

Settings		Residual Noise [T1 w/o spurs]		Phase Detector +20 dB			
Signal Frequency:	10.000000 MHz	Int PHN (10.0 .. 5.0 M)	-89.8 dBc				
Signal Level:	8.91 dBm	Residual PM	2.610 m°				
Cross Corr Mode	Harmonic 1	Residual FM	63.768 Hz				
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.7251 ps				

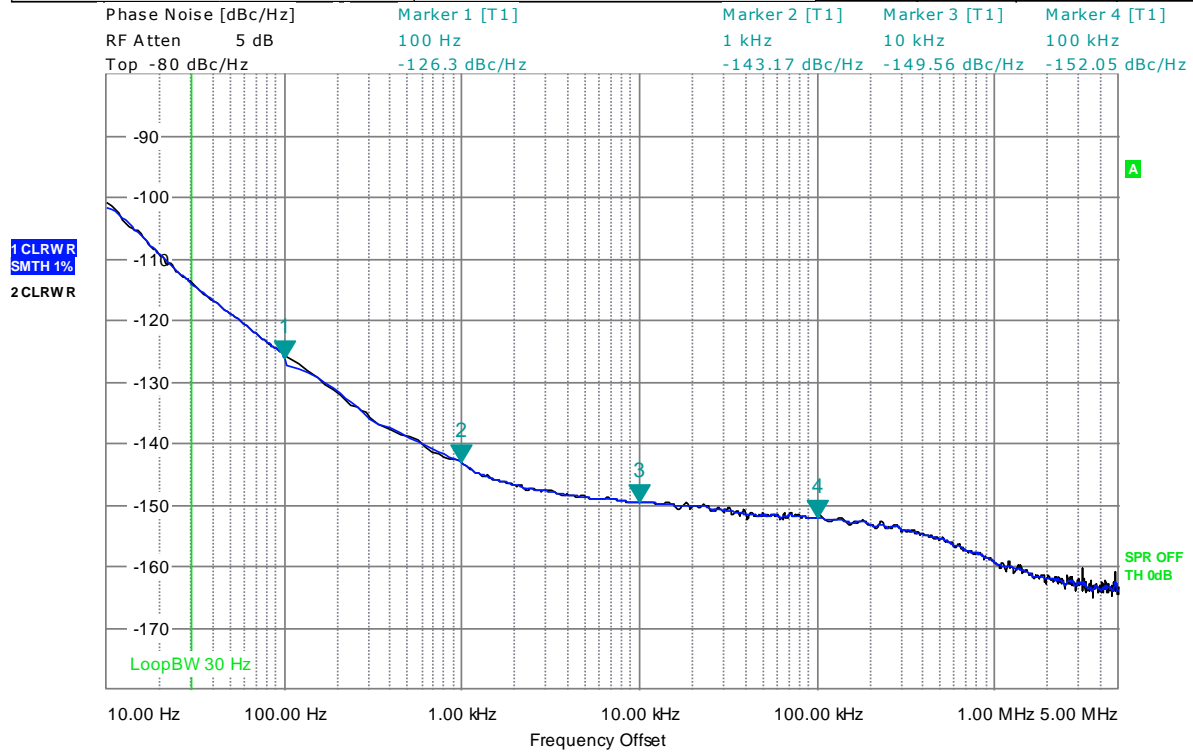


Figure 1 Leo Bodnar miniGPSDO@10MHz

Optimum Settings for Leo Bodnar miniGPSDO courtesy of Leo Bodnar electronics.

97600	GPS reference, Hz
1	N31
10	N2_HS
6250	N2_LS
5	N1_HS
122	NC1_LS 122
15	BW Fosc = 6.1 GHz
Update	Signal loss count: 0

R&S FSUP 8 Signal Source Analyzer		LOCKED			
Settings		Residual Noise [T1 w/o spurs]		Phase Detector +40 dB	
Signal Frequency:	116.000000 MHz	Int PHN (10.0 .. 10.0 M) -75.6 dBc			
Signal Level:	7.59 dBm	Residual PM	13.435 m°		
Cross Corr Mode	Harmonic 1	Residual FM	115.821 Hz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.3217 ps		

