INPUT (EXT REF)

No.	Connector(s)	Frequency	Level (into 50Ω)
1	J1	5 or 10 MHz EXT INPUT	+1 to +15 dBm

(Auto selects when present – External Mode Only)

OUTPUTS

No.	Connector(s)	Frequency	Level (into 50Ω)
3	J2, J3, J4	5 MHz	+13 ±2 dBm, each o/p
3	J5, J6, J7	10 MHz	+13 ±2 dBm, each o/p
3	J8, J9, J10	100 MHz	+13 ±2 dBm, each o/p

Port-to-Port Isolation

≥ 50 dB, 5 & 10 MHz outputs

≥ 20 dB, 100 MHz outputs

STABILITY

Aging

5×10^{-10} per day

after 30 days operating, typical (free-running)

Phase Noise (dBc/Hz)

- *Free running (not locked to external reference)*

	5 MHz	10 MHz	100 MHz
1 Hz	-120	-112	-90
10 Hz	-150	-142	-118
100 Hz	-170	-161	-130
300 Hz	-173	-163	-135
1 kHz	-174	-167	-150
10 kHz	-174	-169	-170
100 kHz	-174	-169	-174

Harmonics

≤ -30 dBc

Sub-Harmonics

≤ -40 dBc

PLL Divider/Reference Multiplier Products

≤ -40 dBc

Non-Harmonic Spurious

≤ -80 dBc, excluding line related spurs

Warm-up Time

1 hour, maximum; 15 minutes, typical (@ +25°C)

ENVIRONMENT

Laboratory, +15°C to +35°C operating temperature

ADJUSTMENT

Loop BW

(Internal 5 MHz ULN locked to 5 MHz or 10 MHz EXT REF)

Target Bandwidth: ≤ 2 Hz

Type 2 Loop

Mechanical Tuning

(Provided for adjustment of 5 MHz ULN when Internal Mode is selected only)

$\pm 1 \times 10^{-6}$

POWER REQUIREMENTS

Supply Voltage (Selectable)

120 VAC ±5% or 240 VAC ±5%, 50/60 Hz

- reversible power entry module provided
- with over voltage protection

REV	DATE	REVISION RECORD	DWN	AUTH
-	08-21-19	Initial Release	PAC	

CRYSTAL

Type

5 MHz & 100 MHz SC-cut

MECHANICAL

Dimensions

Standard 19" RETMA rack mount, 2U (3.5"), 17" depth, max

Mounting

Front panel mounting holes provided, 4 each

Connectors

RF Input: SMA(f), rear panel

RF Outputs: SMA(f), rear panel

AC: IEC-320 C14, EMI Filtered, switched and fused, rear panel

(Standard 6 ft. power cord provided; Nema 5-15P to IEC 320 C13; 10 Amp)

TTL Status: DB-15, rear panel (Reference and Lock Alarms)

Pin 1: External Phase Lock Alarm (10 MHz)

Pin 4: External Reference Detect

Pin 5: Internal Reference Detect (100 MHz)

Pin 6: Ground

Front Panel

Painted White with Black silkscreen lettering

Monitoring

LED's provided on front panel for:

-Lock Detect for External Reference PLL (Green = Good; Red = Bad)

-Power (Green = ON)

ENVIRONMENT

Operating Temperature

0°C to +50°C

Storage Temperature

-40°C to +70°C

DESIGN

Output signals will have a fixed phase relationship with the external 5 or 10 MHz reference when phase locked.

Wenzel Associates, Inc.
Austin, Texas

Title:

5, 10 & 100 MHz Frequency Standard – W2U

P/N:	Rev:	Date:	Drawn:	Ref:
501-32763-W2U	-	08-21-19		32148

Tolerances: (except as noted) Dimensions are in inches	0.XX Dec:	0.XXX Dec:	FSCM:	
	±0.030"	±0.010"	62821	Page 1 of 3

MODES

(Mechanical switch provided to select either internal or external mode of operation)

External Mode

When external mode is selected, the electrical tuning of the internal 5 MHz ULN is routed to the External Reference PLL for phase locking with an external reference signal.

