Output Positive	O	RF
OUTN	Waveform Output Negative	O	RF
Marker	Waveform Start Marker	O	RF

### BOARD DIAGRAM



**DIMENSIONS AND MOUNT HOLE LOCATIONS**

Length	5.500 inches
Width	6.375 inches
Height	1.75 inches with heat sink (0.6 inches without heat sinks)
Weight	Less than 1 lb
11 Mount Hole Locations (Coordinates in Mils) (Origin is located at lower left corner)	250, 1375 250, 6125 250, 3875 250,250 1750,6125 2000,250 3750,6125 5250,250 5250,1375 5250,3875 5250,6125

Ordering Information:

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