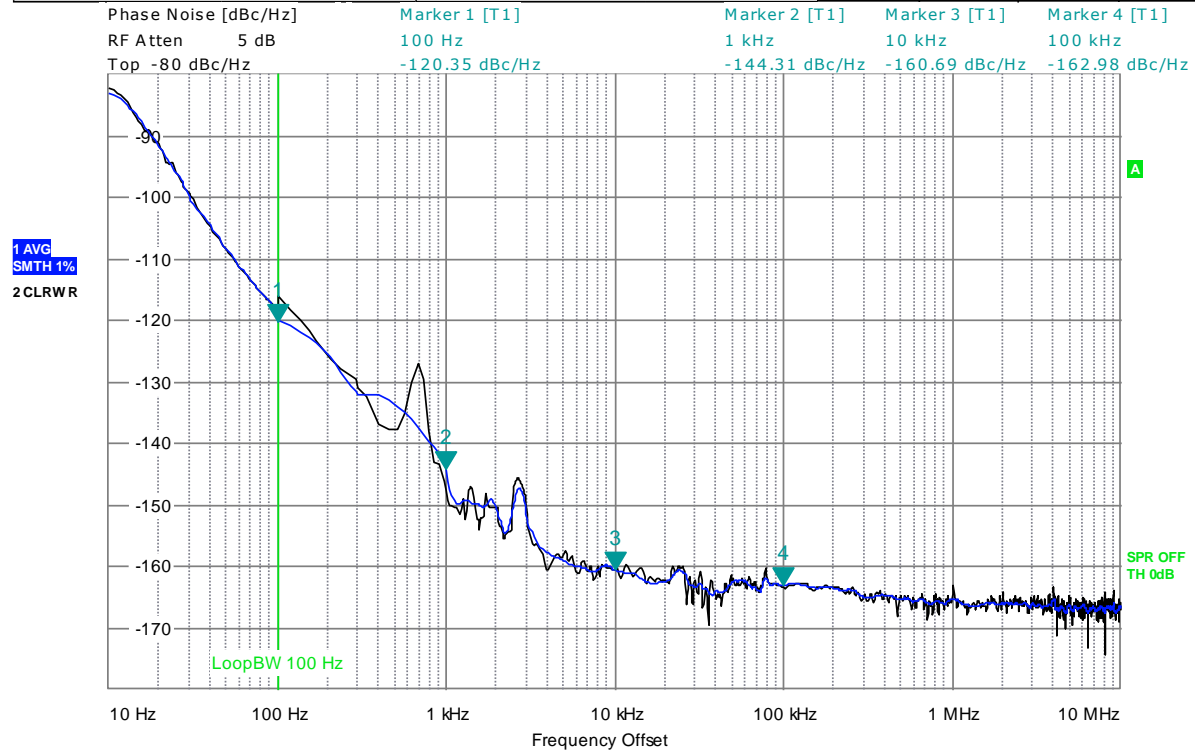


Figure 2: VHF Design 116MHz xtal oscillator locked to FSUP 10MHz clock

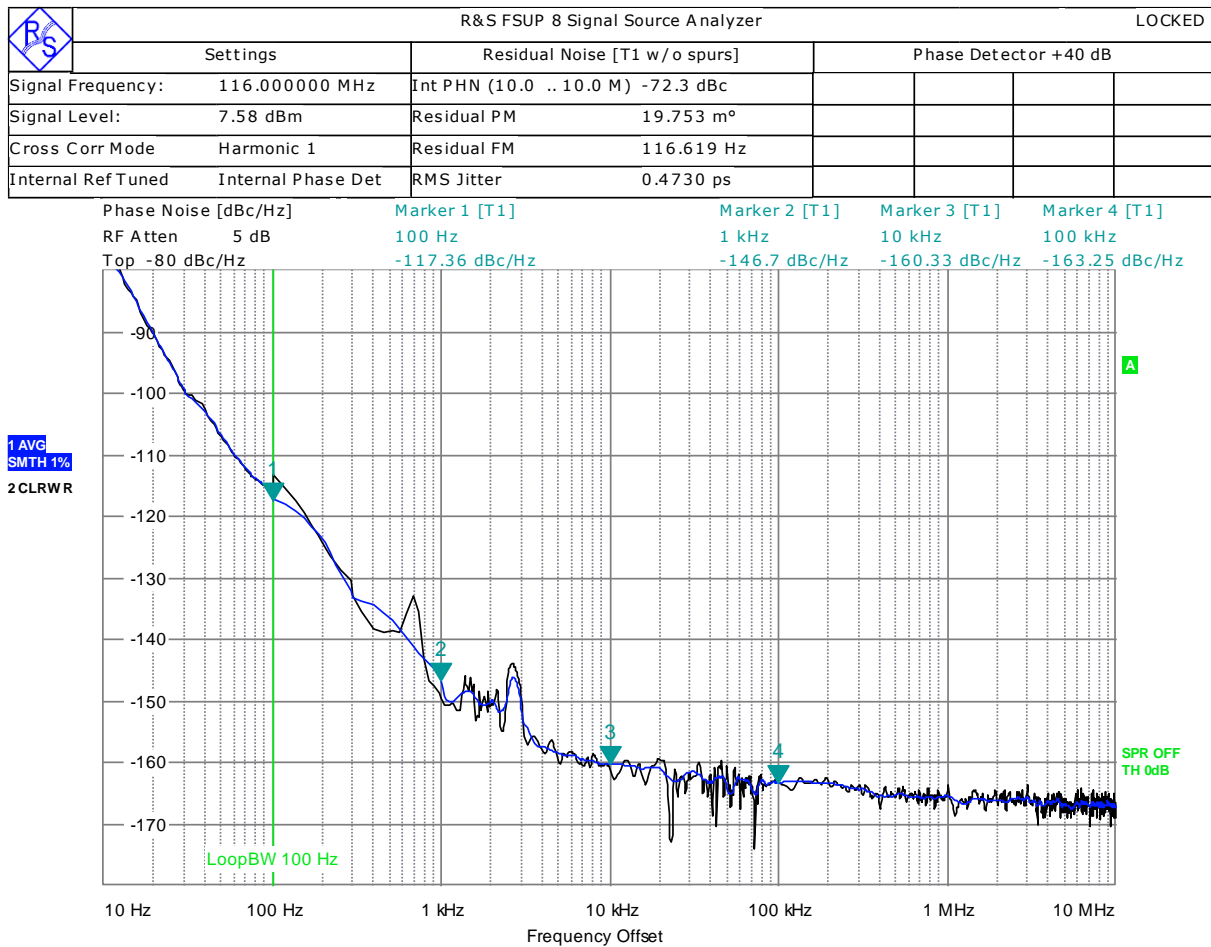


Figure 3: VHF Design 116MHz xtal oscillator locked to Leo Bodnar miniGPSDO @ 10MHz

R&S FSUP 8 Signal Source Analyzer		LOCKED			
Settings		Residual Noise [T1 w/o spurs]		Phase Detector +40 dB	
Signal Frequency:	116.000000 MHz	Int PHN (10.0 .. 10.0 M)	-81.3 dBc		
Signal Level:	5.9 dBm	Residual PM	7.012 m°		
Cross Corr Mode	Harmonic 1	Residual FM	70.005 Hz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.1679 ps		