Internal Mode

When internal mode is selected, the electrical tuning of the internal 5 MHz ULN is routed to the Course and Fine potentiometers for mechanical adjustment.

OTHER

Label

Use conventional label with the following information:
501-32763-W2U (Current Rev.)
5, 10 & 100 MHz
120 or 240 VAC
Serial # - Date Code

Test Data

Output Levels
Phase Noise
Harmonics
Sub-Harmonics
Spurious

EMC & Electrical Safety Certification

Tested to EN 61000-6-4:2007 with A1:2011 and IEC/EN 61010-1:2010

- CE Compliant
- RCM Compliant
- RoHS 9/10 Compliant

FRONT

REAR

PIN	Function
1	Phase Lock Alarm
2	N/C
3	N/C
4	EXT Ref Detect
5	INT Lock Detect
6	GND

Wenzel Associates, Inc.
Austin, Texas

Title: **5, 10 & 100 MHz Frequency Standard – W2U**

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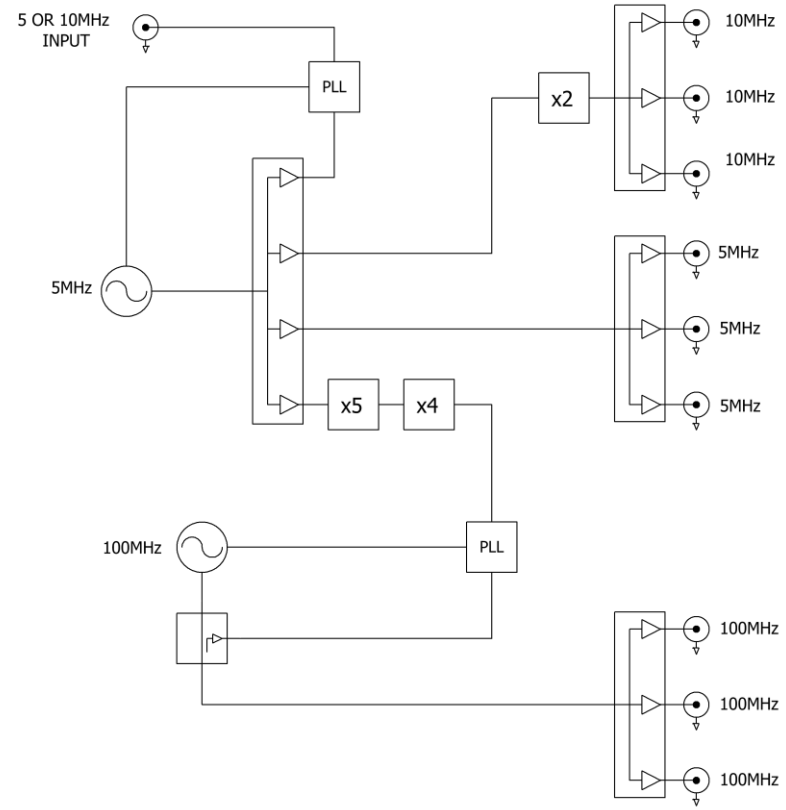

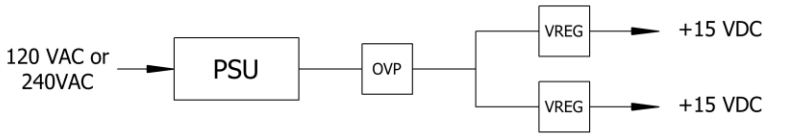

Wenzel Associates, Inc. Austin, Texas					
Title: **5, 10 & 100 MHz Frequency Standard – W2U**					
P/N: **501-32763-W2U**	Rev: **-**	Date: **08-21-19**	Drawn:	Ref: 32148	
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