

FM TRANSLATOR EQUIPMENT PERFORMANCE MEASUREMENT REPORT

K239BP, Flynn, OR

Measurements completed: October 28, 2014

BROWN BROADCAST SERVICES

INCORPORATED

Michael D. Brown

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TECHNICAL STATEMENT/RESULTS

On October 28, 2014, I performed RF emissions equipment performance measurements on K239BP, Flynn, OR, to show compliance with FCC Rules 47 CFR §74.1236(a)(2) and §73.317(a), (b), (c), and (d).

The results of these tests, contained herein, show that at the time of the measurements, K239BP appeared to met all standards as set forth in §73.317(a), (b), (c), and (d).

These measurements are required as a Special Operating Condition in the underlying Construction Permit - BPFT-20140924AAC. This report is being submitted as part of the FCC Form 350 (Application for a Station License), as required by the CP.

K239BP is diplexed into a common antenna with K282BH, Philomath, OR. Both translators were operating at their rated power levels during all tests.

The data and exhibits contained herein were compiled and prepared by me, and that I believe them to be a true and accurate representation of the facts as evident at the time of the measurements.

Michael D. Brown

A handwritten signature in black ink, appearing to read "Michael D. Brown", with a long horizontal flourish extending to the right.

Brown Broadcast Services, Inc.

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MEASUREMENT PROCEDURE OVERVIEW

This report seeks to accurately assess the performance of the FM transmission system. The emissions mask limits are:

± 120 to 240 kHz	≥ -25db below carrier level
± 240 to 600 kHz	≥ -35db below carrier level
± 600kHz and beyond	≥ -43 +10log(power in watts) or 80db, whichever is the lesser attenuation

For the 15.5W ERP employed, the limit for ± 600kHz and beyond is -54.9dbc (below carrier).

All measurements were taken during normal audio programming, with both translators operating at their rated powers. An Anritsu MT8222A swept-frequency spectrum analyzer was employed. To begin, a reference level was established using the following setup during normal programming:

Span:	2MHz
Resolution Bandwidth:	300kHz
Video Bandwidth:	1kHz

For the occupied bandwidth measurements:

Span:	2MHz
Resolution Bandwidth:	1kHz
Video Bandwidth:	10kHz
Sweep:	Auto
Attenuation:	Auto
Detection:	Peak
Trace A:	Max Hold
Preamp:	Off

Plots were examined up to 500mhz.

The spectrum analyzer exhibited sufficient linearity, that a notch filter was deemed unnecessary during measurements of possible harmonics and intermodulation products.

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GENERAL DATA

STATION CALL LETTERS: K239BP
CITY OF LICENSE: Flynn
STATE OF LICENSE: OR
FREQUENCY: 95.7Mhz
TRANSMITTER LOCATION: Vineyard Mountain, near Lewisburg, OR
TRANSMITTER: BW Broadcast TX5 exciter feeding a Harris M2HD Amplifier
ERP: 15.5w
TRANSMITTER TPO: 35.9w
COMBINER SYSTEM: Shively 2930-2/3-04, three section branched combiner - combined with K282BH, Philomath, OR
DATE OF MEASUREMENTS: October 28, 2014; 1500 to 1800 PDT
MEASUREMENT POINT: RF sample port directional coupler

TEST EQUIPMENT EMPLOYED

Anritsu MT8222A BTS Master Spectrum Analyzer, serial #0818047
Narda 771-6 6db 50Ω inline pad
Bird Model 43 Line Section
Coaxial Dynamics 87015, -50dB directional coupler slug - flat ±1dB to 500MHz

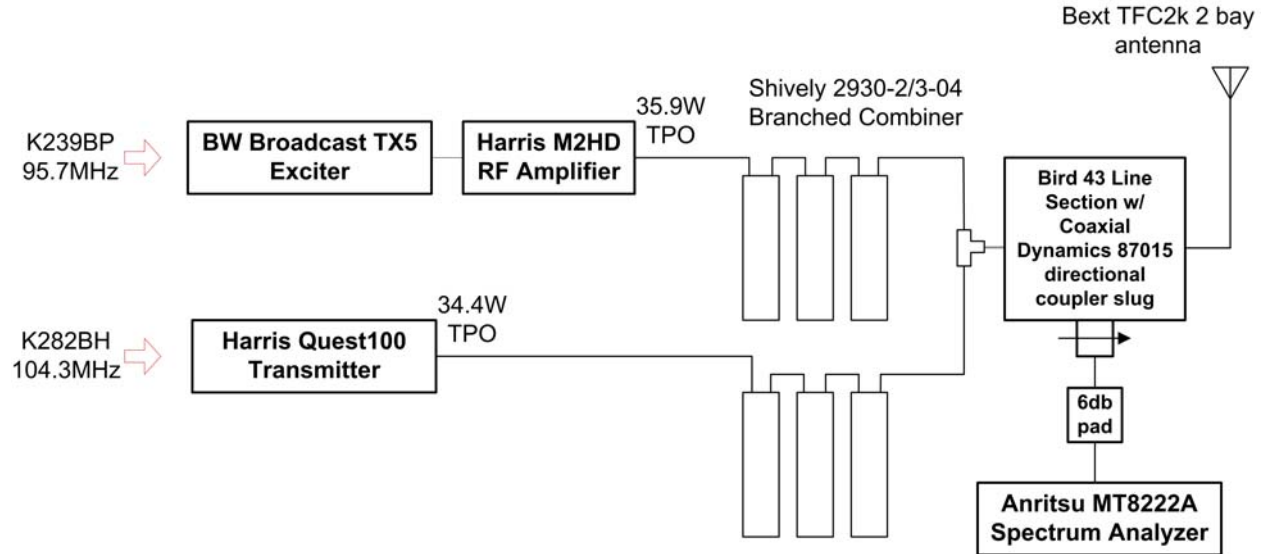
POWER OUTPUT CALCULATIONS

Transmission line: Andrew LDF4-50A
Length: 35.0m
Loss db: 0.762db; 83.9% efficiency
Power dissipated in line: 4.514w
Other losses: 0.026db - (4 pairs of N-connectors @0.0065db)
Other losses: 1.0458db - Shively 2930-2/3-04, three section branched combiner
Antenna: Bext TFC2K
Bays: 2
Bay Spacing: 0.5
Antenna power gain: -1.81dbd; (0.659 power gain multiplier)
System ERP: 15.5w
Transmitter Output: 35.9w

