

INDEX OF SUBMITTED MEASURED DATA

This exhibit contains the measured data for this equipment as follows:

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EXHIBIT 6C - Transmit Audio Post Limiter Lowpass Filter Response (2 Graphs)

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6E-10 – 12.5 kHz 4-Level FSK Digital Data

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6E-16 – 25 kHz DTMF Modulation and TPL (CTCSS) Modulation

6E-17 – 25 kHz DTMF Modulation and DPL (CDCSS) Modulation

6E-18 – 25 kHz 2000/3000 Hz FSK Data Modulation Only

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6E-20 – 25 kHz 2000/3000 Hz FSK Data and DPL (CDCSS) Modulation

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6F-2 – 54 Watts, 155.000 MHz

6F-3 – 54 Watts, 174.000 MHz

6F-4 – 25 Watts, 136.000 MHz

6F-5 – 25 Watts, 155.000 MHz

6F-6 – 25 Watts, 174.000 MHz

INDEX OF SUBMITTED MEASURED DATA (CONTINUED)

EXHIBIT 6G – Radiated Spurious Emissions – (16 Graphs)

6G-1 – 54 Watts, 136.0125 MHz, 12.5 kHz
6G-2 – 54 Watts, 150.8125 MHz, 12.5 kHz
6G-3 – 54 Watts, 162.4125 MHz, 12.5 kHz
6G-4 – 54 Watts, 173.9875 MHz, 12.5 kHz
6G-5 – 25 Watts, 136.0125 MHz, 12.5 kHz
6G-6 – 25 Watts, 150.8125 MHz, 12.5 kHz
6G-7 – 25 Watts, 162.4125 MHz, 12.5 kHz
6G-8 – 25 Watts, 173.9875 MHz, 12.5 kHz
6G-9 – 54 Watts, 136.0125 MHz, 25 kHz
6G-10 – 54 Watts, 150.8125 MHz, 25 kHz
6G-11 – 54 Watts, 162.4125 MHz, 25 kHz
6G-12 – 54 Watts, 173.9875 MHz, 25 kHz
6G-13 – 25 Watts, 136.0125 MHz, 25 kHz
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EXHIBIT 6H – Frequency Stability (2 Graphs)

6H-1 – Frequency Stability vs. Temperature
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6I-6 – 54 Watts, 25 kHz De-Key Decay Time
6I-7 – 25 Watts, 25 kHz Key-Up Attack Time
6I-8 – 25 Watts, 25 kHz De-Key Decay Time

RF OUTPUT DATA

The RF power output was measured with the indicated voltage applied to and current into the final RF amplifying device, pursuant to 47 CFR 2.1033(c)(8) and 2.1046.

HIGH POWER SETTING, FREQUENCY 136.000 MHz

Measured RF Output Power:	54.0 Watts
Measured DC Voltage:	13.6 Volts
Measured DC Input Current:	8.60 Amperes
Measured DC Input Power:	116.9 Watts

LOW POWER SETTING, FREQUENCY 136.000 MHz

Measured RF Output Power:	25.0 Watts
Measured DC Voltage:	13.6 Volts
Measured DC Input Current:	5.65 Amperes
Measured DC Input Power:	76.9 Watts

HIGH POWER SETTING, FREQUENCY 155.000 MHz

Measured RF Output Power:	54.0 Watts
Measured DC Voltage:	13.6 Volts
Measured DC Input Current:	7.92 Amperes
Measured DC Input Power:	107.8 Watts

LOW POWER SETTING, FREQUENCY 155.000 MHz

Measured RF Output Power:	25.0 Watts
Measured DC Voltage:	13.6 Volts
Measured DC Input Current:	5.34 Amperes
Measured DC Input Power:	72.6 Watts

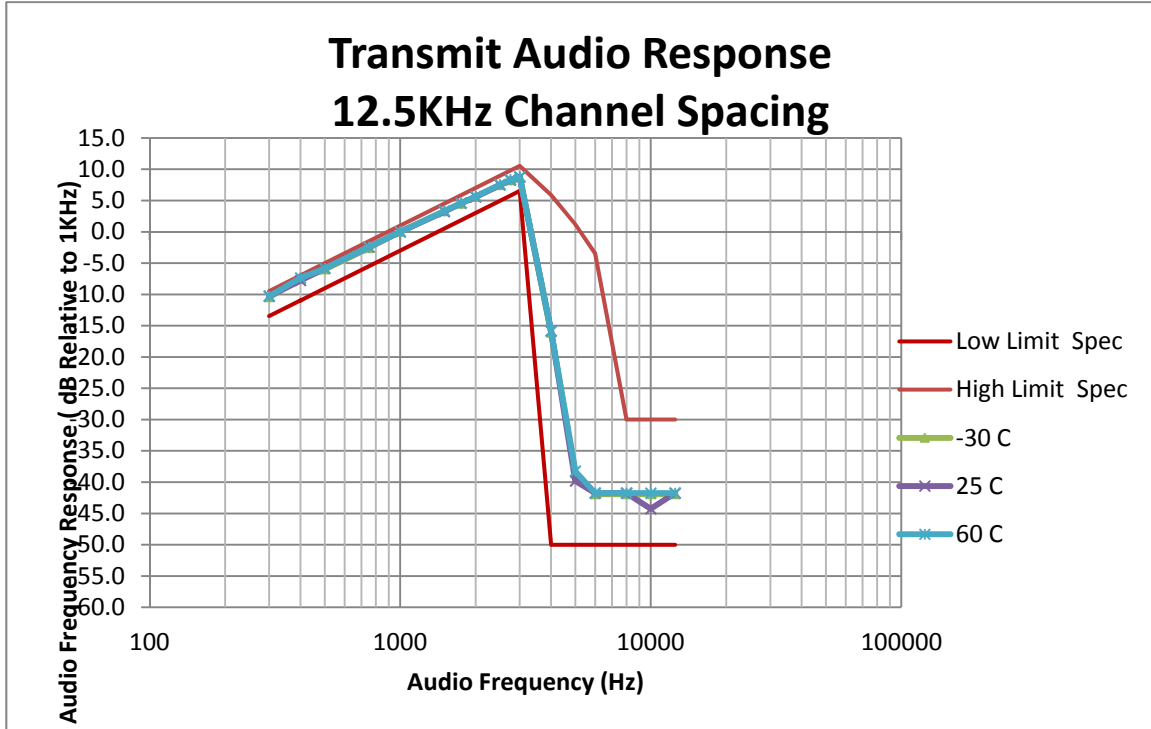
HIGH POWER SETTING, FREQUENCY 174.000 MHz

Measured RF Output Power:	54.0 Watts
Measured DC Voltage:	13.6 Volts
Measured DC Input Current:	8.62 Amperes
Measured DC Input Power:	117.3 Watts

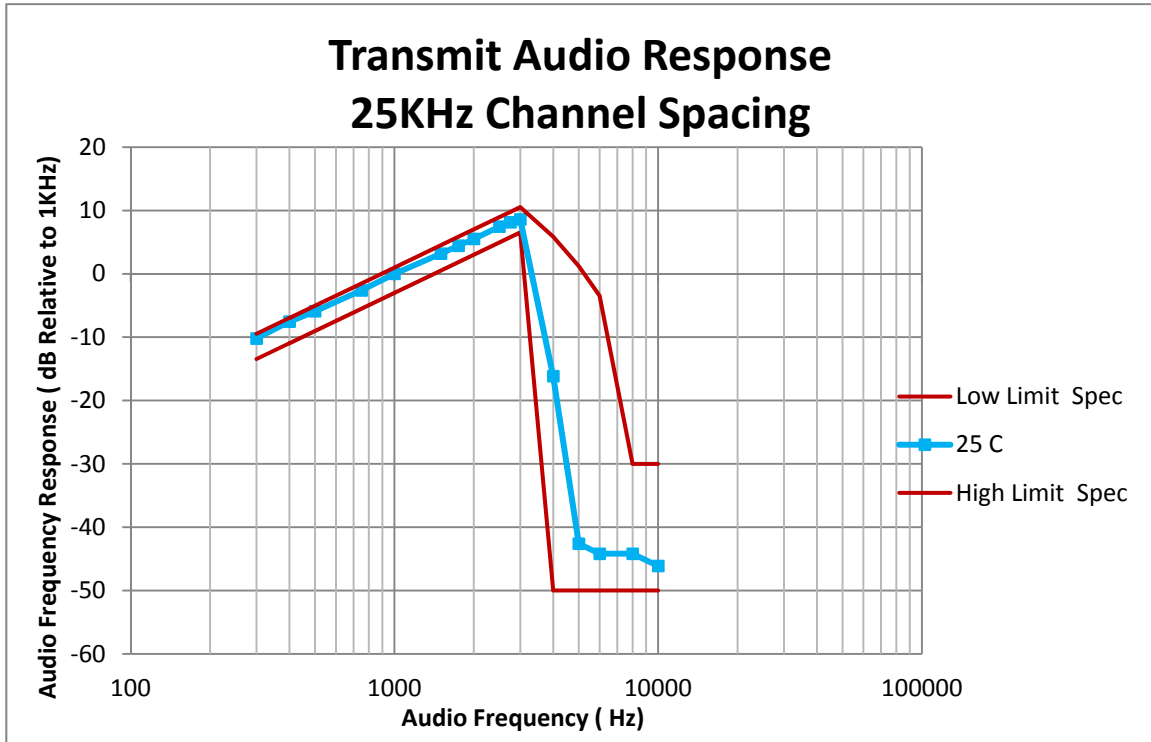
LOW POWER SETTING, FREQUENCY 174.000 MHz

Measured RF Output Power:	25.0 Watts
Measured DC Voltage:	13.6 Volts
Measured DC Input Current:	5.96 Amperes
Measured DC Input Power:	81.1 Watts

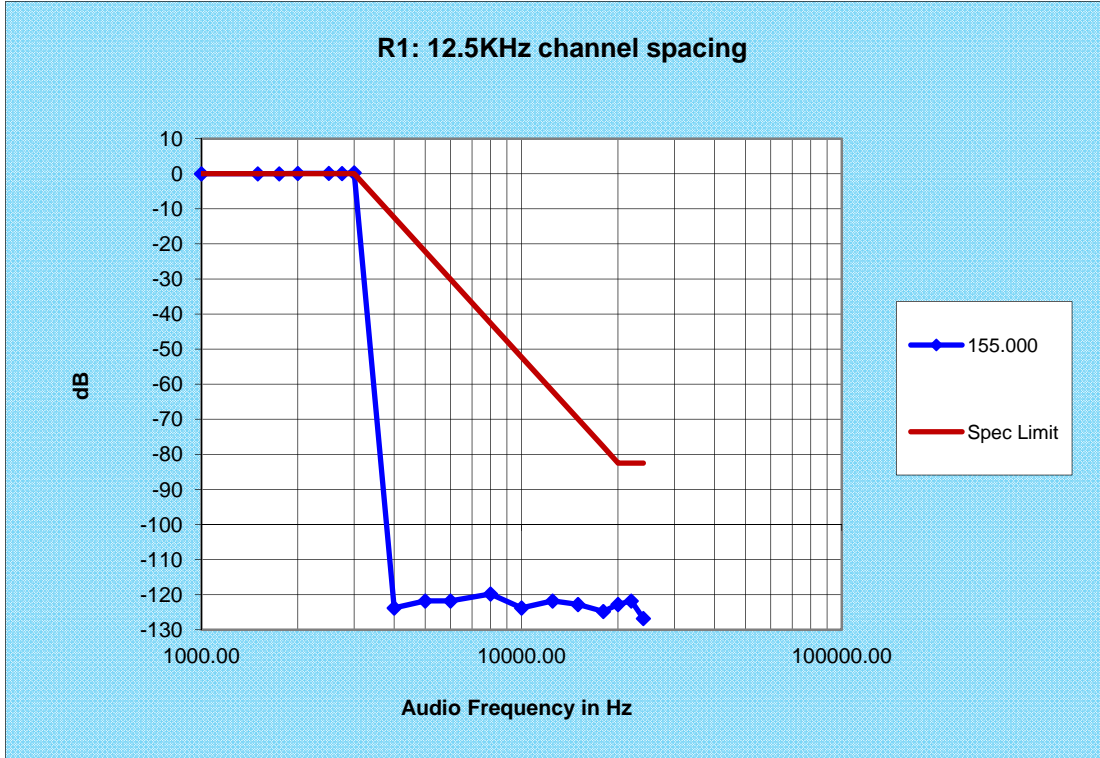
Transmit Audio Response, 155 MHz, 12.5 kHz Channel Spacing



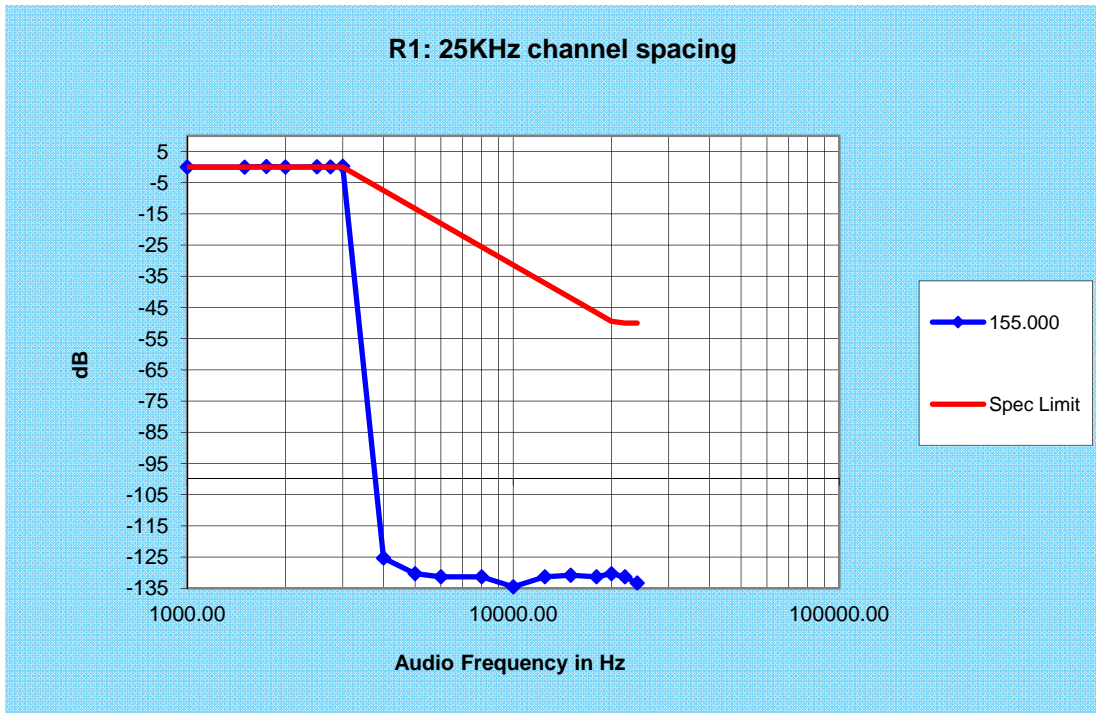
Transmit Audio Response, 155 MHz, 25 kHz Channel Spacing



