

Ultra-Low Noise Dual Output Clock Module 5 – 6GHz variant

LW22-797735

TYPICAL APPLICATIONS

The Ultra Low Noise Oscillator is ideal for :

- RADAR System Master Clock
- Quantum Computing System Clock
- EW
- SIGINT
- Test and Measurement

PRODUCT FEATURES

- Multi-Crystal Dual Oven Oscillator for improved vibration performance
- Built-In RF Output Power and Input Power Supply BITE
- High Reliability and Ruggedness MTBF > 50,000 Hours
- Simple RS-422 Electronic Tuning capability for fine tuning over lifetime

GENERAL DESCRIPTION

This Ultra Low Noise Oscillator uses multiple crystal oscillators and a dual oven approach to achieve very low phase noise and improved vibration performance. This device is ideal for RADAR applications, offering exceptional performance and functionality in a small and lightweight form factor. The RF output power level is typically +14dBm on each port, with >50dB of isolation.



ELECTRICAL CHARACTERISTICS - Operational $T_A = 21\text{ }^\circ\text{C}$, +/-12V_{DC}, 50 Ω System (unless otherwise noted)

PARAMETER	MIN	TYP	MAX	UNITS
Operating Frequency Range	5	5.6	6	GHz
RF Output Power Level	+13	+14	+15	dBm
Isolation between RF Output ports	50			dB
DC Supply Voltage ^[1]	+/- 10.8	+/- 12	+/- 13.2	V
Current Consumption – Warm-up (10mins max)			+2.5 / -0.3	A
Current Consumption – Steady State		+1.3 / -0.3		A
Electronic Tuning Range		+/-6		ppm

[1] Option for single DC Supply arrangements. Quote requirements under LW22-797xxx when ordering.

Linwave reserves the right to make changes, without notice, in the products, including circuits, standard cells, and/or software, described or contained herein in order to improve design and/or performance.

For price, delivery and to place orders please contact
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Data sheet Iss 01 dated 18/06/21 DS00-797735,
 Activity No. 5187

ELECTRICAL CHARACTERISTICS - Operational $T_A = 21\text{ }^\circ\text{C}$, +/-12V_{DC}, 50Ω System (unless otherwise noted)

PARAMETER	MIN	TYP	MAX	UNITS
Operating Frequency Range	5	5.6	6	GHz
RF Output Power	+13	+14	+15	dBm
Output Return Loss	16			dB
Isolation between RF Output ports	50			dB
Current Consumption – Warm-up (10mins max)			+2.5 / -0.3	A
Current Consumption – Steady State		+1.3 / -0.3		A
Second Harmonic Emissions	-60	-70		dBc
Third Harmonic Emissions	-80			dBc
Higher Harmonic Emissions	-80			dBc
Non-Harmonic Spurious Emissions		-80	-75	dBc

CONTROL CHARACTERISTICS AND ADVANCED FEATURES

PARAMETER	VALUE
Built-In Test Functions	RF Output Power and Input Voltage
RF Output Power BIT	True = > +10dBm False = < +10dBm Accuracy: ±1dBm
Input Voltage BIT	True = ±12V Nominal (±5%) False = < ±10.8V to ±13.2V Accuracy: ±5%
Electronic Tuning Control	RS-422 via front panel 9 way Micro D (Socket)

MECHANICAL CHARACTERISTICS

PARAMETER	VALUE	UNITS
Dimensions ^[2]	214 x 172 x 36	mm
Mass	2000	g
RF Connectors	SMA Female	-
DC In	Via rear 25 way Micro D connector (Socket)	-
RF Power BIT and PSU BIT RS-422 Output	Via rear 25 way Micro D connector (Socket)	
Electronic Tuning Control RS-422 Input	Via front 9 way Micro D connector (Socket)	-
Cooling Method	External Heatsink to Baseplate (Not Supplied)	-

[2] Also see Outline Drawing. Outline drawing subject to customer changes under LW22-xxxxxx options.

ENVIRONMENTAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNITS
Case or Baseplate Temperature ^[3]	+18		+22	°C
Humidity ^[3]	10		90	%
Altitude ^[3]			30,000	ft
Vibration ^[3]	2 to 14Hz, ±1mm peak in any plane 14 to 100Hz, 0.8g _n in any plane			
Shock ^[3]	1.8g _n peak in any plane, 25ms half sine			
Ingress Protection	IP66			-

[3] Wider operating range available. Quote requirements under LW22-797xxx when ordering.

ESD Precautions.

Observe standard precautions when handling ESD-sensitive devices.

