

## Equipment Performance Measurements (FM)

Call Letters - KWNZ-FM Community Of License Reno/Sparks, NV  
 Technician - Kevin Fitzgerald Date & Time - 10/11/2013  
 Transmitter Make & Model - Nautel V51  
 Exciter Make & Model - Nautel V51  
 Frequency - 106.3 Frequency Calibrated? - Y  
 Analyzer Brand & Model - Winradio WR6305e  
 Serial Number - 0309/09129006FB Source Of Analyzer - Kevin Fitzgerald  
 Analyzer Calibration Date - 7/2011 Other \_\_\_\_\_  
 \* Measurements at Transmitter Site with wire antenna.

### Measurements

#### 1) 120 kHz to 240 kHz from the carrier:

Below Level Of Unmodulated Carrier      Below Level Of Unmodulated Carrier

Minus 120 kHz	<u>51 dB</u>	Plus 120 kHz	<u>57 dB</u>
Minus 180 kHz	<u>59 dB</u>	Plus 180 kHz	<u>58 dB</u>
Minus 240 kHz	<u>61 dB</u>	Plus 240 kHz	<u>59 dB</u>

Any point between 120 kHz and 240 kHz inclusive attenuated to a lower dB level of the unmodulated carrier than the 3 listed above: No

All points between 120 kHz and 240 kHz inclusive attenuated at least 25 dB below the level of the unmodulated carrier lower: Yes

#### 2) 240 kHz to 600 kHz from the carrier:

Below Level Of Unmodulated Carrier      Below Level Of Unmodulated Carrier

Minus 240 kHz	<u>61 dB</u>	Plus 240 kHz	<u>59 dB</u>
Minus 300 kHz	<u>66 dB</u>	Plus 300 kHz	<u>64 dB</u>
Minus 350 kHz	<u>62 dB</u>	Plus 350 kHz	<u>70 dB</u>
Minus 400 kHz	<u>62 dB</u>	Plus 400 kHz	<u>74 dB</u>
Minus 500 kHz	<u>64 dB</u>	Plus 500 kHz	<u>76 dB</u>
Minus 600 kHz	<u>59 dB (K0ZZ)</u>	Plus 600 kHz	<u>58 dB (KRNO)</u>

Any point between 240 kHz and 600 kHz inclusive attenuated to a lower dB level of the unmodulated carrier than the 6 listed above: No

K0ZZ, 105.7 MHz received, Level still below 35 dB.  
KRNO, 106.9 MHz received, Level still below 35 dB.

All points between 240 kHz and 600 kHz inclusive attenuated at least 35 dB below the level of the unmodulated carrier: yes

3) Greater than 600 kHz from the carrier:

Based on the formula in 73.317(d) and a TPO of 1.407<sup>Kw</sup> the minimum attenuation level is 74.5 dB.

Below level of Unmodulated carrier		Below level of Unmodulated carrier	
Minus 700 kHz	77 dB	Plus 700 kHz	76 dB
Minus 800 kHz	76 dB	Plus 800 kHz	77 dB (KNEZ FM1)
Minus 1 mHz	24 dB (KZTI)	Plus 1 mHz	0 dB (KNEZ FM1)
Minus 1.5 mHz	79 dB (K285EQ)	Plus 1.5 mHz	81 dB
Minus 2 mHz	75 dB (KRZQ FM1)	Plus 2 mHz	80 dB
Minus 3 mHz	67 dB (K277BW)	Plus 3 mHz	85 dB
Minus 5 mHz	61 dB (see note)	Plus 5 mHz	81 dB
Minus 6 mHz	84 dB	Plus 6 mHz	87 dB

Any point greater than 600 kHz from the carrier attenuated to a lower dB level of the unmodulated carrier than the 8 listed above: No

All points greater than 600 kHz from the carrier attenuated at least 74.5 dB below the level of the unmodulated carrier: yes

Notes: KZTI-FM1, 105.3 mHz received (minus 1 mHz), KNEZ-FM1, 107.3 mHz received (plus 1 mHz), K285EQ, 104.9 mHz received  
Comments: (minus 1.5 mHz), KRZQ-FM1, 104.1 received (minus 2 mHz), K277BW, 103.3 mHz received (minus 3 mHz);

\* Note: At 101.3 mHz (minus 5 mHz) a spur or noise was detected, I shutdown this booster, KWNZ-FM1, along with KRZQ-FM1, KZTI-FM1, and KNEZ-FM1 and the spurs still present thus showing that the noise on 101.3 mHz was not being generated by 106.3 mHz's signal, KWNZ-FM1 or any Shamrock Comm. facility.

This site, West Red Butte, NV, has a very high noise floor. Also noted some noise but within acceptable levels on 111.3 mHz (81 dB down, OK), 112.9 mHz (78 dB down, OK), and

4) Preemphasis set at: 75  $\mu$ sec  
118.5 mHz (76 dB down, OK), Scanned wide range of points plus and minus 10 mHz, no spurious emissions.