POST-LIMITER LOWPASS FILTER RESPONSE
12.5 kHz Channel Spacing

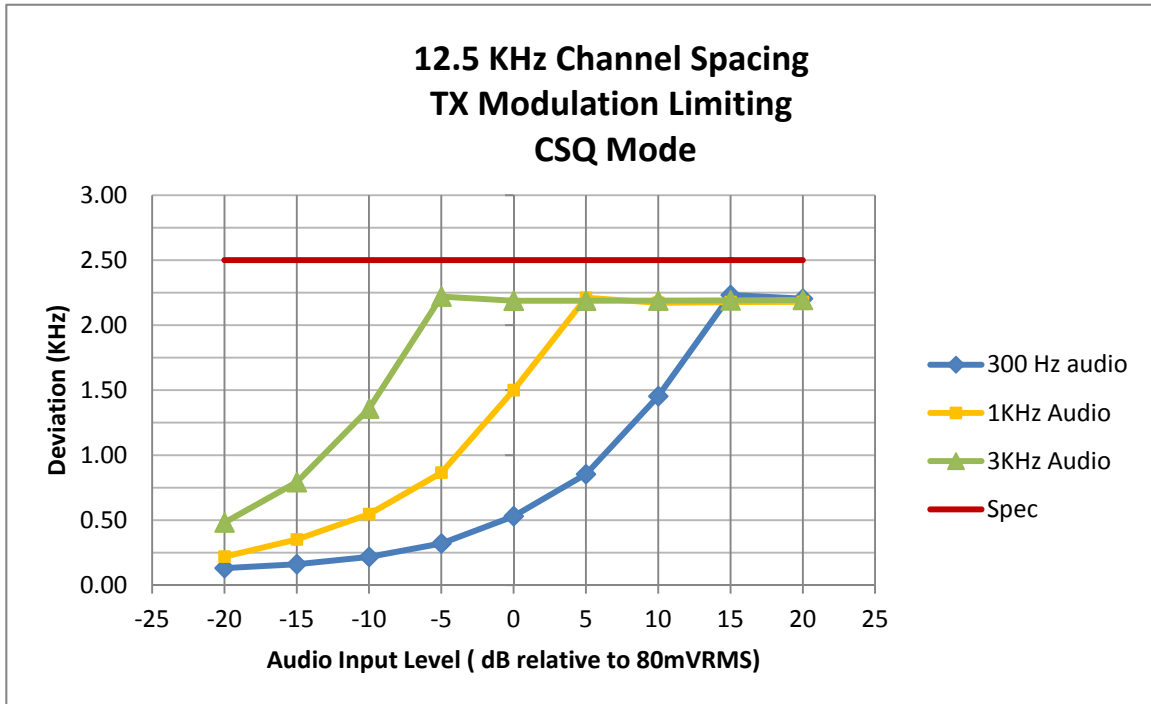


POST-LIMITER LOWPASS FILTER RESPONSE
25 kHz Channel Spacing



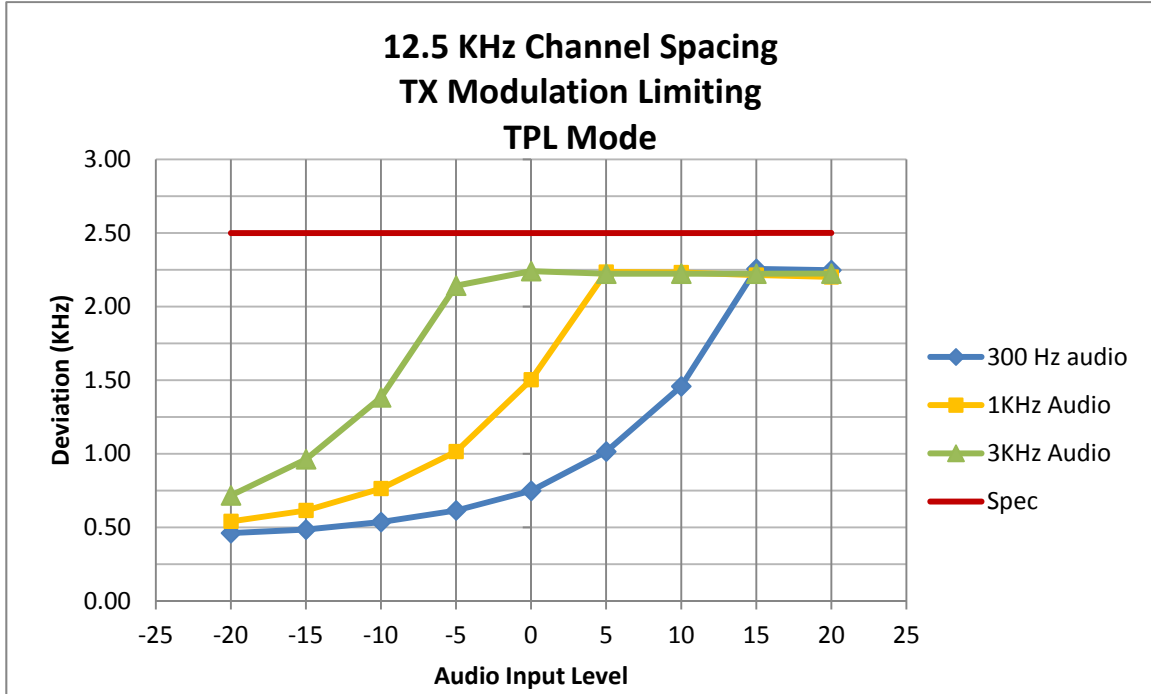
**MODULATION LIMITING CHARACTERISTIC
12.5 kHz CARRIER SQUELCH MODE**

XPR 5550



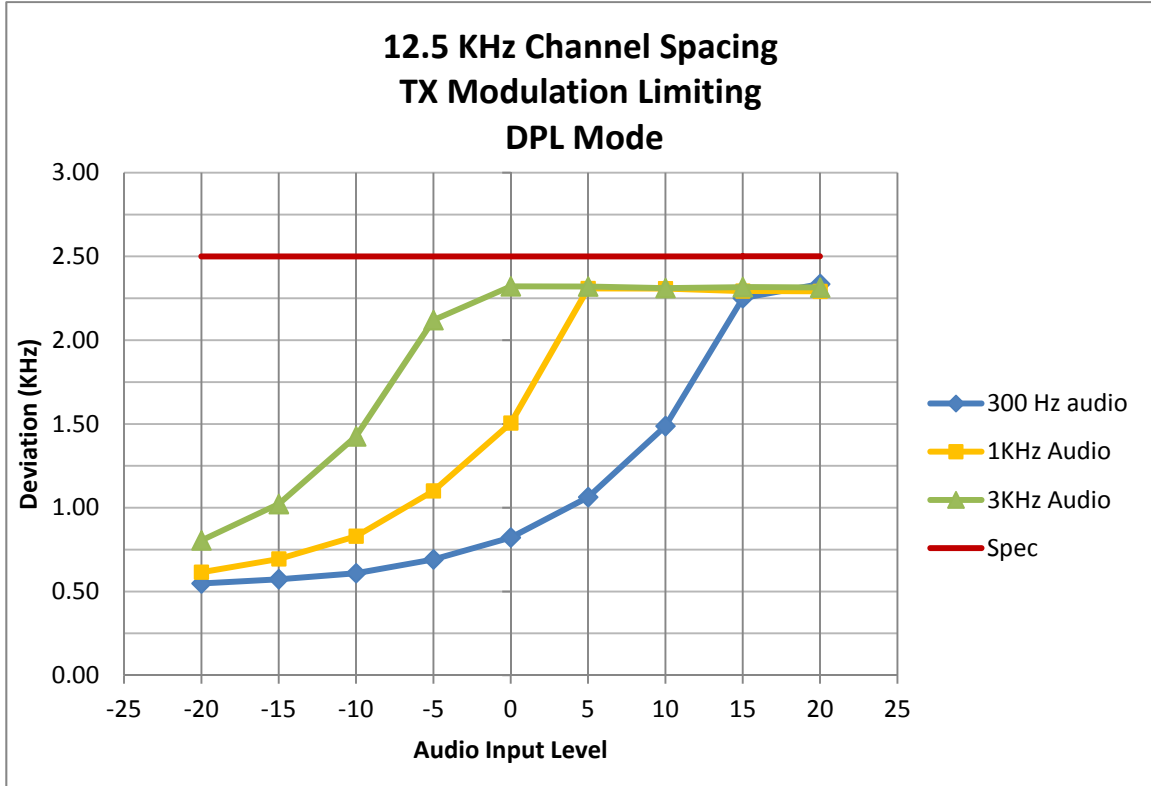
**MODULATION LIMITING CHARACTERISTIC
12.5 kHz TONE PL MODE**

XPR 5550



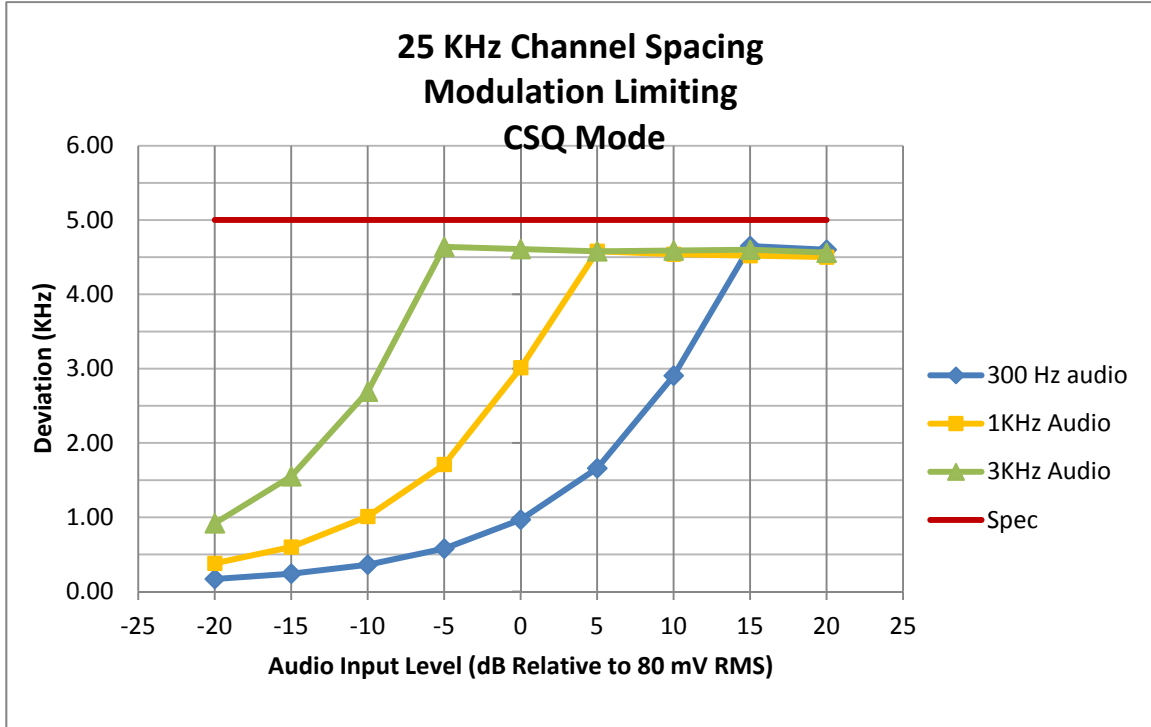
**MODULATION LIMITING CHARACTERISTIC
12.5 kHz DPL MODE**

XPR 5550



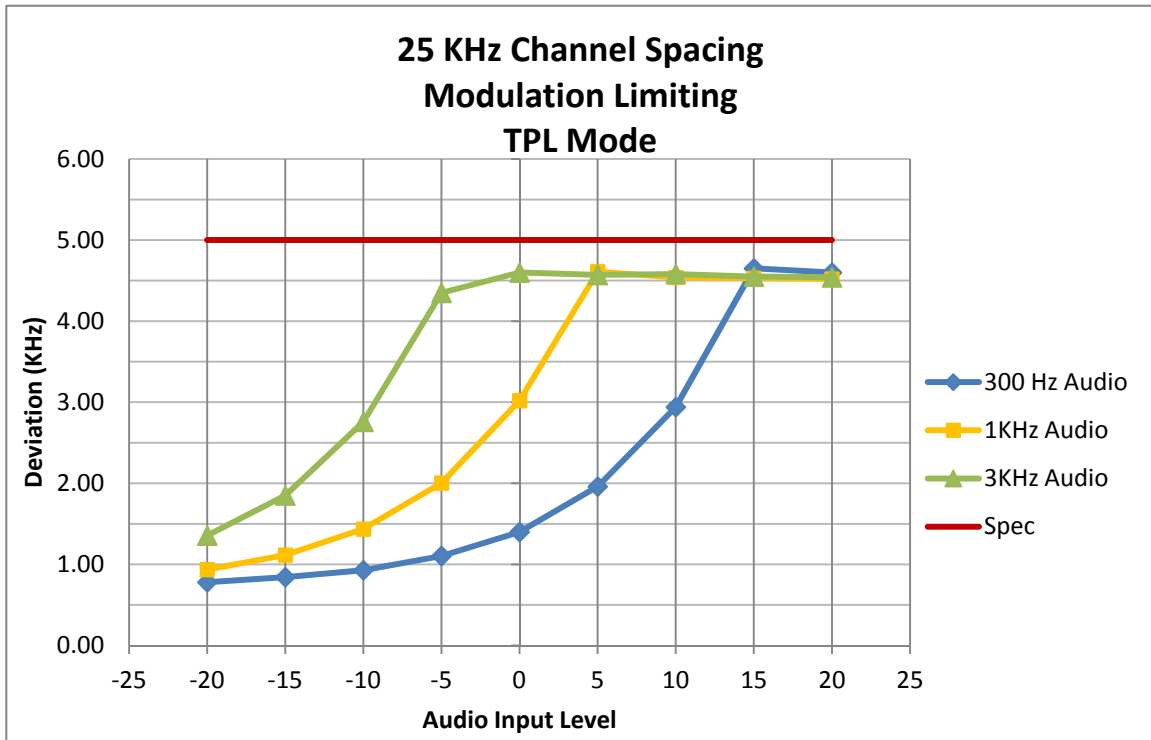
**MODULATION LIMITING CHARACTERISTIC
25 kHz CARRIER SQUELCH MODE**

XPR 5550



**MODULATION LIMITING CHARACTERISTIC
25 kHz TONE PL MODE**

XPR 5550



**MODULATION LIMITING CHARACTERISTIC
25 kHz DPL MODE**

XPR 5550

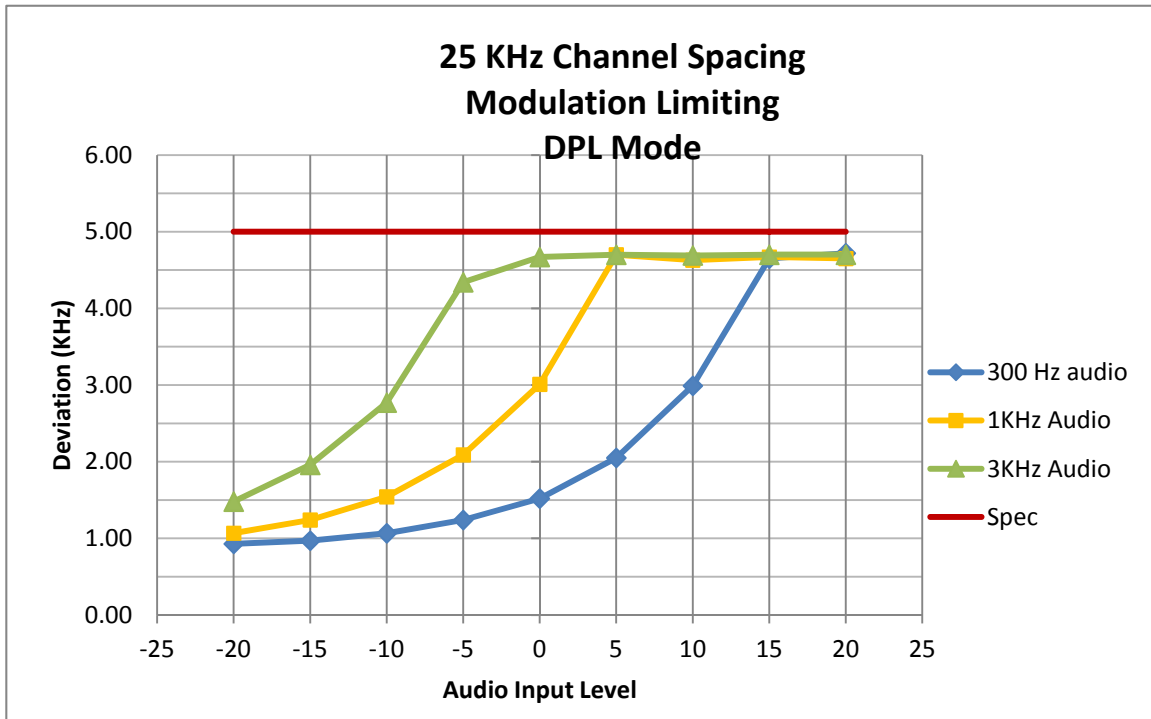


EXHIBIT 6E – MODULATION TECHNIQUES

The transmitter is capable of the following types of modulation:

- i) Modulation of PL (Private Line) – Direct FM tone modulation of 67 Hz to 250.3 Hz at 15% of full system deviation. Also referred to as TPL (Tone Private Line).
- ii) Modulation of DPL (Digital Private Line) – Direct FM modulation at 134 bps at 15% of full system deviation.
- iii) Modulation of 2000/3000 Hz FSK Data – FM modulation at nominally 60% of full system deviation.
- iv) Modulation of DTMF (Dual Tone Multi Frequency) – FM modulation at nominally 60% of full system deviation
- v) Modulation of 9600 bps 4 level FSK Data

Standard Audio Modulation (25 kHz Channelization, Analog Voice) (Not for FCC Review)

Per CFR Title 47, Part 2, Section 2.201, the Carson's Rule calculation for necessary bandwidth, $BW = 2M + 2DK$, where M = maximum modulating frequency in Hz, D = peak deviation in Hz, and K=1, is as follows:

In this case the maximum modulating frequency is 3.0 kHz with a 5.0 kHz deviation.

$BW = 2(M+D) = 2*(3.0 \text{ kHz} + 5.0 \text{ kHz}) = 16 \text{ kHz}$ (**16K0** designator)

Per CFR Title 47, Part 2, Section 2.201:

Frequency Modulation	F
A single channel containing analogue information.....	3
Telephony (including sound broadcasting)	E

The complete emissions designator for this transmitter is **16K0F3E**.

Standard Audio Modulation (12.5 kHz Channelization, Analog Voice)

Per CFR Title 47, Part 2, Section 2.201, the Carson's Rule calculation for necessary bandwidth, $BW = 2M + 2DK$, where M = maximum modulating frequency in Hz, D = peak deviation in Hz, and K=1, is as follows:

In this case the maximum modulating frequency is 3.0 kHz with a 2.5 kHz deviation.

$BW = 2(M+D) = 2*(3.0 \text{ kHz} + 2.5 \text{ kHz}) = 11 \text{ kHz}$ (**11K0** designator)

Per CFR Title 47, Part 2, Section 2.201:

Frequency Modulation	F
A single channel containing analogue information.....	3
Telephony (including sound broadcasting).....	E

The complete emissions designator for this transmitter is **11K0F3E**.

4 Level FSK Digital Modulation Techniques

The modulation sends 4800 symbols/sec with each symbol conveying 2 bits of information for a data rate of 9600 bps in a 12.5 kHz channel, which is equivalent to 4800 bps per 6.25kHz. The maximum deviation *D*, of the symbol is defined as:

$$D = 3h / 2T$$

where:

h is the deviation index defined for the modulation

T is the symbol time (1/4800) in seconds

The deviation index, *h*, is 0.27. This yields a symbol deviation of 1.944 kHz at the symbol center. The mapping between symbols and bits is shown below:

Information Bits		Symbol	4FSK Deviation
Bit 1	Bit 0		
0	1	+3	+1.944 kHz
0	0	+1	+0.648 kHz
1	0	-1	-0.648 kHz
1	1	-3	-1.944 kHz

A Square Root Raised Cosine Filter is implemented for the modulation low pass filter. The input to the modulation low pass filter consists of a series of impulses separated in time by 208.33 microseconds (1/4800 sec). The group delay of the filter is flat over the passband for $|f| < 2880$ Hz. The magnitude response of the filter is given by the following formula.

$|F(f)|$ = magnitude response of the Square Root Raised Cosine Filter

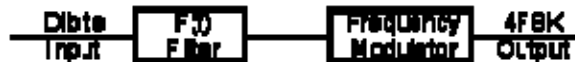
$|F(f)| = 1$ for $|f| \leq 1920$ Hz

$|F(f)| = |\cos(\pi f / 1920)|$ for $1920 \text{ Hz} < |f| \leq 2880 \text{ Hz}$

$|F(f)| = 0$ for $|f| > 2880$ Hz

where *f* = frequency in hertz.

The 4FSK modulator consists of a Square Root Raised Cosine Filter, cascaded with a frequency modulator.



4 Level FSK Digital Modulation (12.5 kHz Channelization, Digital Data)

Measurement's per Rule Part 2.202(c)(4) where employed because Part 2.202(g) Table III A formulation produces an excessive result using the value of K recommended in the Table. Therefore, the 99% energy rule (Title 47 CFR 2.989) was used for digital mode and is more accurate than Carson's rule. It states that 99% of the modulation energy falls within X kHz, which in this case is 7.6 kHz (**7K60** designator).

Per CFR Title 47, Part 2, Section 2.201:

- Frequency Modulation **F**
- A single channel containing quantized or digital information without the use of a modulating sub-carrier, excluding time-division multiplex **1**
- Data Transmission, telemetry, telecommand **D**

Note: This product utilizes a Time Division Multiple Access (TDMA) protocol.

The complete emissions designator for this transmitter is **7K60F1D**.

4 Level FSK Digital Modulation (12.5 kHz Channelization, Digital Voice and Data)

Measurement's per Rule Part 2.202(c)(4) where employed because Part 2.202(g) Table III A formulation produces an excessive result using the value of K recommended in the Table. Therefore the 99% energy rule (title 47CFR2.989) was used for digital mode and is more accurate than Carson's rule. It states that 99% of the modulation energy falls within X kHz, which in this case is 7.6 kHz (**7K60** designator).

Per CFR Title 47, Part 2, Section 2.201:

Frequency Modulation	F
A single channel containing quantized or digital information without the use of a modulating sub-carrier, excluding time-division multiplex	1
Telephony (including sound broadcasting)	E

Note: This product utilizes a Time Division Multiple Access (TDMA) protocol.

The complete emissions designator for this transmitter is **7K60F1E**.

Digital (12.5 kHz Channelization, Digital TDMA)

Measurement's per Rule Part 2.202(c)(4) where employed because Part 2.202(g) Table III A formulation produces an excessive result using the value of K recommended in the Table. Therefore the 99% energy rule (title 47CFR2.989) was used for digital mode and is more accurate than Carson's rule. It states that 99% of the modulation energy falls within X kHz, which in this case is 7.6 kHz (**7K60** designator).

Per CFR Title 47, Part 2, Section 2.201:

Frequency Modulation	F
A single channel containing quantized or digital information without the use of a modulating sub-carrier, excluding time-division multiplex	1
Combination of Data Transmission, telemetry, telecommand (D), and Telephony (E)...	W

Note: This product utilizes a Time Division Multiple Access (TDMA) protocol.

The complete emissions designator for this transmitter is **7K60F1W**.

4 Level FSK Digital Modulation (12.5 kHz Channelization, Digital Data)

Measurement's per Rule Part 2.202(c)(4) where employed because Part 2.202(g) Table III A formulation produces an excessive result using the value of K recommended in the Table. Therefore, the 99% energy rule (Title 47 CFR 2.989) was used for digital mode and is more accurate than Carson's rule. It states that 99% of the modulation energy falls within X kHz, which in this case is 7.6 kHz (**7K60** designator).

Per CFR Title 47, Part 2, Section 2.201:

Frequency Modulation	F
Case not otherwise covered	X
Data Transmission, telemetry, telecommand	D

Note: This product utilizes a Time Division Multiple Access (TDMA) protocol.

The complete emissions designator for this transmitter is **7K60FXD**.

4 Level FSK Digital Modulation (12.5 kHz Channelization, Digital Voice and Data)

Measurement's per Rule Part 2.202(c)(4) where employed because Part 2.202(g) Table III A formulation produces an excessive result using the value of K recommended in the Table. Therefore the 99% energy rule (title 47CFR2.989) was used for digital mode and is more accurate than Carson's rule. It states that 99% of the modulation energy falls within X kHz, which in this case is 7.6 kHz (**7K60** designator).

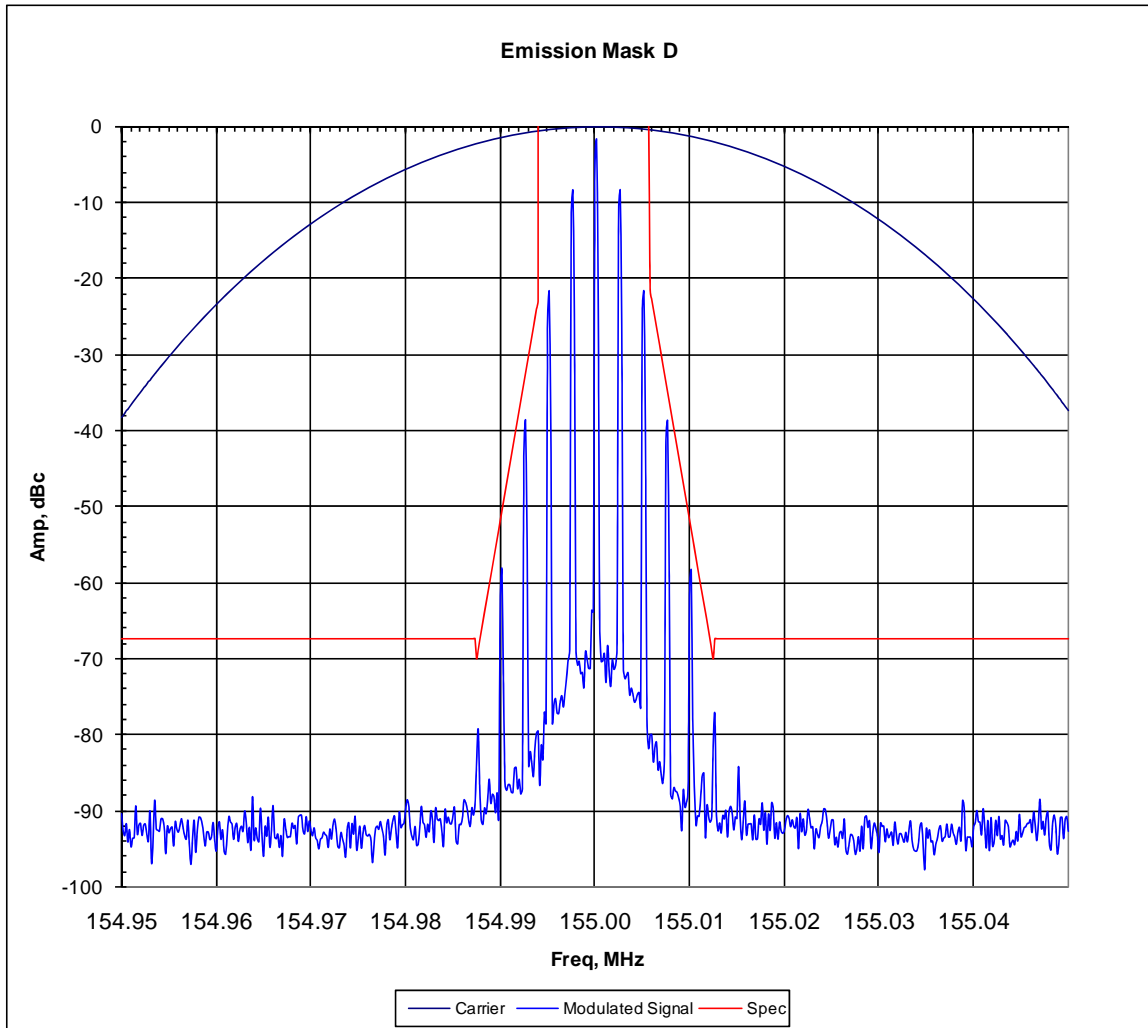
Per CFR Title 47, Part 2, Section 2.201:

Frequency Modulation	F
Case not otherwise covered	X
Telephony (including sound broadcasting)	E

Note: This product utilizes a Time Division Multiple Access (TDMA) protocol.

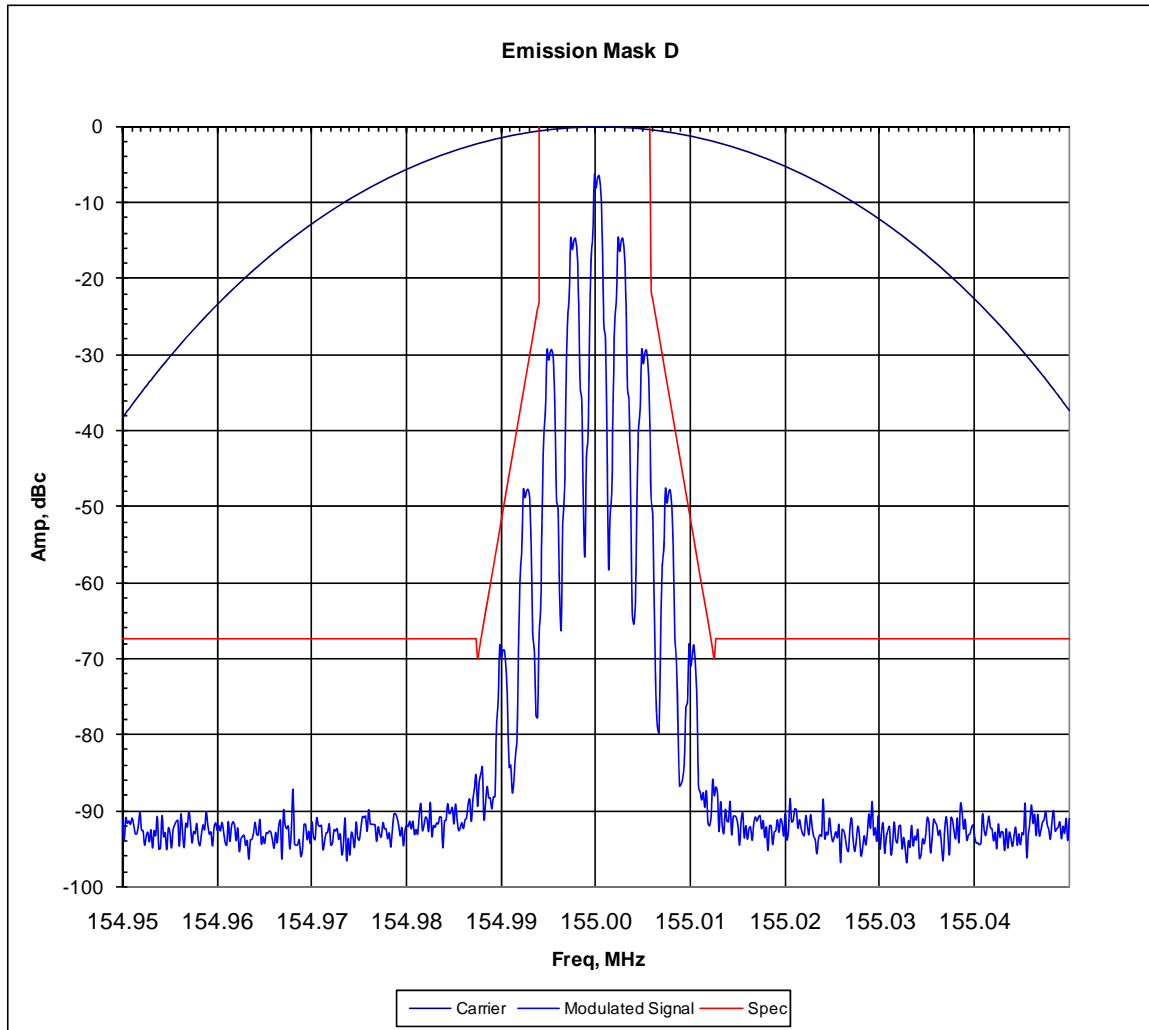
The complete emissions designator for this transmitter is **7K60FXE**.

