INPUT Packaging Frequency 10 MHz, ±1 x 10<sup>-7</sup> Mounting Level +7 dBm ±5 dB into 50 ohms **POWER REQUI** OUTPUT Frequency 50 MHz Warm-Up Powe Level +13 dBm ±2 dB into 50 ohms **STABILITY** Output Phase Noise L(f) **Total Power** (Free-Running) -101 dBc/Hz 10 Hz ADJUSTMENT 100 Hz -136 dBc/Hz Loop BW 1 kHz -164 dBc/Hz 10 kHz -176 dBc/Hz -176 dBc/Hz CRYSTAL 100 kHz Aging  $\pm 1 \times 10^{-6}$  per year after 30 days OTHER operating, typical Test Data **Temperature Stability**  $\pm 5 \times 10^{-7}$  free-running from 0 to  $\pm 50^{\circ}$ C, (Ref. +25°C) Harmonics -30 dBc PLL Divider Products -70 dBc **Non-Harmonic Spurious** -80 dBc, excluding power supply line related spurs Phase Lock Alarm TTL Locked: +3.5 VDC to +5.2 VDC (Hi) Out-of-Lock: +0.8 VDC max (Lo) Phase Lock Voltage Monitor Voltage monitor pin supplied MECHANICAL Dimensions 2.5 x 3.5 x 0.8" Connectors SMA(f)'s and solder pins on side Feed-thru terminals for lock alarm. supply and phase lock voltage monitor

Packaging Nickel-plated machined aluminum housing Through holes, 4 places Threaded inserts on base, 4 places POWER REQUIREMENTS Supply Voltage +15 VDC ±5% Warm-Up Power 8 Watts at startup for 5 minutes at +25° C Total Power 5 Watts at steady state +25°C ADJUSTMENT Loop BW Target Bandwidth: <10 Hz Type 2 Loop CRYSTAL Type 2 0 Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious       00000 Dist 1000 Dist 10000 Dist 1000 Dist		REV	DATE	REVISION RECORD			DWN	AUTH
Nickel-plated machined aluminum housing Mounting Through holes, 4 places POWER REQUIREMENTS Supply Voltage +15 VDC ±5%         Warm-Up Power 8 Watts at stat-up for 5 minutes at +25°C Total Power 5 Watts at statey state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious       0000 Dis- total free-running) Temperature Stability (free-running) Temperature Stability (free		-	07-22-11	Initial Release	Initial Release		PAC	
Nickel-plated machined aluminum housing Mounting Through holes, 4 places POWER REQUIREMENTS Supply Voltage +15 VDC ±5%         Warm-Up Power 8 Watts at stat-up for 5 minutes at +25°C Total Power 5 Watts at statey state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious       0000 Dis- total free-running) Temperature Stability (free-running) Temperature Stability (free	Packaging							
Mounting Through holes, 4 places Threaded inserts on base, 4 places POWER REQUIREMENTS Supply Voltage +15 VDC ±5% Warm-Up Power 8 Watts at start-up for 5 minutes at +25°C ADJUSTMENT Total Power 5 Watts at statedy state +25°C ADJUSTMENT Type 2 Loop CRVSTAL Type 2 Loop CRVSTAL Type 5 00 HHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Harmonics, PLL Products, Spurious       00,0930 Dist 00,0930 Dist 1,200 1,								
Through holes, 4 places Threaded inserts on base, 4 places POWER REQUIREMENTS Supply Voltage +15 VDC ±5% Warm-Up Power 8 Watts at starturup for 5 minutes at +25° C Total Power 5 Watts at stady state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Temperature Stability (free-running) Temperatu								
Threaded inserts on base, 4 places POWER REQUIREMENTS Supply Voltage +15 VDC ±5% Warm-Up Power 8 Watts at start-up for 5 minutes at +25% Total Power 5 Watts at steady state +25% ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 2 Loop CRYSTAL Type 2 Loop CRYSTAL Phase Noise (free-running) Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Wenzel Associates, Inc. Lue Wenzel Associates, Inc. Lue Wenzel Associates, Inc. Lue The 50 MHz-SC ULN Phase Lock Crystal Oscillator The 50 MHz-SC ULN Phase Lock Crystal Oscillator The 50 MHz-SC ULN Phase Lock Crystal Oscillator The 50 MHz-SC ULN Phase Lock Crystal Oscillator								
POWER REQUIREMENTS Supply Voltage +15 VDC ±5% Warm-Up Power 8 Watts at startup for 5 minutes at +25° C Total Power 5 Watts at steady state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious Harmonics, PLL Products, PL Harmonics, PL								
All Source 15% Warm-Up Power 8 Watts at start-up for 5 minutes at +25°C Total Power 5 Watts at steady state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 2 Loop Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious Wenzel Associates, Inc. Number of the stability of the st								
All Source 15% Warm-Up Power 8 Watts at start-up for 5 minutes at +25°C Total Power 5 Watts at steady state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 2 Loop Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious Wenzel Associates, Inc. Number of the stability of the st	Supply Voltage							