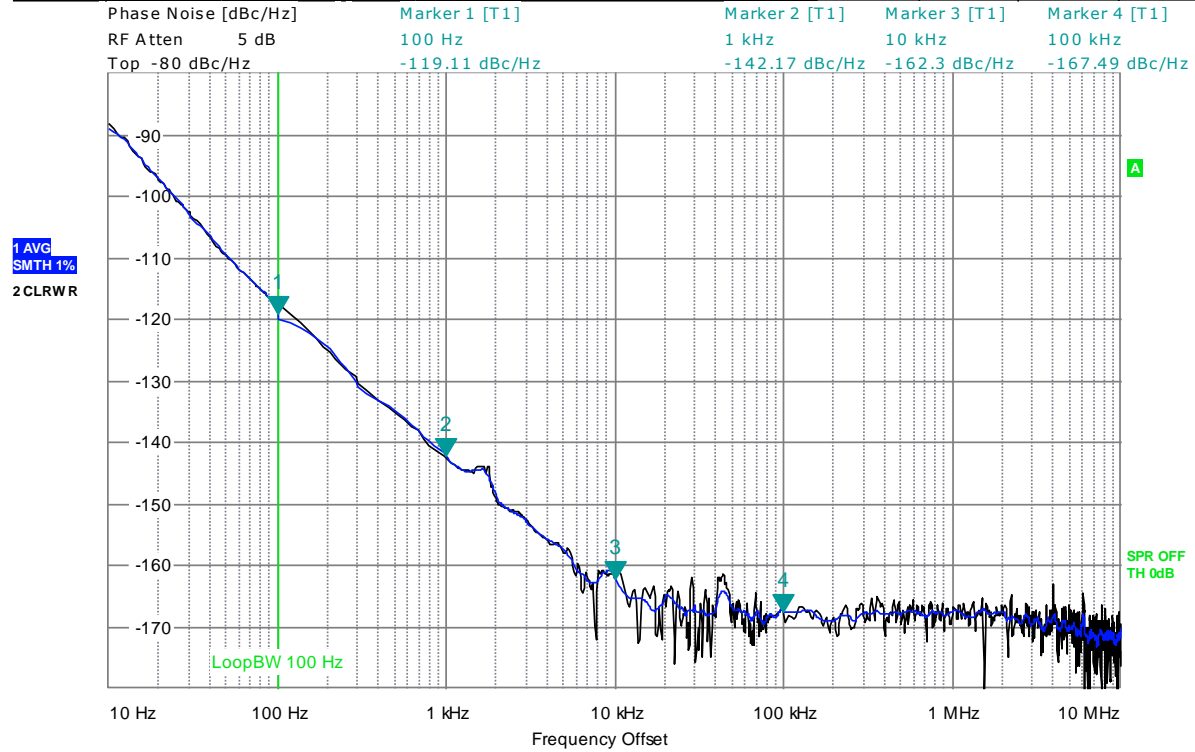


Figure 4 Kuhne MKU-XO 1 PLL 116MHz locked to FSUP

R&S FSUP 8 Signal Source Analyzer		LOCKED			
Settings		Residual Noise [T1 w/o spurs]		Phase Detector +40 dB	
Signal Frequency:	116.000000 MHz	Int PHN (10.2 .. 10.0 M)	-81.1 dBc		
Signal Level:	5.85 dBm	Residual PM	7.121 m°		
Cross Corr Mode	Harmonic 1	Residual FM	74.007 Hz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.1705 ps		