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, 2500 Hz TONE, CARRIER SQUELCH
EMISSION MASK: D**



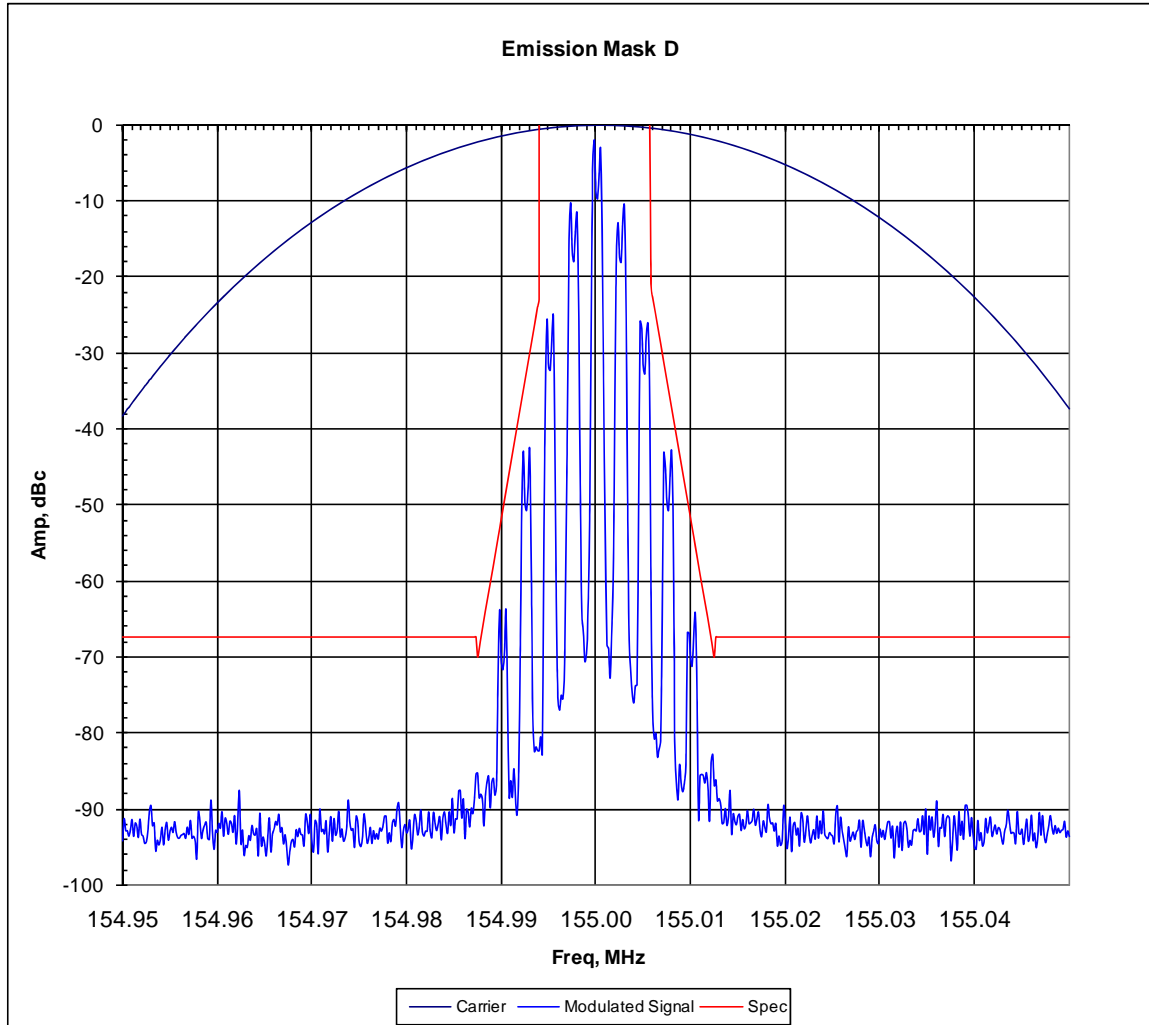
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, 2500 Hz TONE, TPL 250.3 Hz
EMISSION MASK: D**



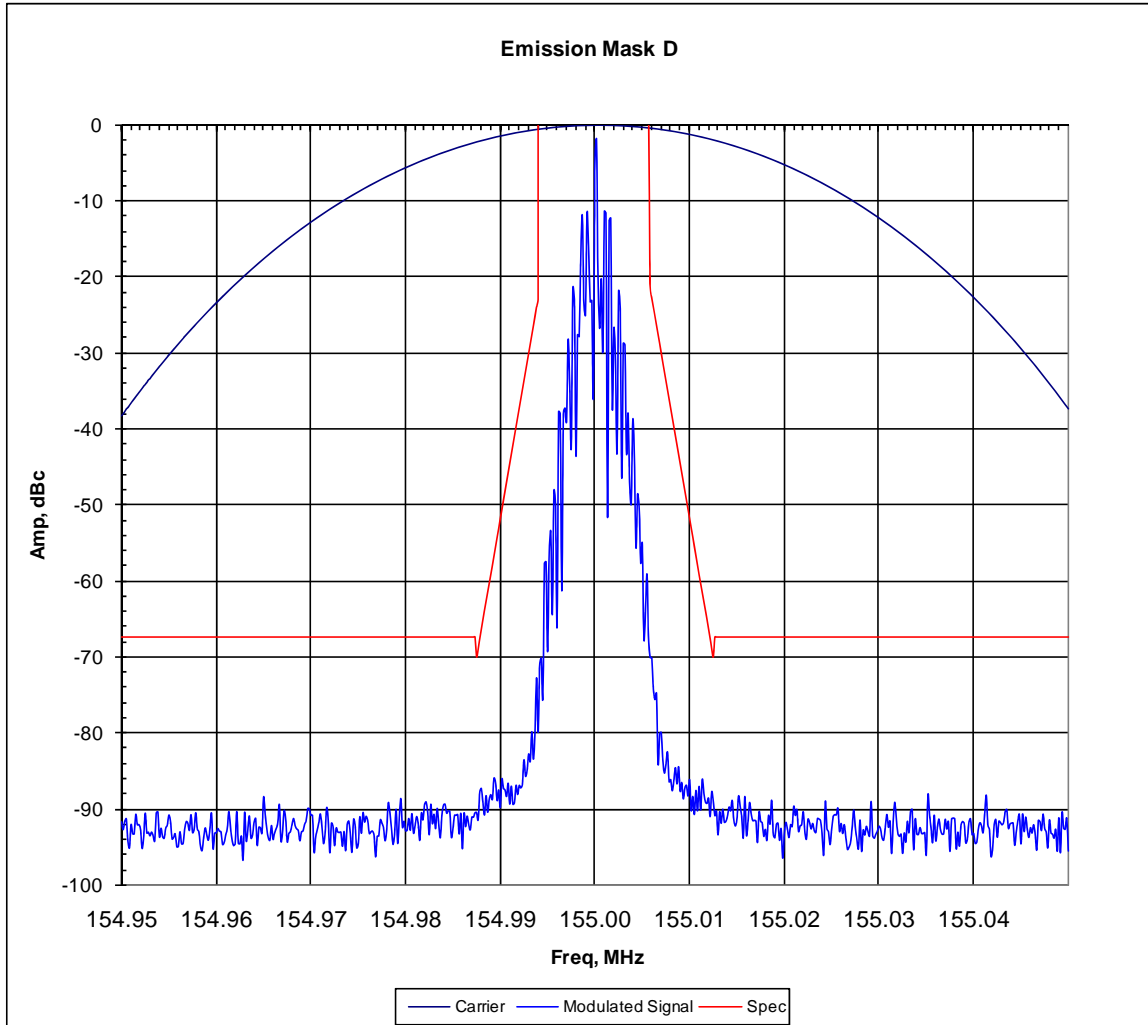
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, 2500 Hz TONE, DPL 131
EMISSION MASK: D**



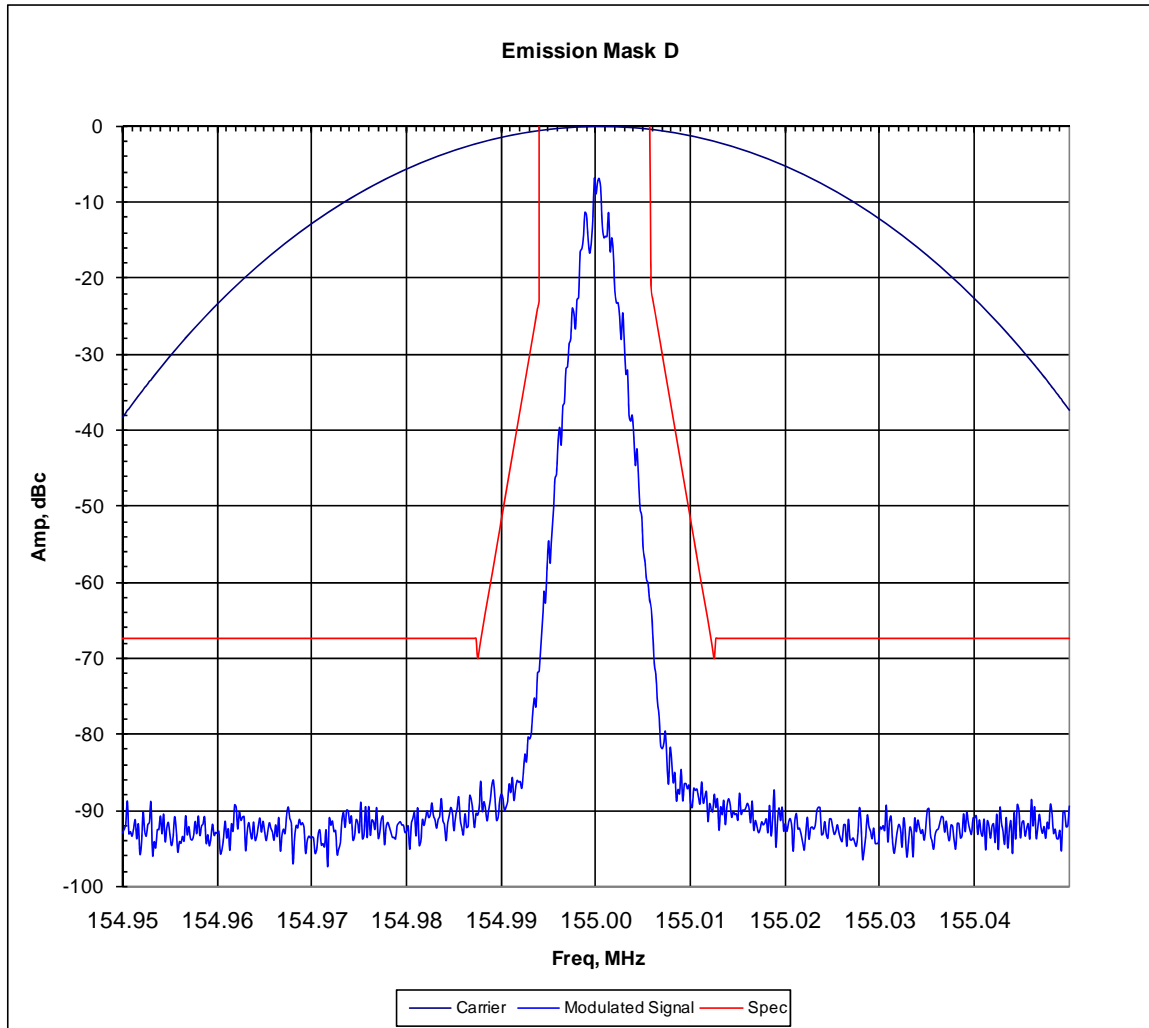
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, DTMF MODULATION, CARRIER SQUELCH
EMISSION MASK: D**



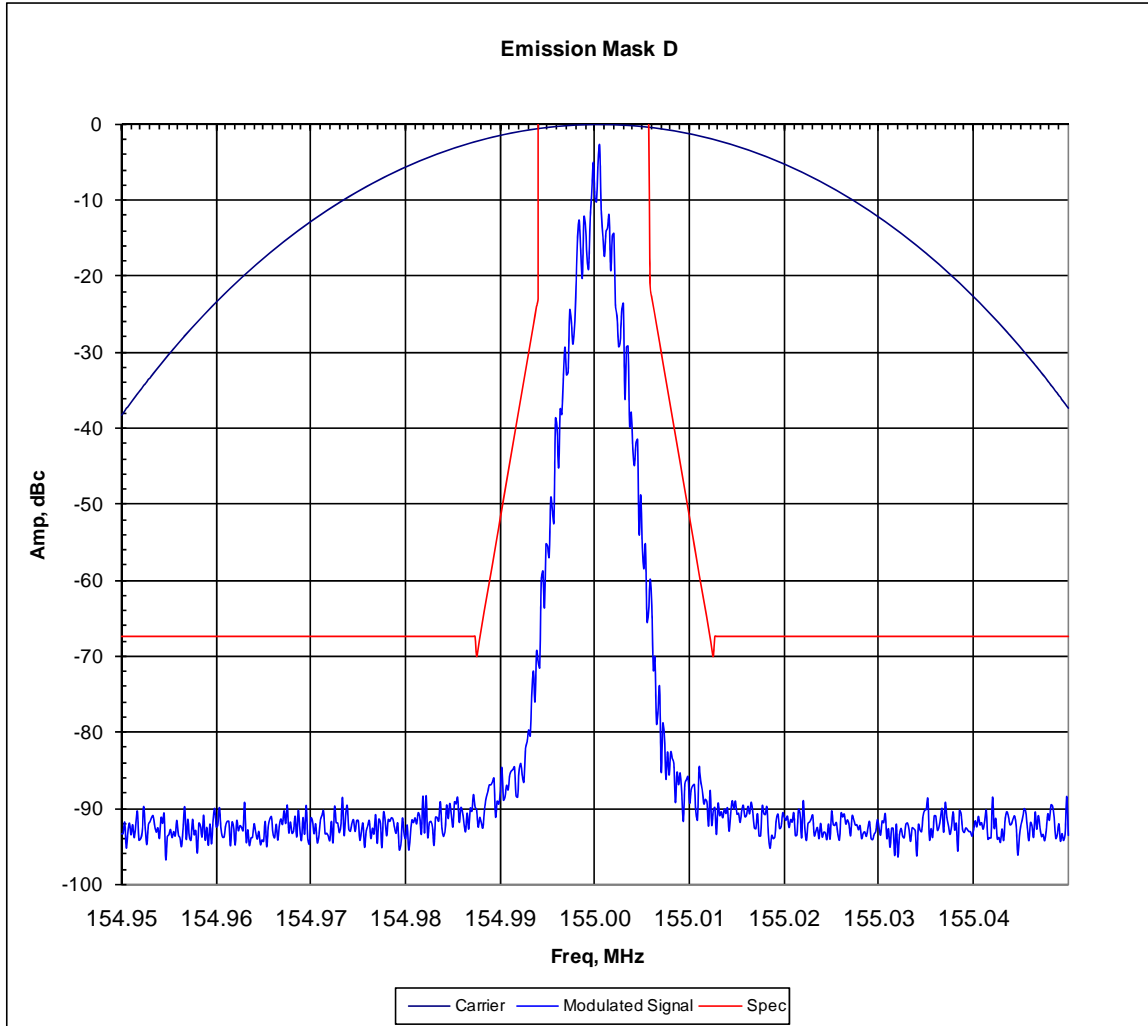
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, DTMF MODULATION, TPL 250.3 Hz
EMISSION MASK: D**