Warru-Up Power 8 Watts at start-up for 5 minutes at +25° C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 2 Loop CRYSTAL OthUt Level Phase Noise (free-running) Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Mounting Holes 1 250 1 200 1		Ø0.0930 Dia				16 X .(	060-80	
B Watis at start-up for 5 minutes at +25° C Total Power 5 Watis at steady state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Wenzel Associates, Inc. Austin, Texas The: 50 MHz-SC ULN Phase Lock Crystal Oscillator PN: 50 MHz-SC ULN Phase Lock Crystal Oscillator PN: 50 MHz-SC ULN Phase Lock Crystal Oscillator PN: 50 Hz-24780 PSM: P	Warm-Up Power			- 2.500	<b>8</b>	Таррес	d Holes	
tat +25° C Total Power 5 Watts at steady state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious						2		
5 Watts at steady state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Wenzel Associates, Inc. The 50 MHz-SC ULN Phase Lock Crystal Oscillator The 50 MHz-SC ULN Phase Lock Crystal Oscillator The Four-24780 Cover Products Reference Sport In The The 50 MHz-SC ULN Phase Lock Crystal Oscillator The The 50 MHz-SC ULN Phase Lock Crystal Oscillator Products Reference Sport In Cover Products Reference Sport In Cover Products Phase Lock Crystal Oscillator Products Phase Lock Crystal Oscillator Products Phase Lock Crystal Oscillator			$\backslash [$		~ 1.665	<b>`</b>   •_	╲║_	1.490
5 Watts at steady state +25°C ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Wenzel Associates, Inc. The 50 MHz-SC ULN Phase Lock Crystal Oscillator The For Date: 0 XX Dec: 0 XX Dec: 0 XX Dec: 150M Terest Date 0 XX Dec: 0 XX Dec: 150M Terest Date 0 XX Dec: 150M Terest Date 1 X Z Dec: 150M Terest Date 1 X Z Dec: 100 Terest Date 1 X Z Dec: 100 Terest Date 1 X Z Dec: 100 1	Total Power		N <sub>b</sub>			,    (	)    -	1.250
ADJUSTMENT Loop BW Target Bandwidth: < 10 Hz Type 2 Loop CRYSTAL Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Wenzel Associates, Inc. Austin, Texas Tite: 50 MHz-SC ULN Phase Lock Crystal Oscillator PN: 50 MHz-SC ULN Phase Lock Crystal Oscillator	5 Watts at steady state +25°C		Ψ		Ψ 1.200	′ ∥.∖-		
$\frac{1}{1} \operatorname{arget Bandwidth:} < 10 \text{ Hz} \\ \text{Type 2 Loop} \\ \text{CRYSTAL} \\ \text{Type 50 MHz SC-cut} \\ \text{OTHER} \\ \text{Test Data} \\ \text{Output Level} \\ \text{Phase Noise (free-running)} \\ \text{Temperature Stability (free-running)} \\ \text{Harmonics, PLL Products, Spurious} \\ \text{Harmonics, PL Product, Spurious} \\ Harmonics, PL Product, Spu$								
$\frac{1}{1} \operatorname{arget Bandwidth:} < 10 \text{ Hz} \\ \text{Type 2 Loop} \\ \text{CRYSTAL} \\ \text{Type 50 MHz SC-cut} \\ \text{OTHER} \\ \text{Test Data} \\ \text{Output Level} \\ \text{Phase Noise (free-running)} \\ \text{Temperature Stability (free-running)} \\ \text{Harmonics, PLL Products, Spurious} \\ \text{Harmonics, PL Product, Spurious} \\ Harmonics, PL Product, Spu$	Loop BW							
Type 2 Loop CRYSTAL Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious $4 \times 2.55$ readed Inserts $1 \times 2.55$ readed Inserts $1 \times 2.55$ readed Inserts $1 \times 2.55$ readed Inserts $1 \times 2.55$ $1 \times $								
CRYSTAL Type 50 MHz SC-cut OTHER Test Data Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Harmonics, PLL Products, Spurious Wenzel Associates, Inc. Austin, Texas Wenzel Associates, Inc. Austin, Texas The: 50 MHz-SC ULN Phase Lock Crystal Oscillator PN: 50 MHz-SC ULN Phase Lock Crystal Oscillator		2 50			0.00	,		000
50 MHz SC-cut         OTHER         Test Data         Output Level         Phase Noise (free-running)         Temperature Stability (free-running)         Harmonics, PLL Products, Spurious         Image: Specific stability (free-running)         Image: Specific stability (free-running)      <		3.50			- 0.000	,	-	
50 MHz SC-cut         OTHER         Test Data         Output Level         Phase Noise (free-running)         Temperature Stability (free-running)         Harmonics, PLL Products, Spurious         Image: Specific stability (free-running)         Image: Specific stability (free-running)      <	Туре							
Test Data         Output Level         Phase Noise (free-running)         Temperature Stability (free-running)         Harmonics, PLL Products, Spurious         Image: Specific and the	50 MHz SC-cut							