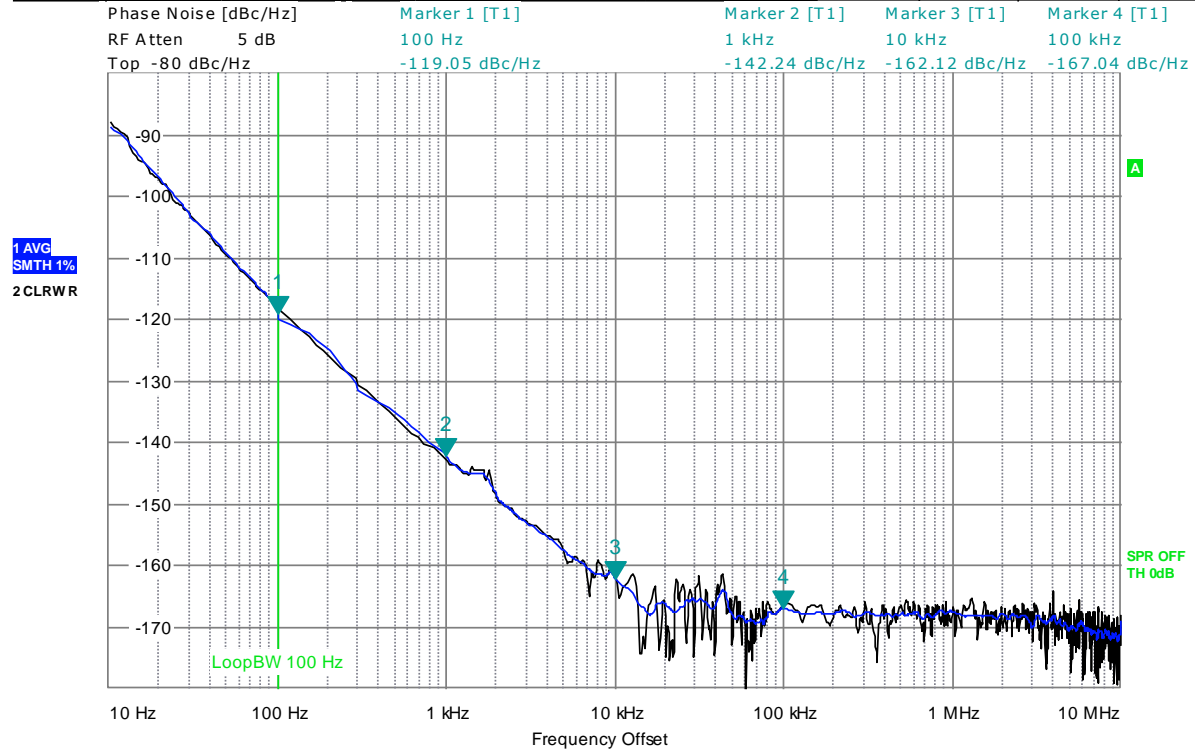


Figure 5 Kuhne MKU-XO 1 PLL 116MHz locked to Leo Bodnar miniGPSDO @ 10MHz

R&S FSUP 8 Signal Source Analyzer		LOCKED			
Settings		Residual Noise [T1 w/o spurs]		Phase Detector +40 dB	
Signal Frequency:	99.999799 MHz	Int PHN (1.0 .. 1.0 M)	-63.8 dBc		
Signal Level:	10.4 dBm	Residual PM	52.284 m°		
Cross Corr Mode	Harmonic 1	Residual FM	1.487 Hz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	1.4523 ps		