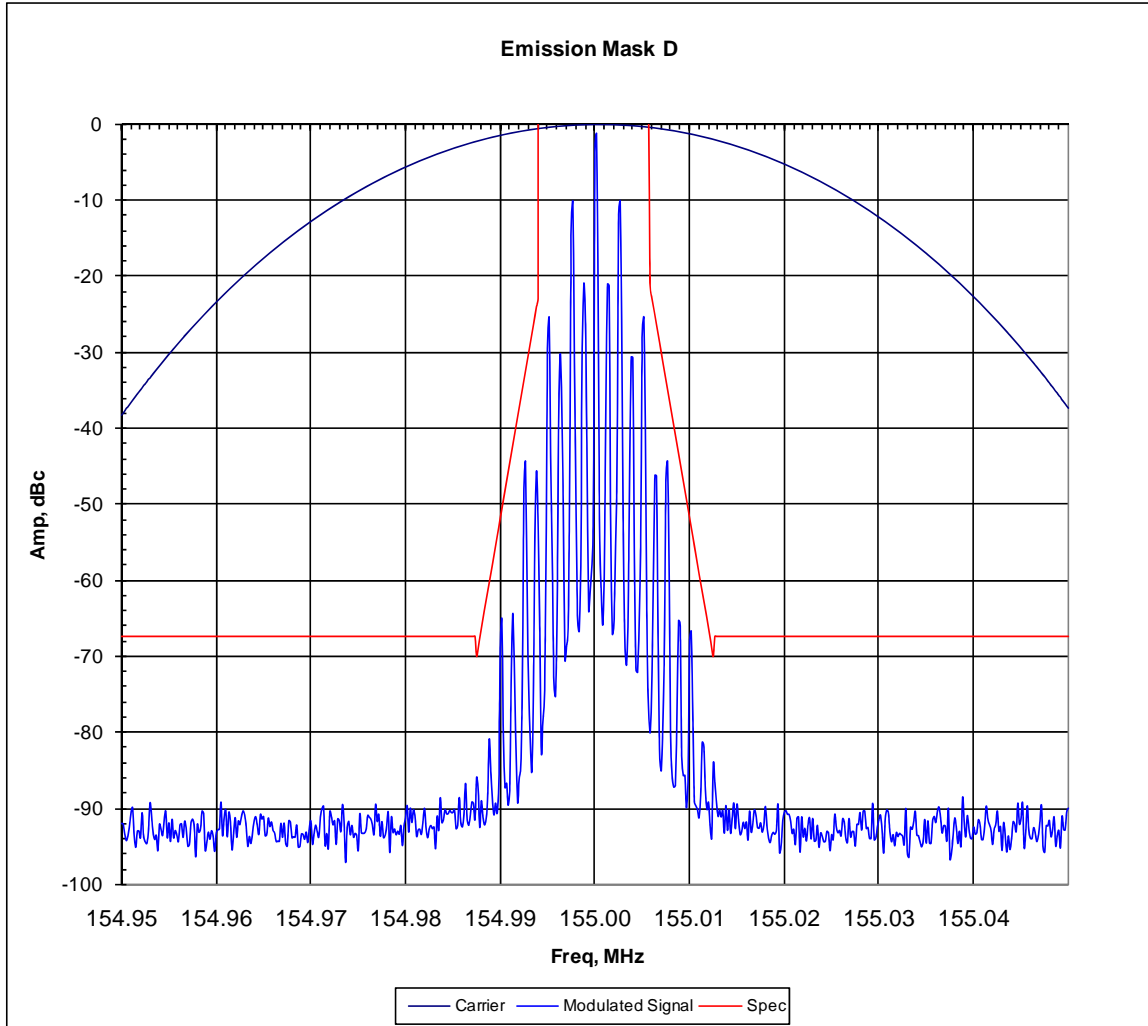
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, DTMF MODULATION, DPL 131
EMISSION MASK: D**



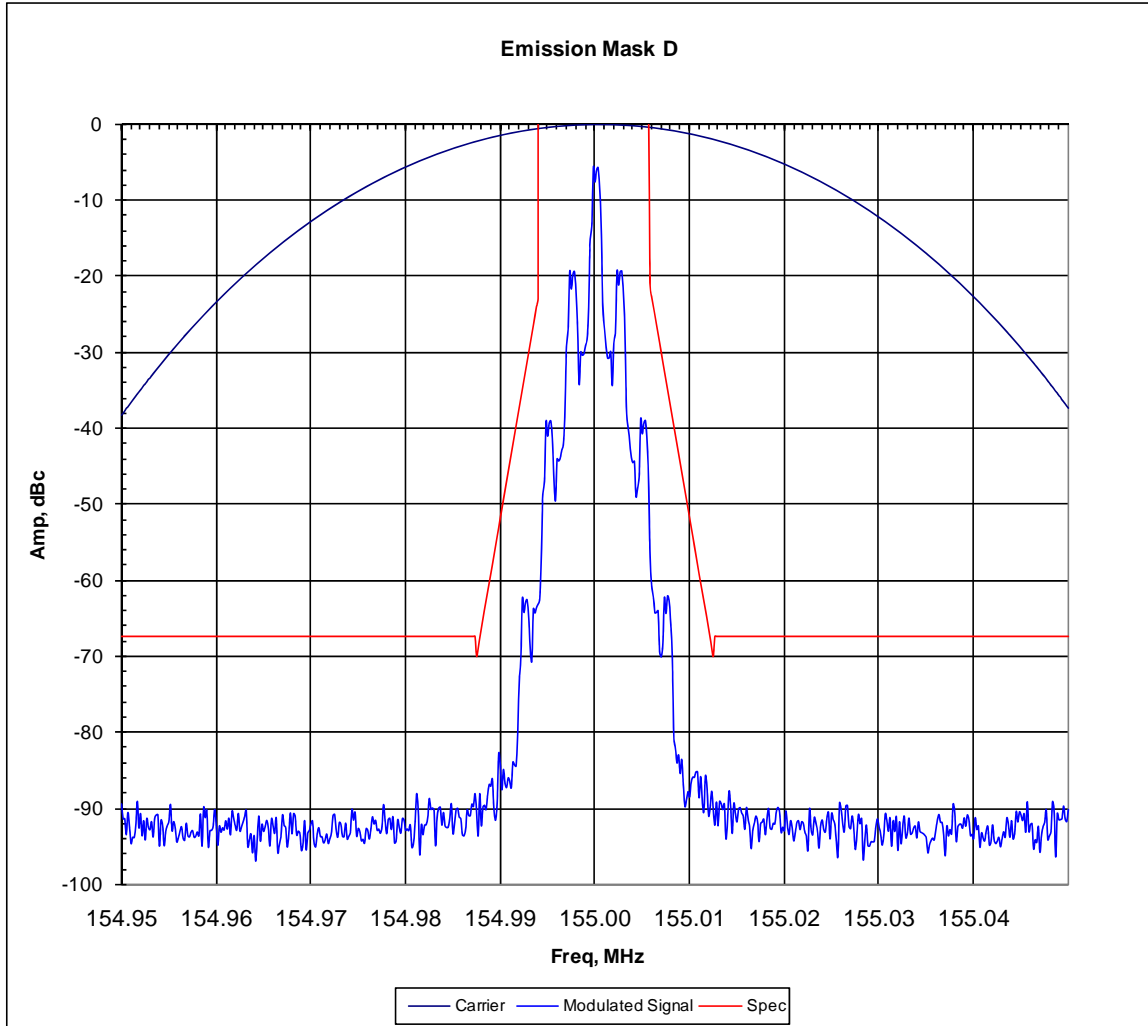
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, 2000/3000 Hz FSK, CARRIER SQUELCH
EMISSION MASK: D**



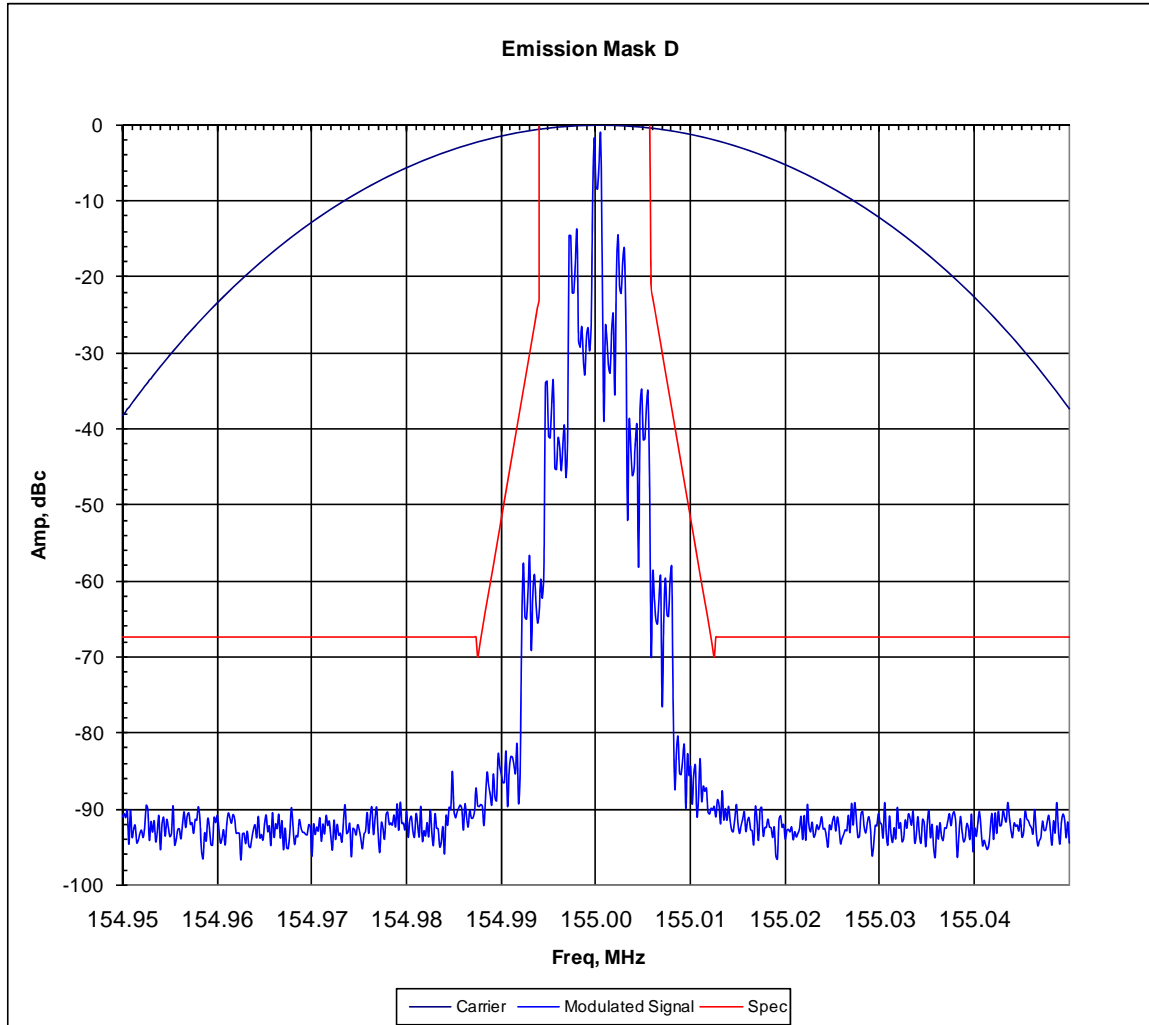
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, 2000/3000 Hz FSK, TPL 250.3 Hz
EMISSION MASK: D**



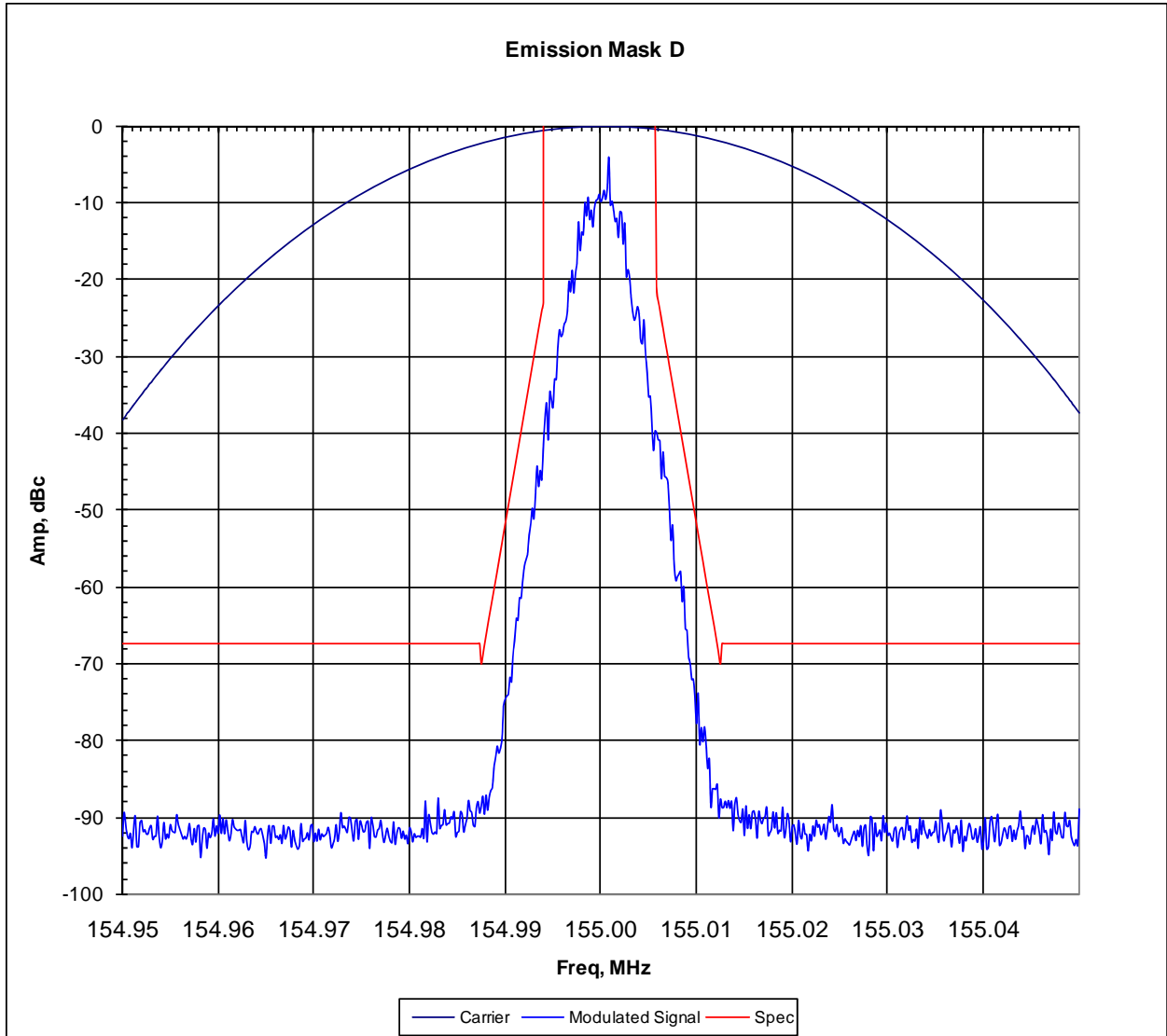
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, 2000/3000 Hz FSK, DPL 131
EMISSION MASK: D**