Customer Options.

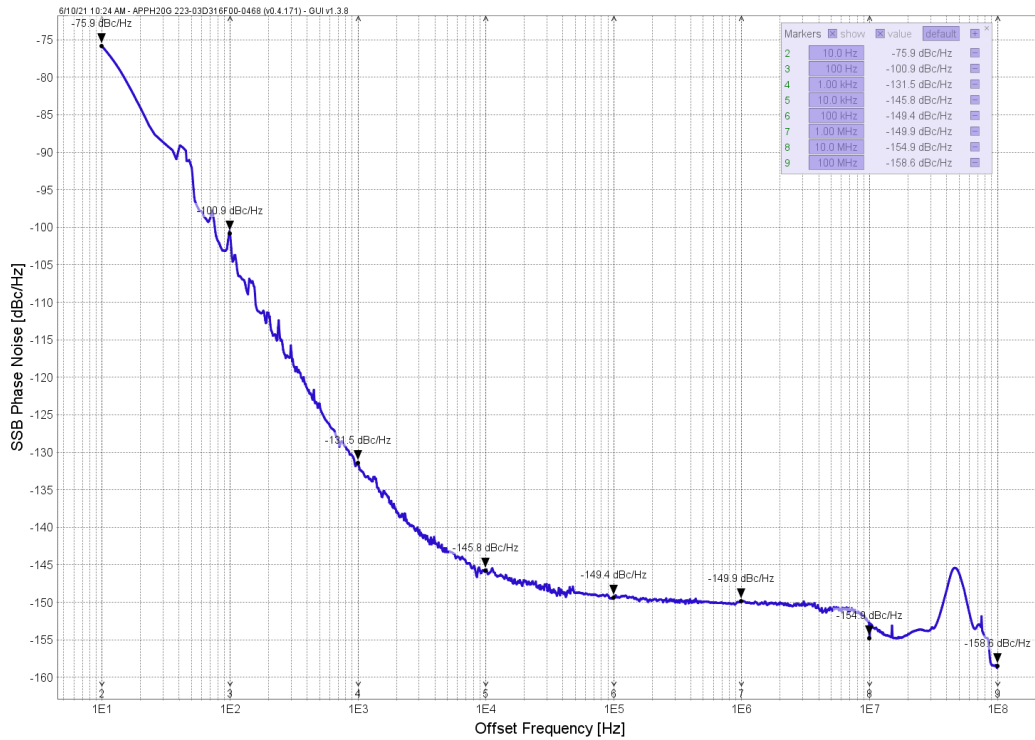
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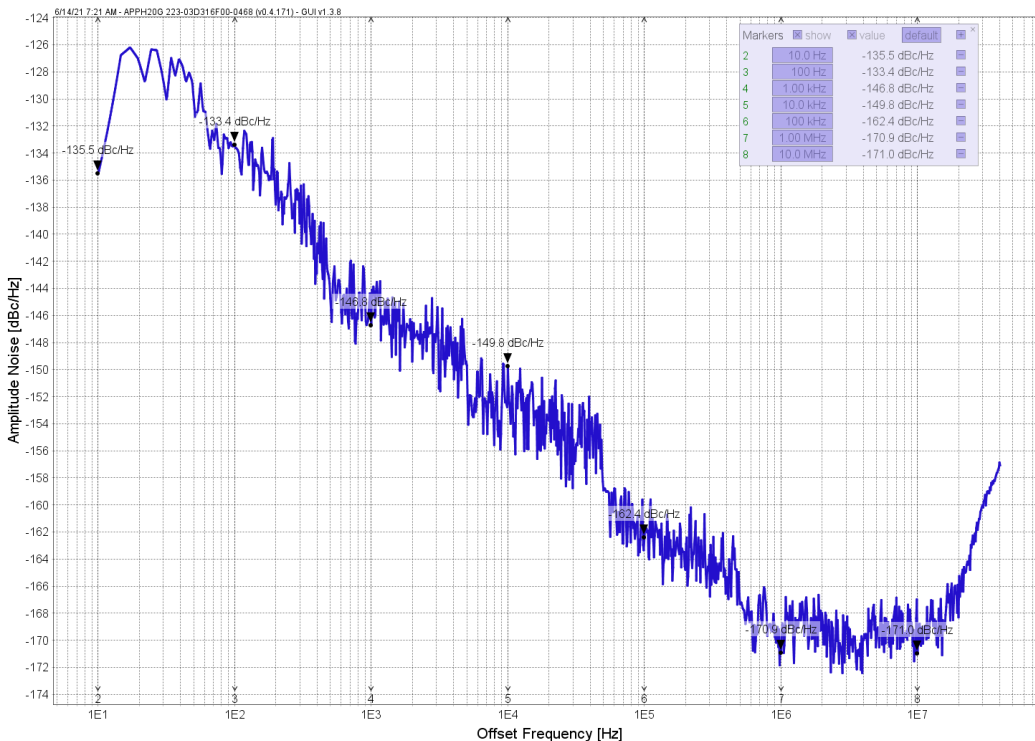
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Phase Noise Performance