Output Level Phase Noise (free-running) Temperature Stability (free-running) Harmonics, PLL Products, Spurious <ul> <li></li></ul>	OTHER							
Output Level Phase Noise (free-running) Harmonics, PLL Products, Spurious       Image: Constraint of the second seco	Test Data		4			° –	<u>_°∥−</u>	1.010
Temperature Stability (free-running) Harmonics, PLL Products, Spurious         Image: specific spec	Output Level		φ		$-\phi$ = 1.200	<b>'</b>    (	)    -	1.250
Temperature Stability (free-running) Harmonics, PLL Products, Spurious         Image: Specific stability (free-running)					C 1 66		´ ∘    −	1.490
Image: Second	Temperature Stability (free-running)	_ <u>t</u>				) "–	⊸───	
Image: State of the state	Harmonics, PLL Products, Spurious				3			
0.80       Image: Construction of the second o		liedueu Insert				 0 0		
Image: State of the state			800 250		165	240	240	
0.80       Image: Construction of the second o					0.400		E.m.	tion
Image: Second and the second and th		Å.				<b>`</b>		
Image: State of the state		0.80	<u>O</u>		•) – 0.000	RFOut	RF Signa	lOut
Image: State of the state		ŧ	RF OUT 1				Alarm	
Wenzel Associates, Inc.         Title:         50 MHz-SC ULN Phase Lock Crystal Oscillator         P/N:       6         501-24780       -         O7-22-11       0rawn:         Tolerances:       0.XX Dec:         0.XX Dec:       0.XX Dec:					0.400	Ó GND		
Austin, Texas           Title:         50 MHz-SC ULN Phase Lock Crystal Oscillator           P/N:         P/N:         Date:         Drawn:         Ref:           501-24780         -         07-22-11         Prawn:         Ref:           Tolerances:         0.XX Dec:         0.XXX Dec:         FSCM:         4         4								
Austin, Texas           Title:         50 MHz-SC ULN Phase Lock Crystal Oscillator           P/N:         P/N:         Date:         Drawn:         Ref:           501-24780         -         07-22-11         Prawn:         Ref:           Tolerances:         0.XX Dec:         0.XXX Dec:         FSCM:         4         4								
Austin, Texas           Title:         50 MHz-SC ULN Phase Lock Crystal Oscillator           P/N:         P/N:         Date:         Drawn:         Ref:           501-24780         -         07-22-11         Prawn:         Ref:           Tolerances:         0.XX Dec:         0.XXX Dec:         FSCM:         4         4								
Austin, Texas           Title:         50 MHz-SC ULN Phase Lock Crystal Oscillator           P/N:         P/N:         Date:         Drawn:         Ref:           501-24780         -         07-22-11         Drawn:         Ref:           Tolerances:         0.XX Dec:         0.XXX Dec:         FSCM:         4         4								
Austin, Texas           Title:         50 MHz-SC ULN Phase Lock Crystal Oscillator           P/N:         P/N:         Date:         Drawn:         Ref:           501-24780         -         07-22-11         Prawn:         Ref:           Tolerances:         0.XX Dec:         0.XXX Dec:         FSCM:         4         4								
Title:           50 MHz-SC ULN Phase Lock Crystal Oscillator           P/N:         Rev:         Date:         Drawn:         Ref:           501-24780         -         07-22-11         Drawn:         Ref:           Tolerances:         0.XX Dec:         0.XXX Dec:         FSCM:								
50 MHz-SC ULN Phase Lock Crystal Oscillator           P/N:         Rev:         Date:         Drawn:         Ref:         ULN           501-24780         -         07-22-11         Drawn:         Ref:         ULN								
P/N:         Rev:         Date:         Drawn:         Ref:           501-24780         -         07-22-11         Drawn:         ULN           Tolerances:         0.XX Dec:         0.XXX Dec:         FSCM:         4         4								
501-24780         -         07-22-11         ULN           Tolerances: (event as poted)         0.XX Dec:         0.XXX Dec:         FSCM:         1         1		SU WITZ-SU ULIN PRASE LOCK URVSTAL USCHIATOR						
Tolerances:     0.XX Dec:     0.XXX Dec:     FSCM:			1700			Drawn:		
(except as noted)		501-2	24780	-   07-	22-11			
(except as noteo) Dimensions are in inches $+0.030$ " $+0.010$ " $62821$ Page 1 of 1				0.XX Dec: 0	).XXX Dec:			
				±0.030"	±0.010"	62821	Page 1	of <b>1</b>