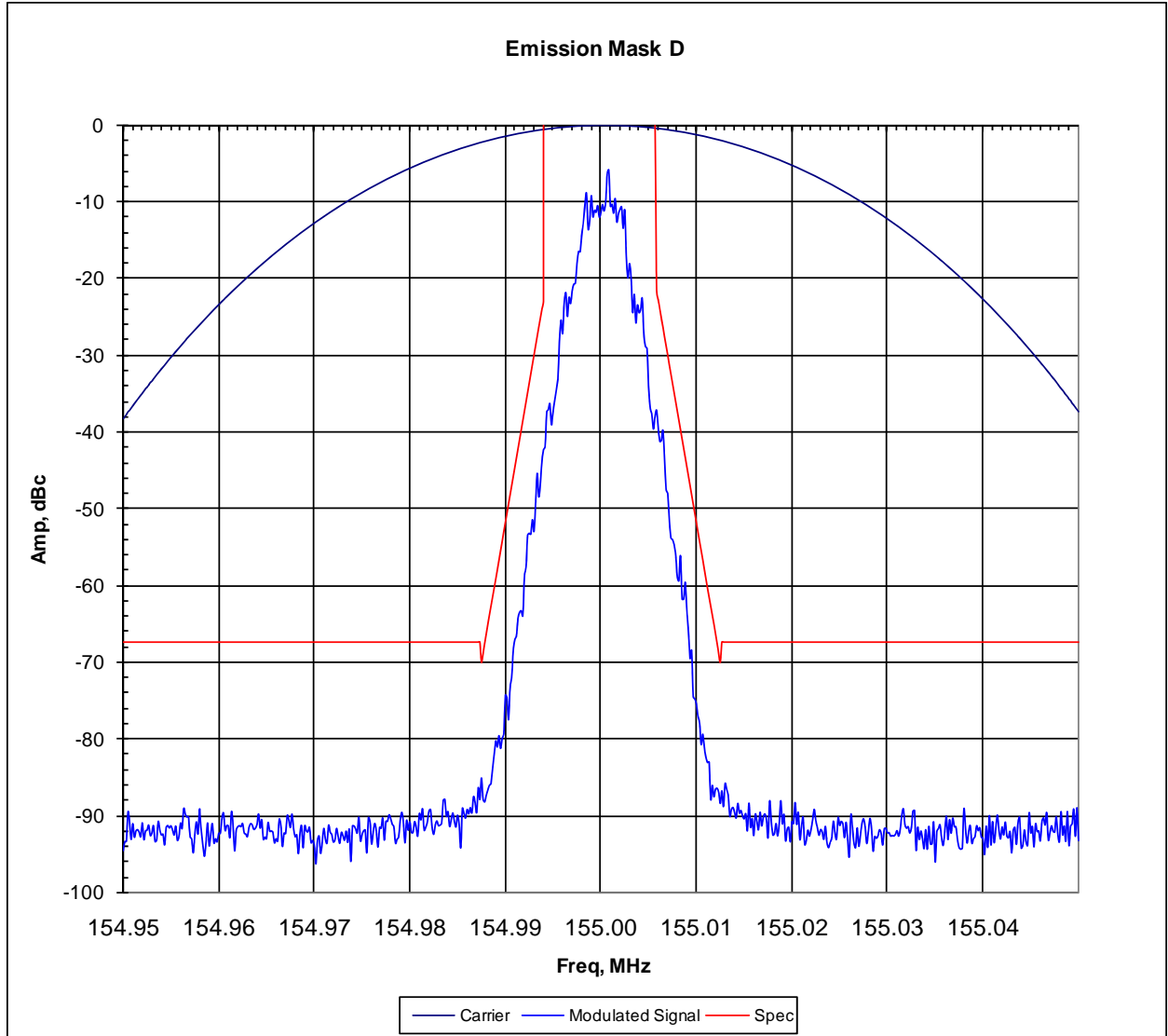
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, 4-LEVEL FSK DATA
EMISSION MASK: D**



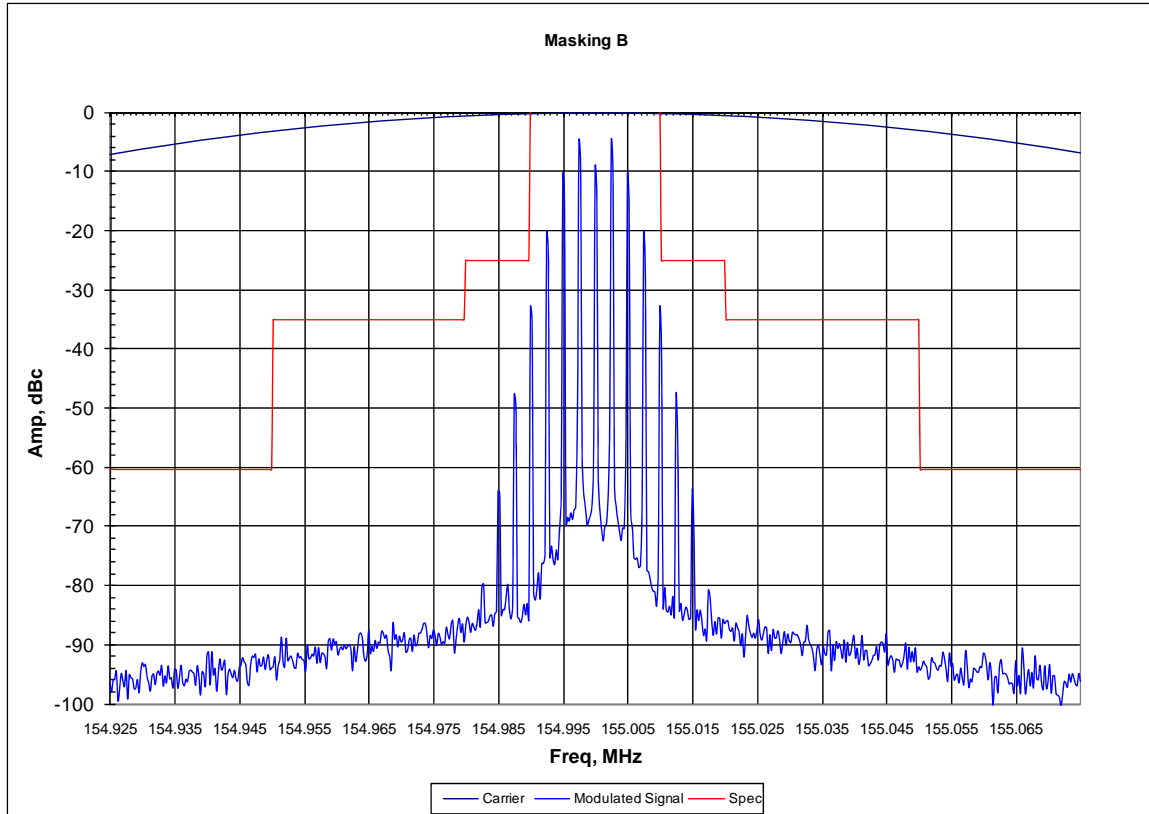
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
12.5 kHz CHANNEL SPACING, 4-LEVEL FSK VOICE AND DATA
EMISSION MASK: D**



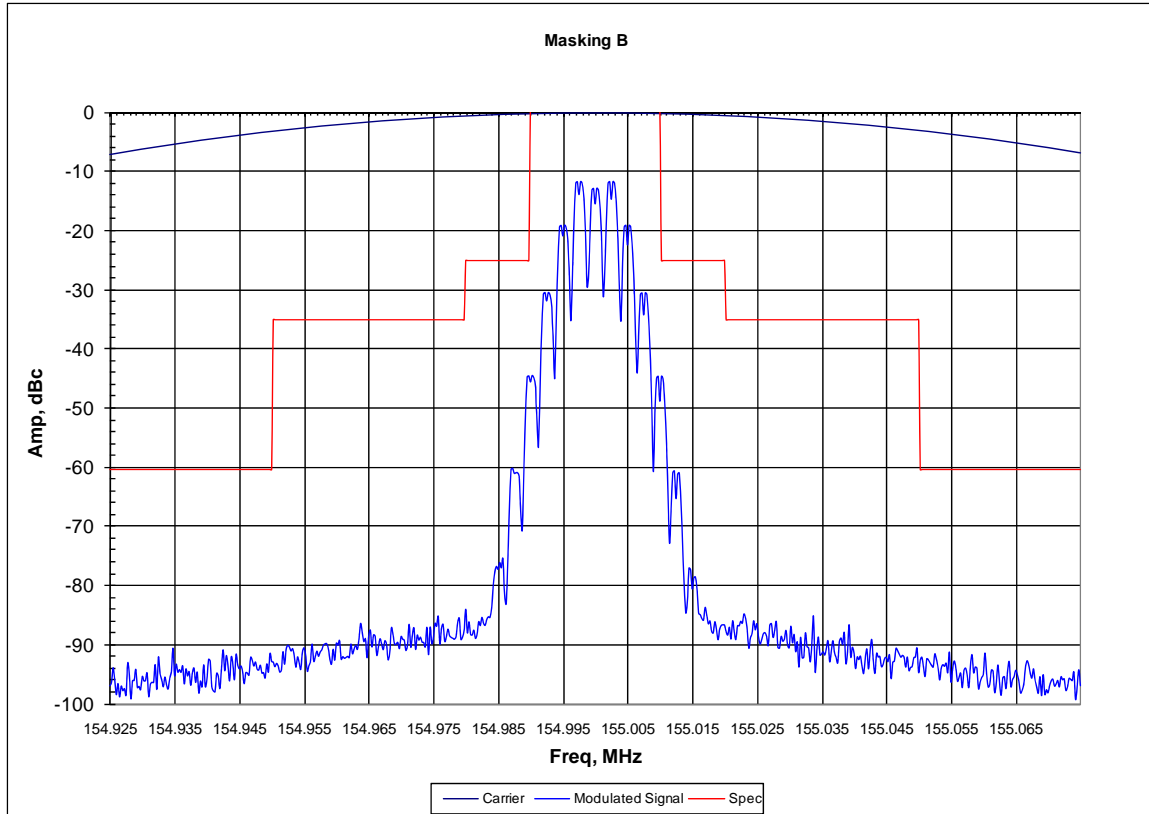
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
25 kHz CHANNEL SPACING, 2500 Hz TONE, CARRIER SQUELCH
EMISSION MASK: B**



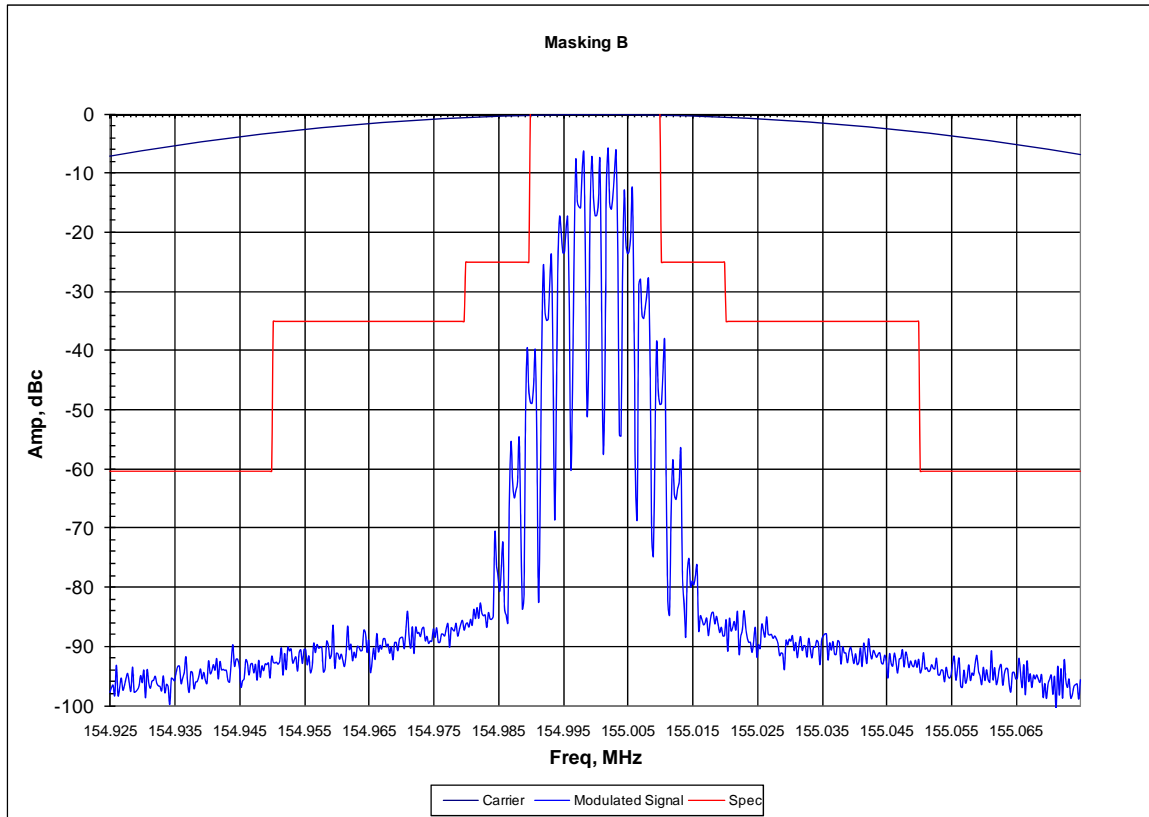
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
25 kHz CHANNEL SPACING, 2500 Hz TONE, TPL 250.3 Hz
EMISSION MASK: B**