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TEST SETUP



DATA ANALYSIS

SPURIOUS AND HARMONIC RADIATIONS

(using “max hold” peak function)

	FREQ	SIGNAL	REL	COMMENTS
CARRIER:	95.7mHz	-8.0dBm	peak ref	--
2nd HARMONIC:	191.4mHz	unreadable	--	FCC SPEC: -54.9dbc - OK
3rd HARMONIC:	287.1mHz	unreadable	--	FCC SPEC: -54.9dbc - OK
4th HARMONIC:	382.8mHz	unreadable	--	FCC SPEC: -54.9dbc - OK
5th HARMONIC:	478.5mHz	unreadable	--	FCC SPEC: -54.9dbc - OK

OTHER SPURIOUS & INTERMOD PRODUCTS:

--none found--

96.5MHz on the plot is K243BG, Corvallis, OR. It is located on the same pole.

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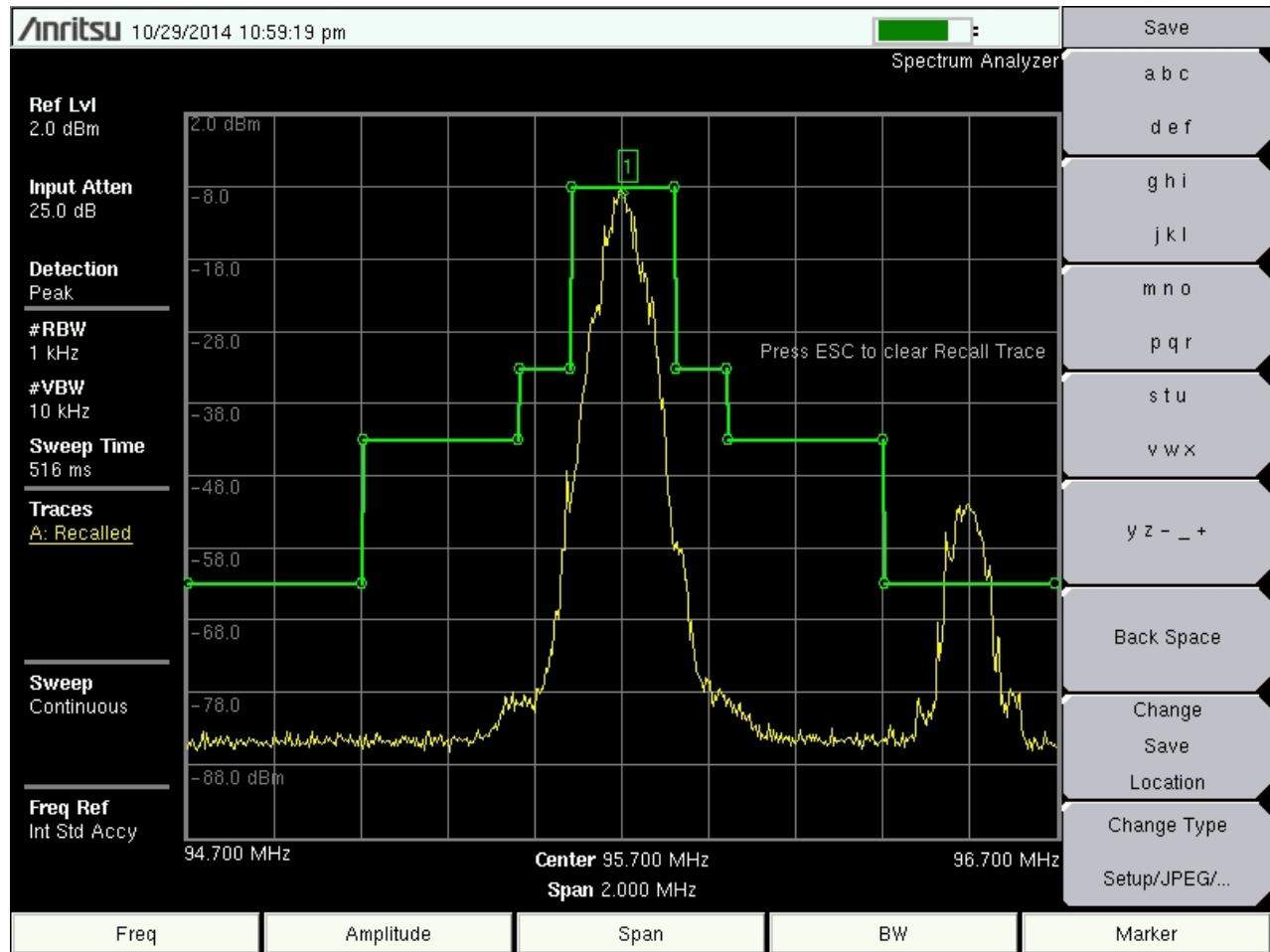
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PLOT 1

200khz/div



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