Amplitude Noise Performance

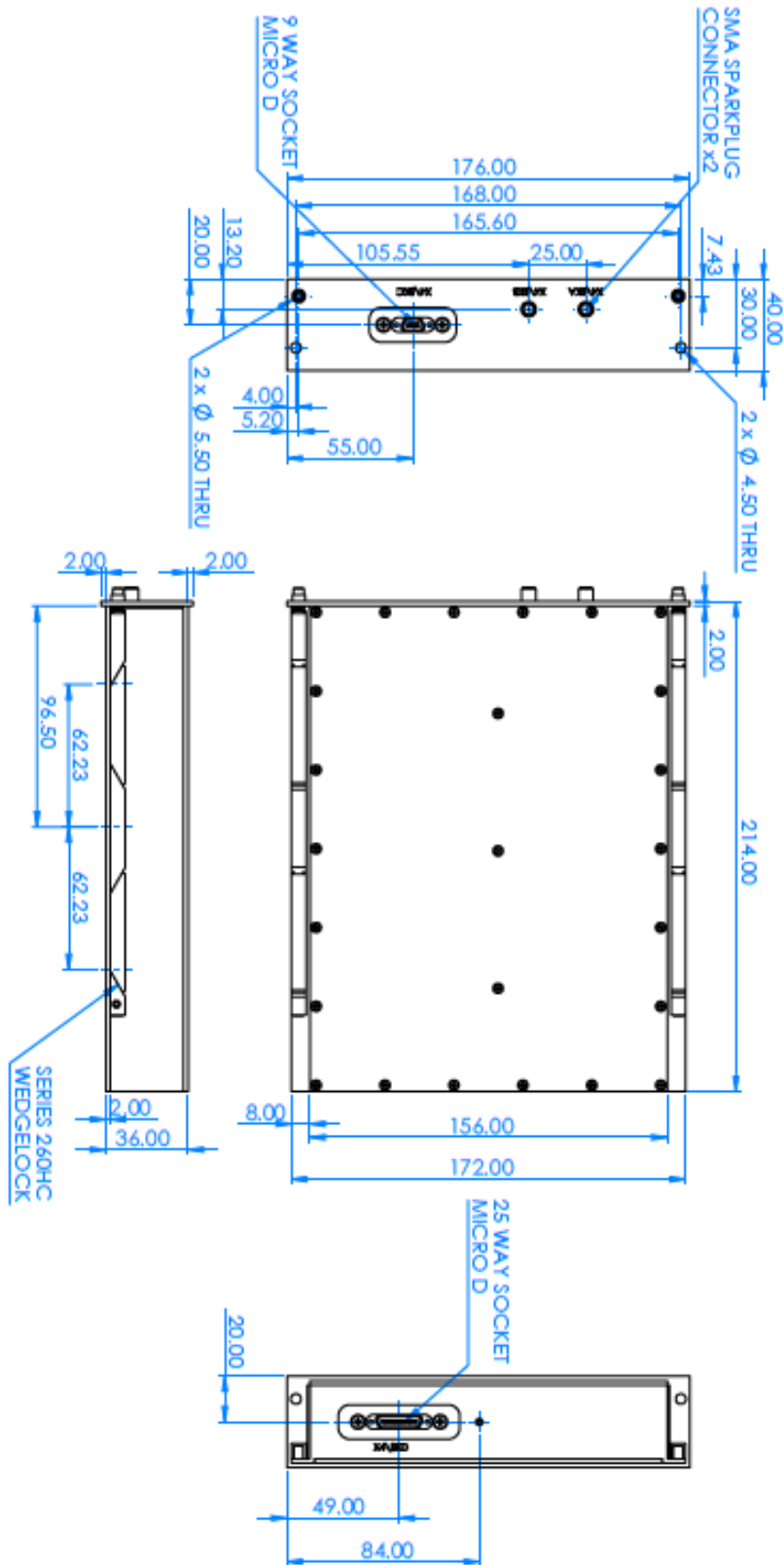


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OUTLINE DRAWING



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