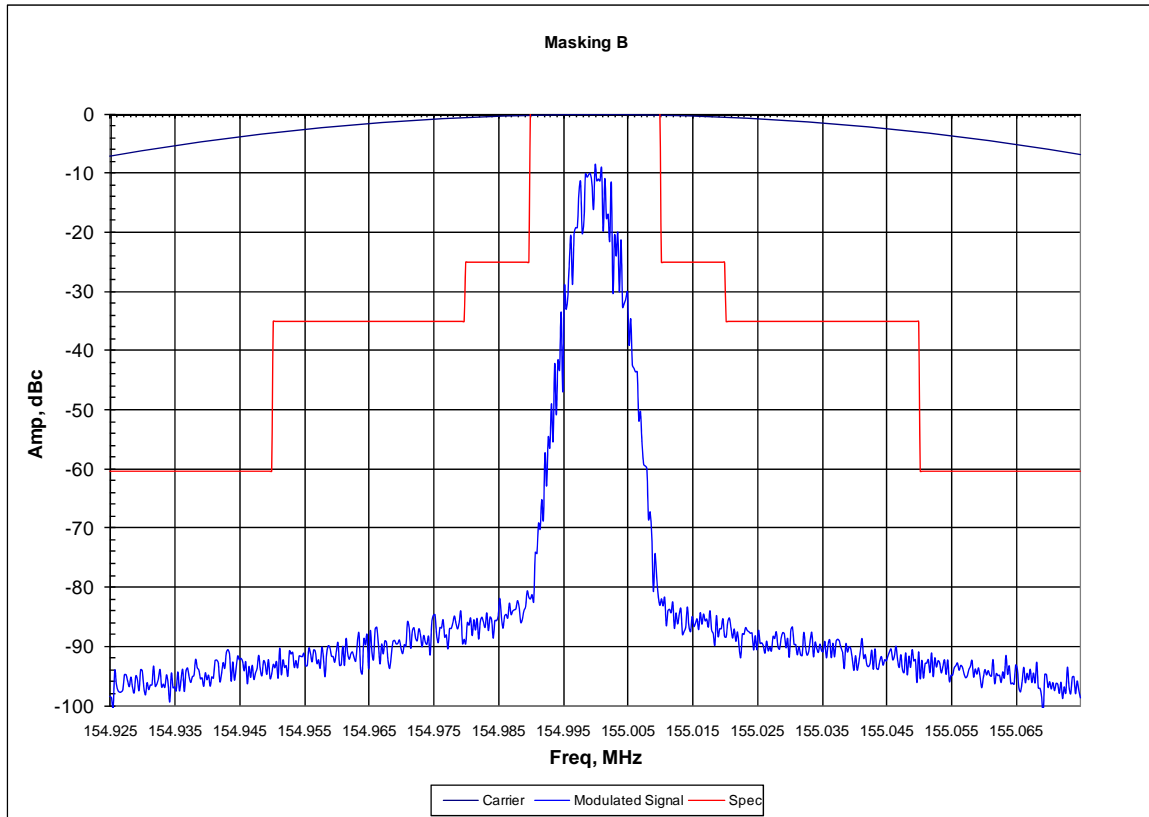
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
25 kHz CHANNEL SPACING, 2500 Hz TONE, DPL 131
EMISSION MASK: B**



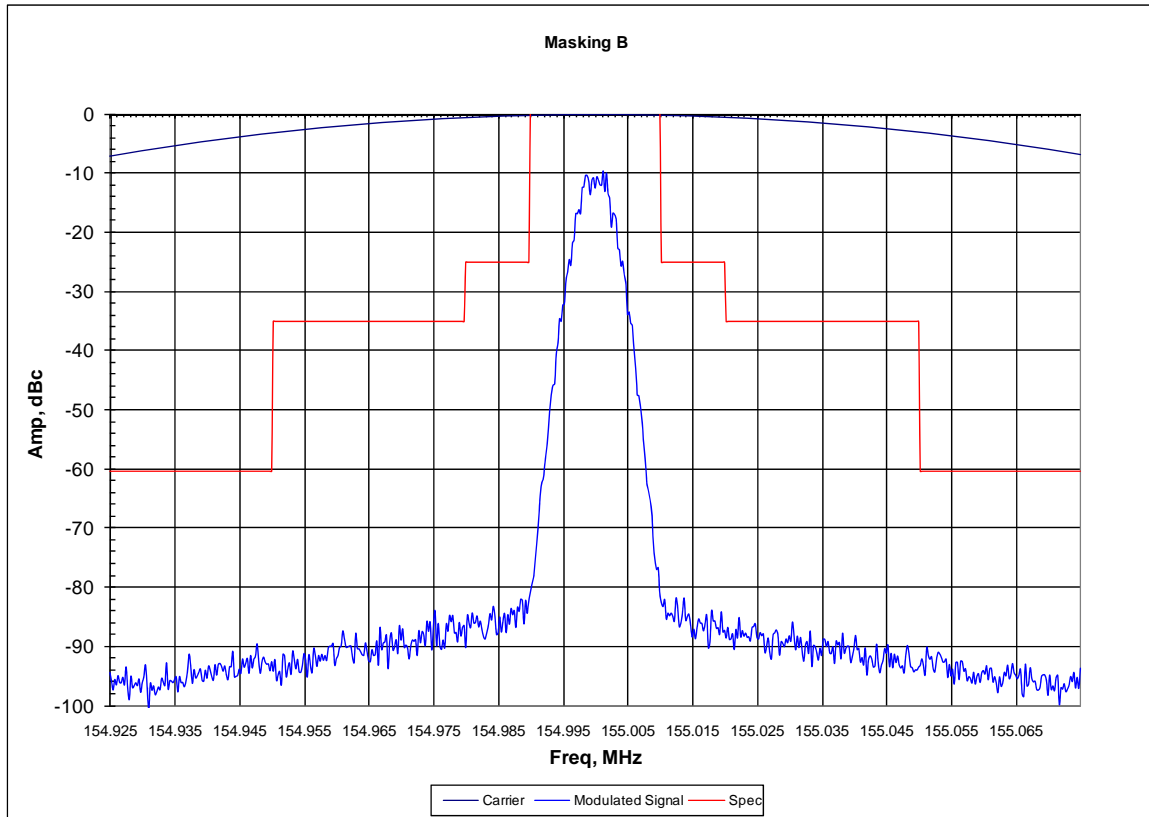
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
25 kHz CHANNEL SPACING, DTMF MODULATION, CARRIER SQUELCH
EMISSION MASK: B**



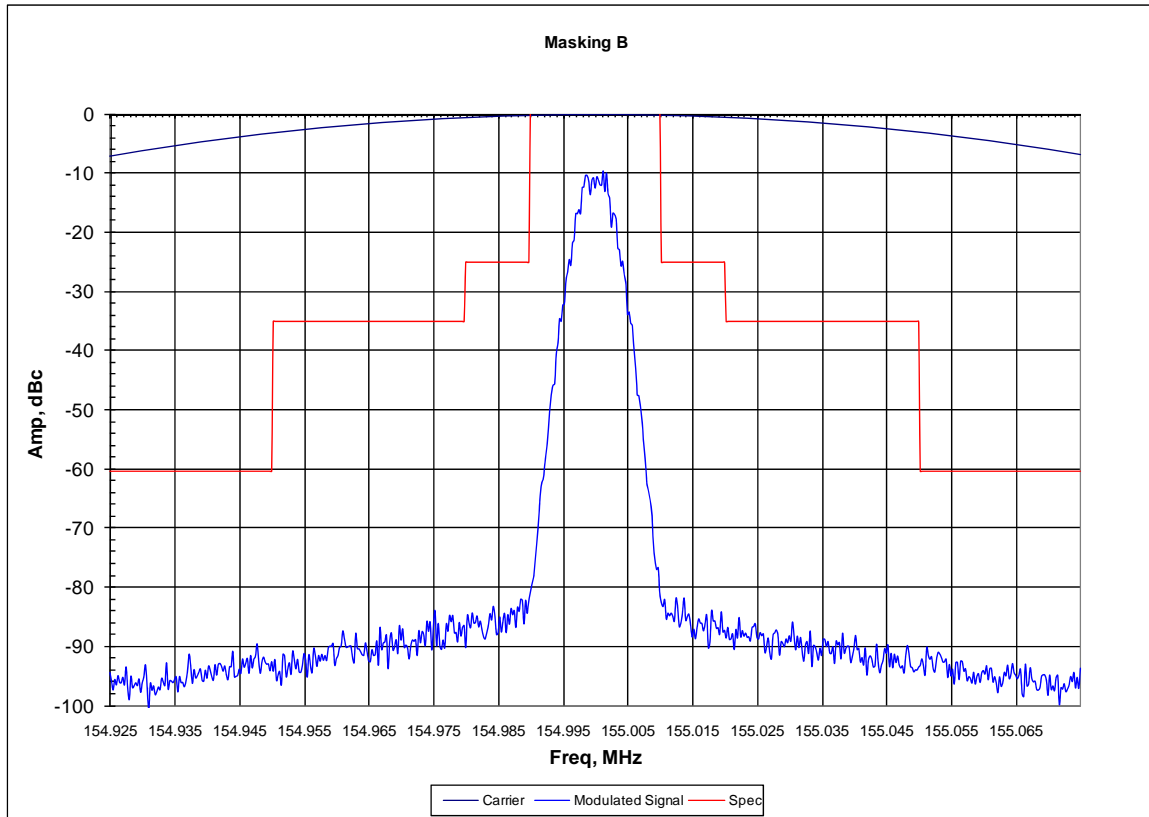
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
25 kHz CHANNEL SPACING, DTMF MODULATION, TPL 250.3 Hz
EMISSION MASK: B**



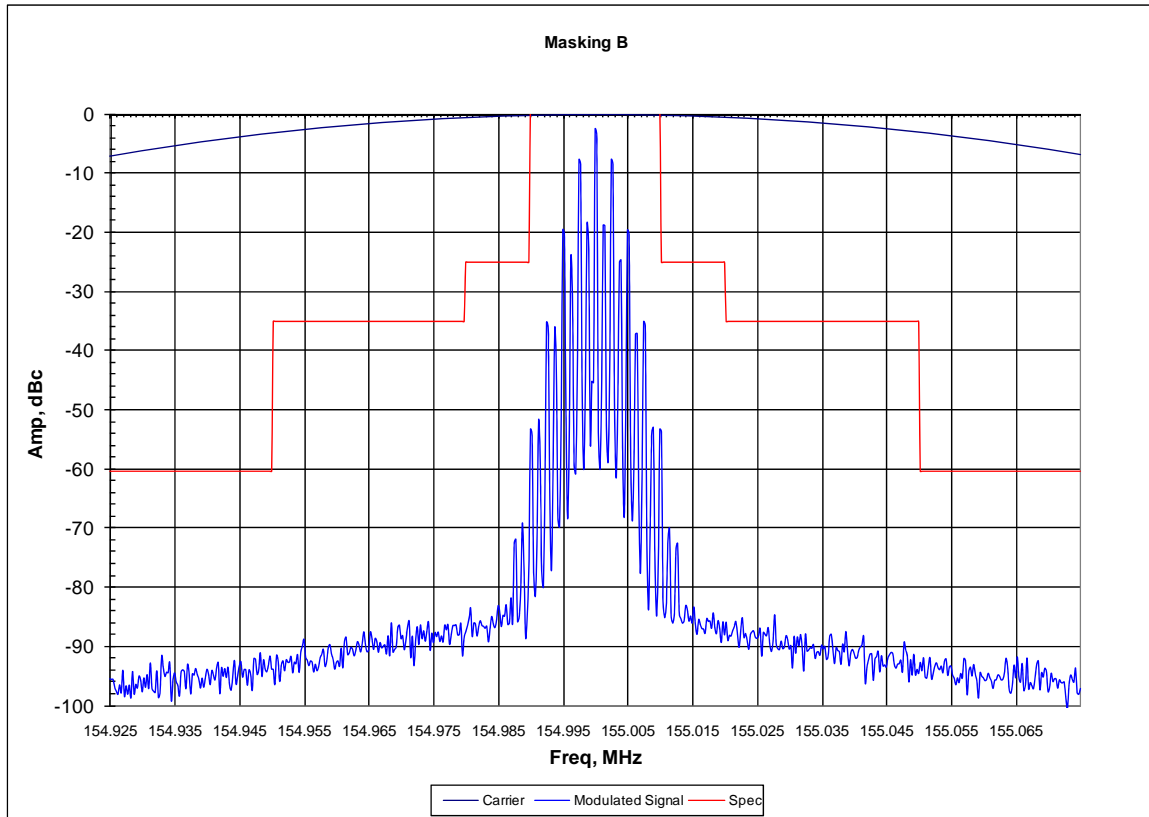
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
25 kHz CHANNEL SPACING, DTMF MODULATION, DPL 131
EMISSION MASK: B**



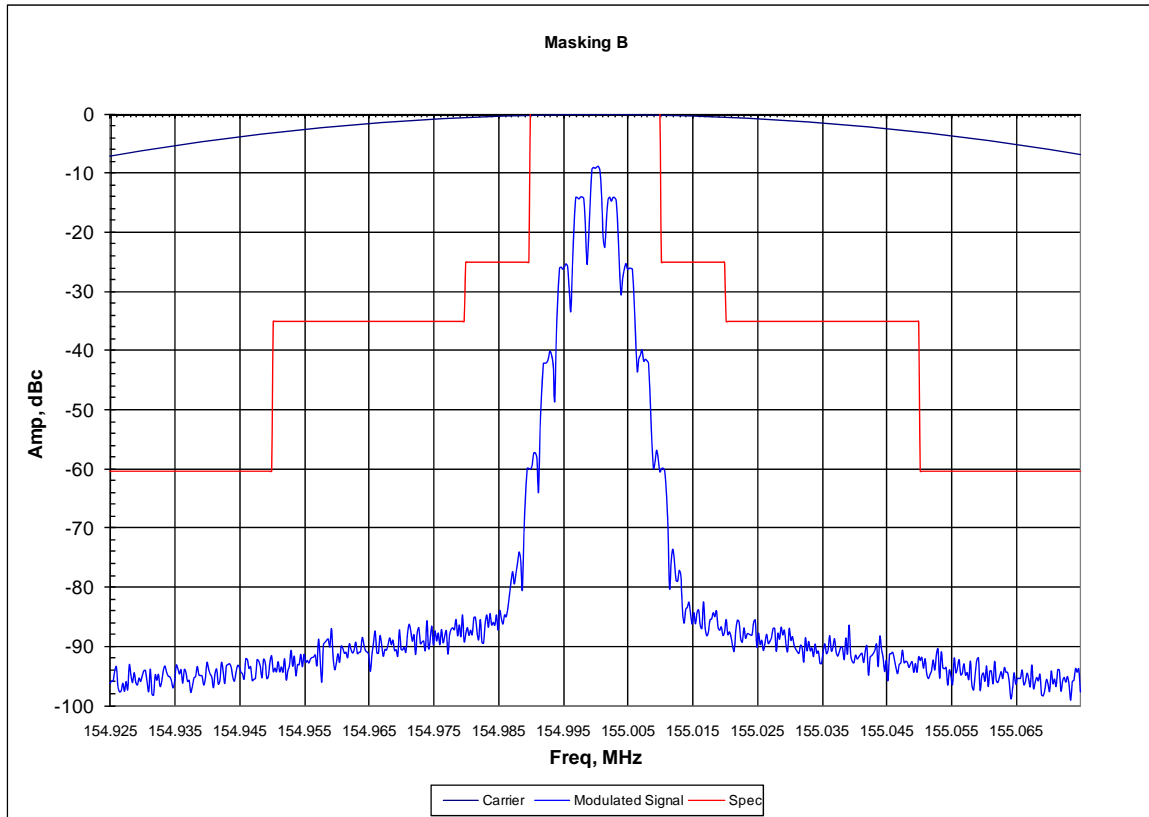
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
25 kHz CHANNEL SPACING, 2000/3000 Hz FSK, CARRIER SQUELCH
EMISSION MASK: B**



