



KLOVE



EDUCATIONAL **MEDIA** FOUNDATION

Intermodulation Interference Measurement

W248BF
Granville WV
97.5 MHz
ERP 0.010kW
FCC FIN 140169

W230AY
Westover WV
93.9 MHz
ERP 0.085kW
FCC FIN 140163

All measurements made by Alex Mackensen

Date of Measurements 03/08/2024



W248BF Results

Equipment Tested

Transmitter
Crown FM150
SN 150E94-5
EMF 1021975

Transmitter Power

Transmitter Voltage: 18.4 V
Transmitter Current: 3.22 A
Transmitter Efficiency: 56.7%
Indirect Power Calculation: 0.0336 kW
Transmitter Power Meter Reading: 0.034 kW
TPO: 0.034 kW

Frequency Check

Assigned Frequency: 97.5 MHz
Actual Frequency: 97.5000141 MHz
Variance: 14.1 Hz
Tolerance Allowed: 2,000 Hz

Harmonic Distortion

Harmonics	Frequency	Measured Readings	FCC Limit = -53.00 dBc		
			Probe & Filter Gain or Loss	dBc	Clearance dB
X1	97.5	-0.9	0.0	0.00	
X2	195.0	-99.0	0.02	-98.04	45.0
X3	292.5	-100.5	-1.06	-98.51	45.5
X4	390.0	-98.7	-3.00	-94.75	41.8
X5	487.5	-98.4	-5.56	-91.93	38.9
X6	585.0	-97.6	-8.34	-88.32	35.3
X7	682.5	-97.2	-10.66	-85.64	32.6
X8	780.0	-101.5	-13.05	-87.52	34.5
X9	877.5	-100.0	-14.84	-84.22	31.2



W230AY Results

Equipment Tested

Transmitter
Crown FM500
SN A135575
EMF 1102450

Transmitter Power

Transmitter Voltage: 35.2 V
Transmitter Current: 10.52 A
Transmitter Efficiency: 78%
Indirect Power Calculation: 0.2888 kW
Transmitter Power Meter Reading: 0.291 kW
TPO: 0.291 kW

Frequency Check

Assigned Frequency: 93.9 MHz
Actual Frequency: 93.8993605 MHz
Variance: 639.5 Hz
Tolerance Allowed: 2,000 Hz

Harmonic Distortion

			FCC Limit = -62.29 dBc		
Harmonics	Frequency	Measured Readings	Probe & Filter Gain or Loss	dBc	Clearance dB
X1	93.9	-0.8	0.0	0.00	
X2	187.8	-95.9	0.02	-95.05	32.8
X3	281.7	-94.7	-1.06	-92.83	30.5
X4	375.6	-96.0	-3.00	-92.14	29.9
X5	469.5	-94.3	-5.56	-87.88	25.6
X6	563.4	-94.2	-8.34	-85.01	22.7
X7	657.3	-94.1	-10.66	-82.56	20.3
X8	751.2	-96.5	-13.05	-82.65	20.4
X9	845.1	-96.7	-14.84	-81.02	18.7



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Intermodulation Measurement

W230AY ERP Based Limit: -53 dB Below Carrier

W230AY Measured Carrier: -20.92 dB

Adjusted ERP Based Limit Line: -73.92 dB

W248BF ERP Based Limit: -62.29 dB Below Carrier

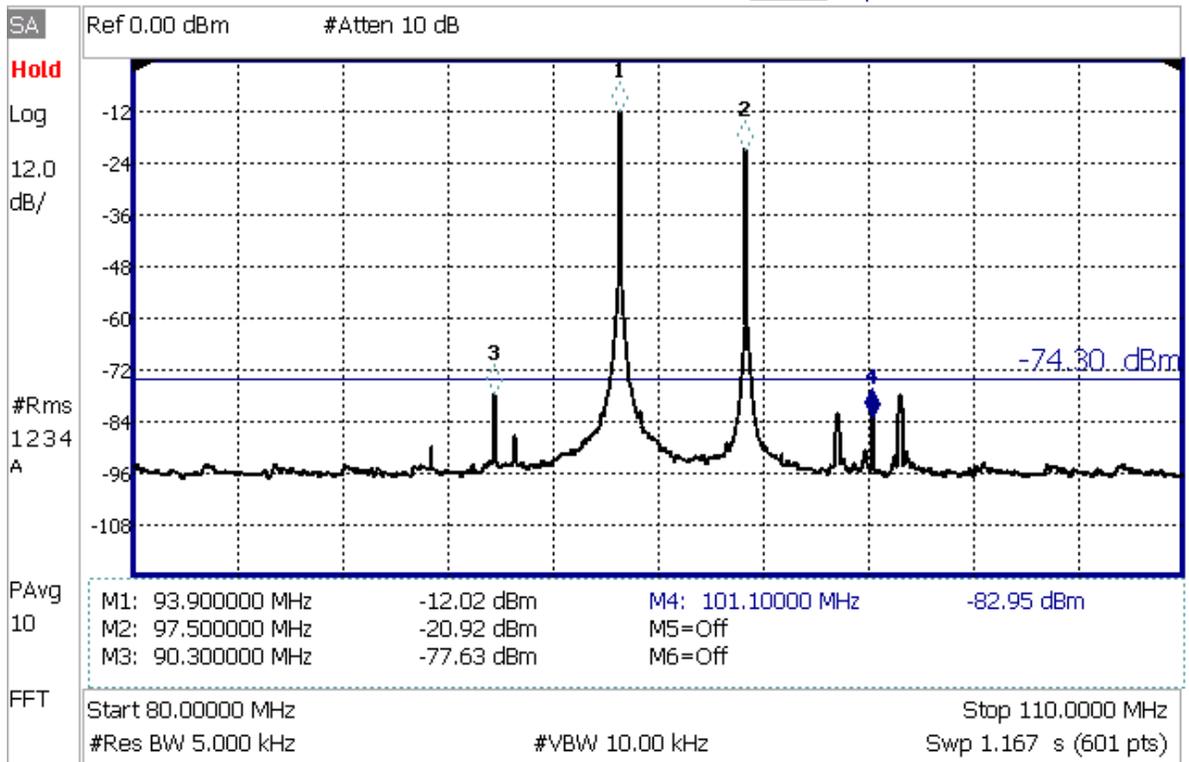
W248BF Measured Carrier: -12.02 dB

Adjusted ERP Based Limit Line: -74.32 dB

W248BF and W230AY - On

Keysight Technologies: N9912A, SN: MY50022693

Fri, 08 Mar 2024 5:31:28 PM





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Conclusion

All Harmonics and Intermodulation Products are within FCC Limits