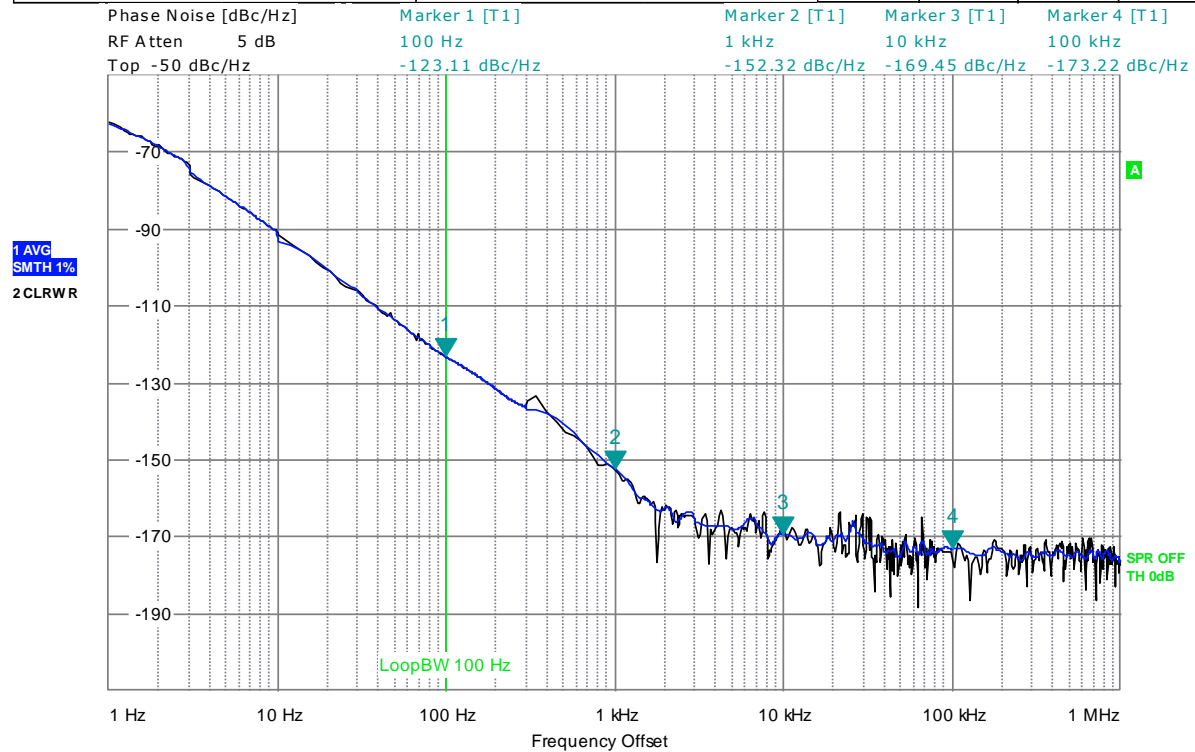
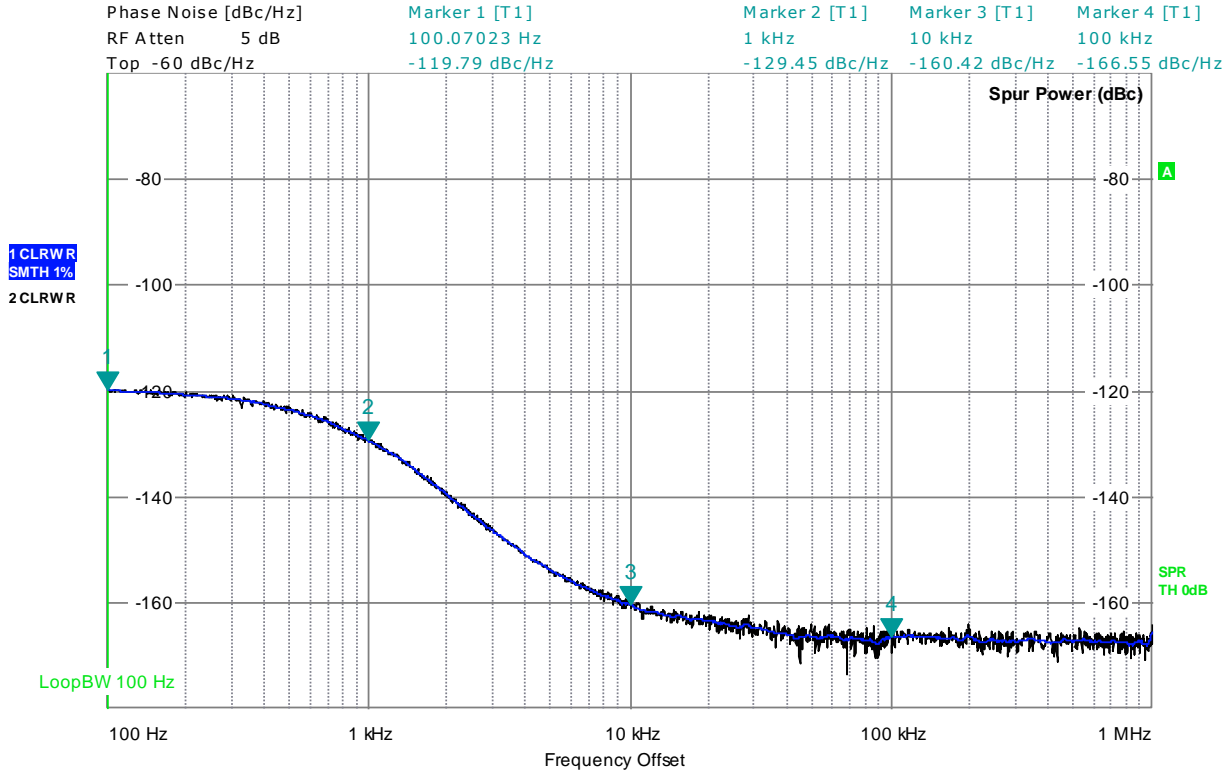


Figure 6 Wenzel 100MHz OCXO untrimmed

R&S FSUP 8 Signal Source Analyzer		LOCKED			
Settings		Residual Noise [T1]		Phase Detector +20 dB	
Signal Frequency:	27.000000 MHz	Int PHN (100.1 .. 999.8 k) -93.3 dBc			
Signal Level:	8.59 dBm	Residual PM	1.761 m°		
Cross Corr Mode	Harmonic 1	Residual FM	3.504 Hz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.1812 ps		



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Figure 7 DF9NP 27 MHz PLL locked to FSUP 10MHz output.