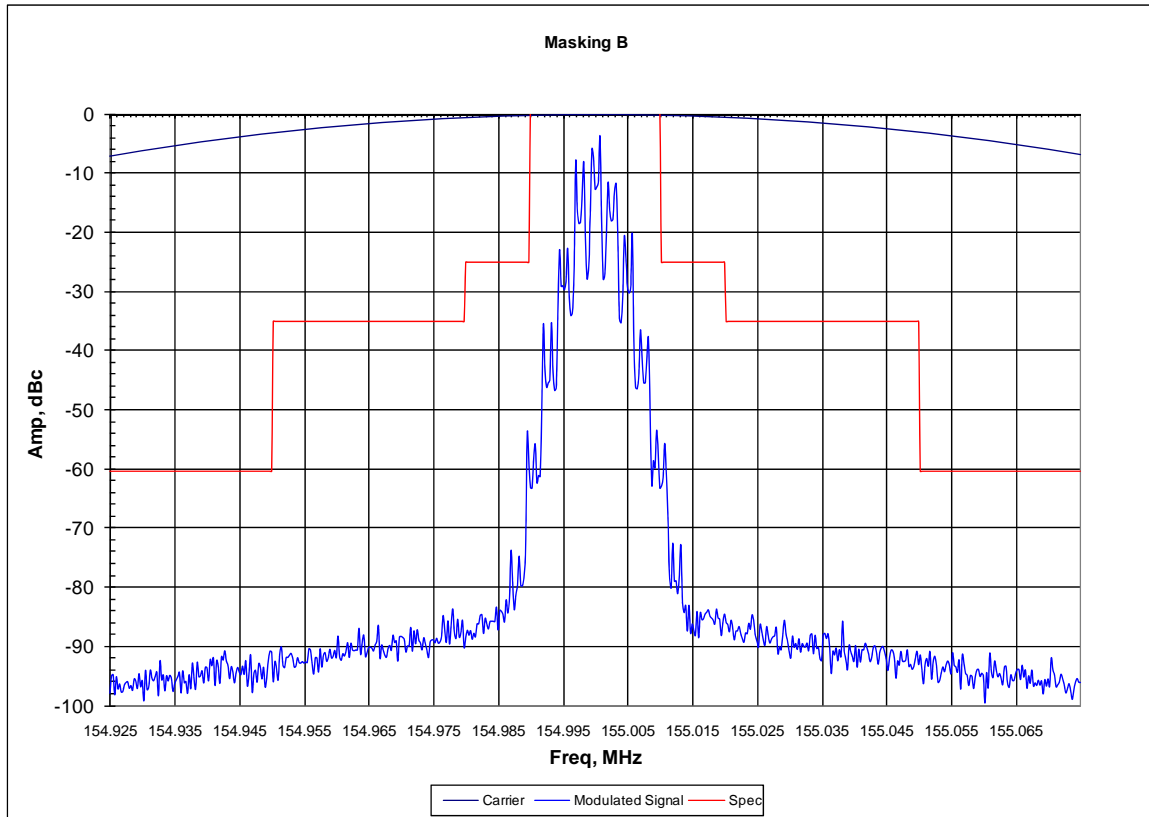
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
25 kHz CHANNEL SPACING, 2000/3000 Hz FSK, TPL 250.3 Hz
EMISSION MASK: B**



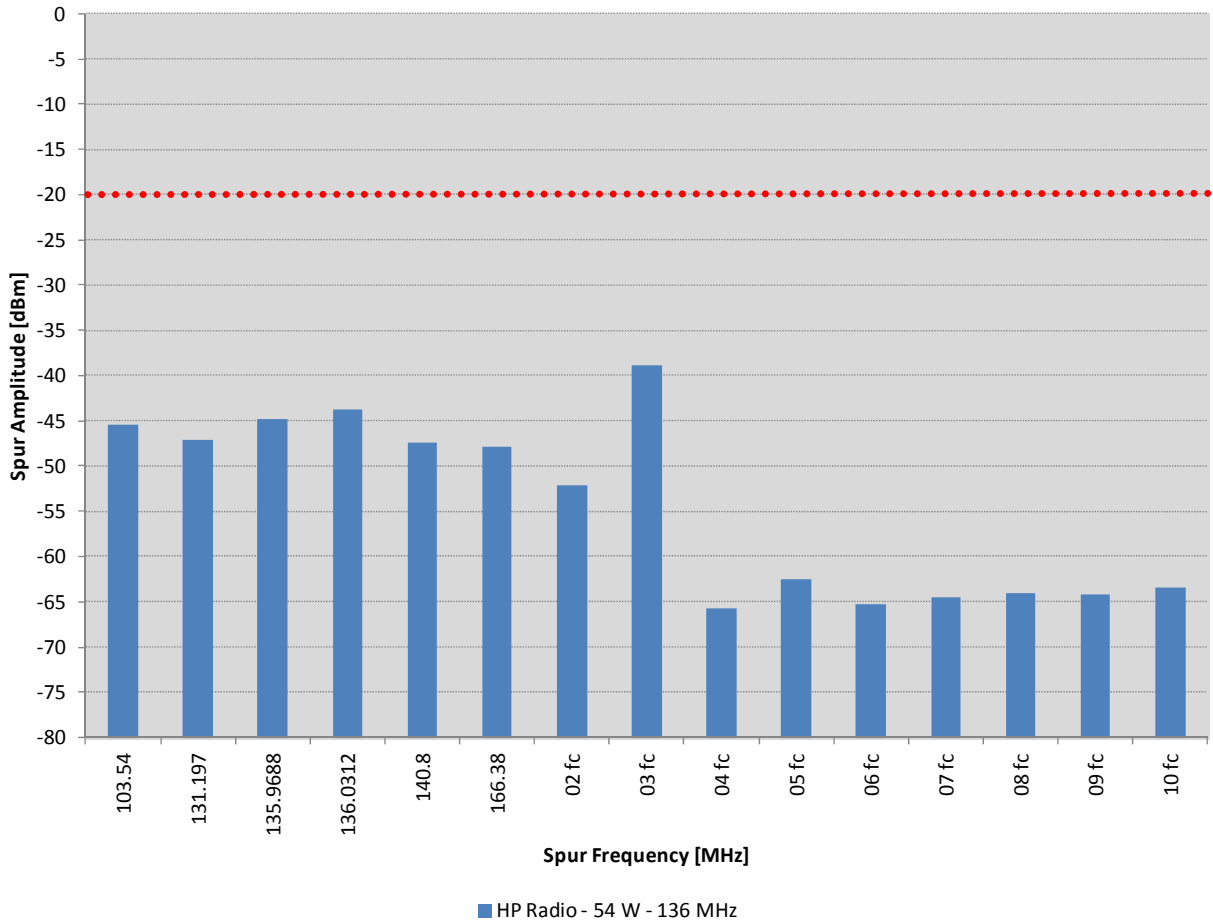
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**OCCUPIED BANDWIDTH MEASUREMENT FOR
25 kHz CHANNEL SPACING, 2000/3000 Hz FSK, DPL 131
EMISSION MASK: B**



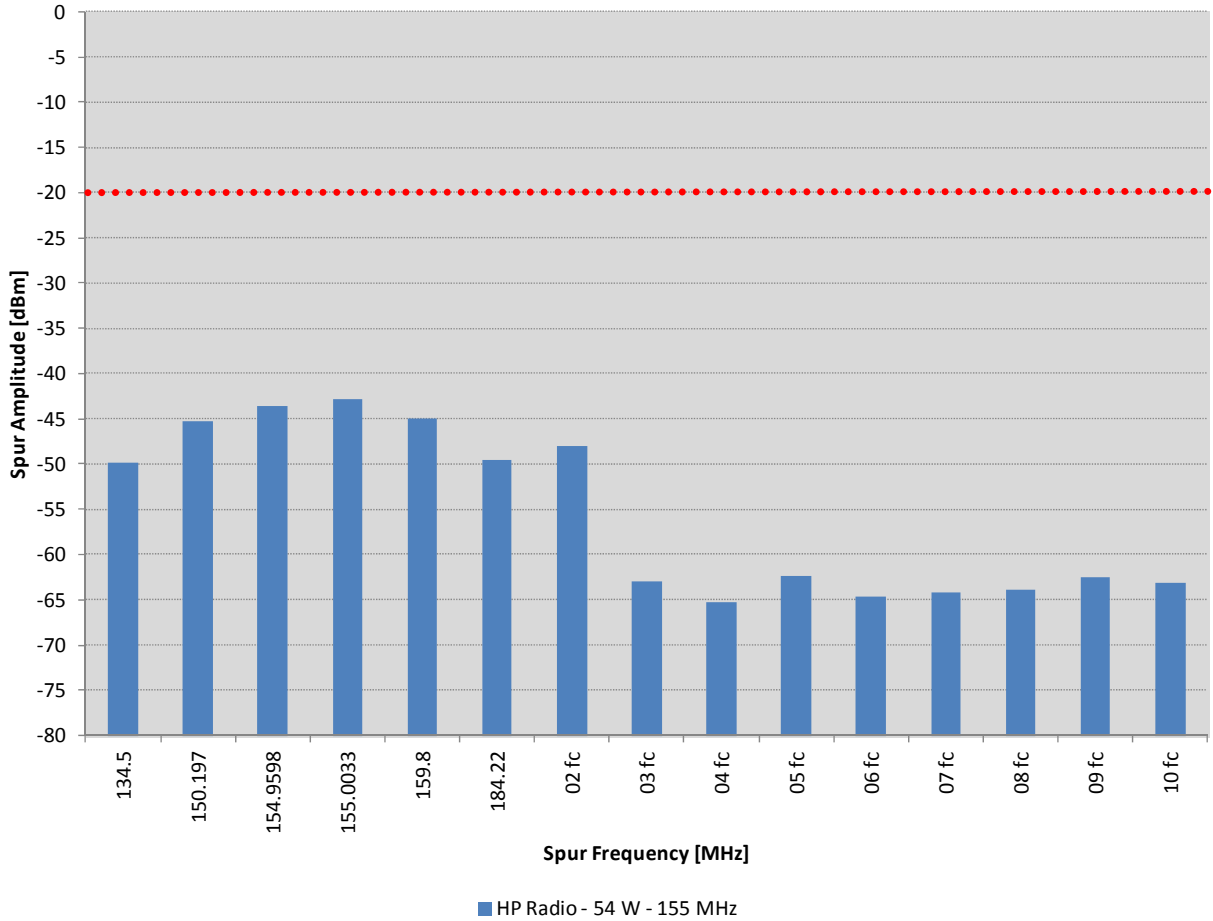
CENTER FREQUENCY:	155.00 MHz
RESOLUTION BANDWIDTH:	100 Hz
VIDEO BANDWIDTH:	1 kHz
SPAN:	100 kHz
HORIZONTAL SCALE:	10 kHz/div
SWEEP TIME:	50 Sec.
VERTICAL SCALE:	10 dB/div
REFERENCE LEVEL:	0 dB (47.3 dBm = 54W)
ATTENUATION:	30 dB

**CONDUCTED SPURIOUS EMISSIONS
HIGH POWER (54W), 136.000 MHz**



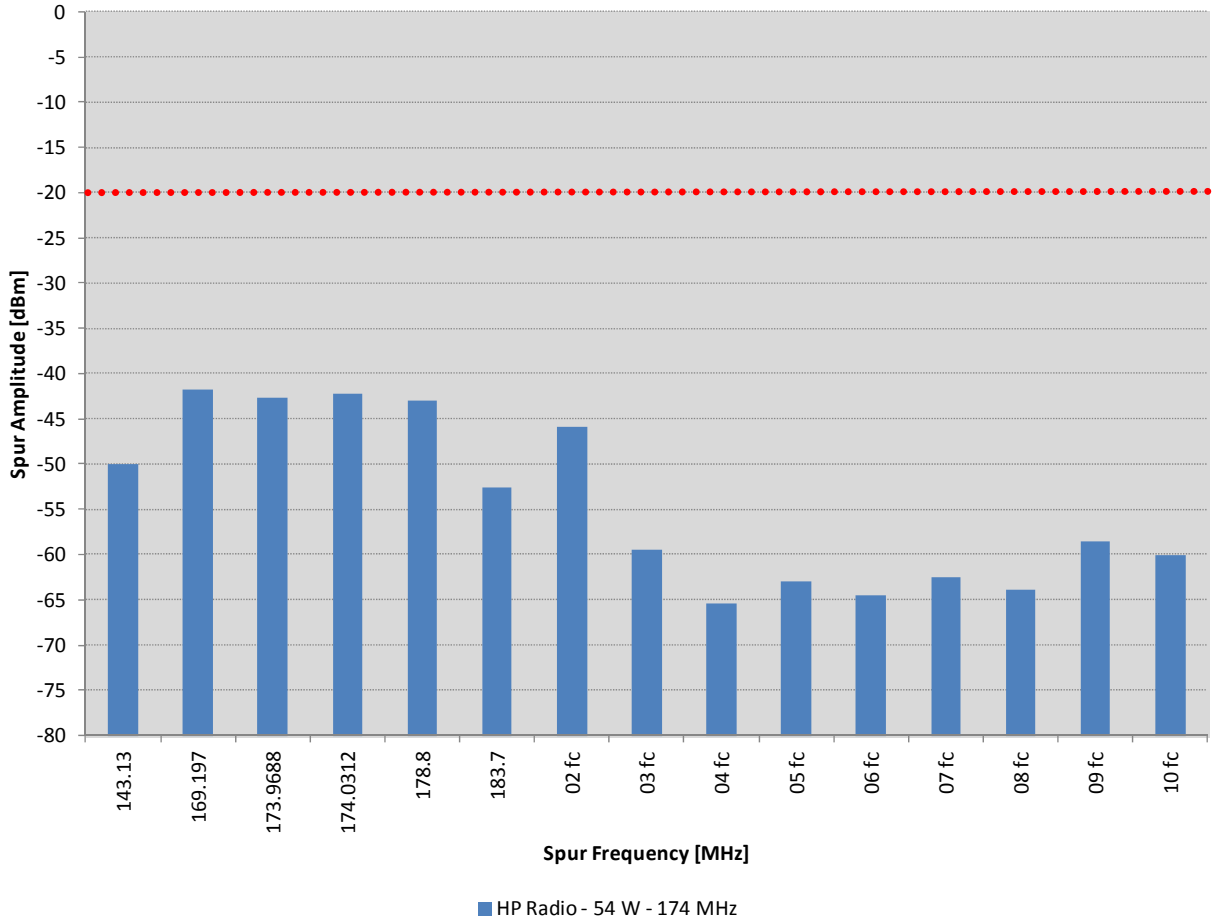
The conducted spurious level is plotted in dBm on the vertical axis.
The specification for conducted spurious emissions is -20 dBm.

**CONDUCTED SPURIOUS EMISSIONS
HIGH POWER (54W), 155.000 MHz**



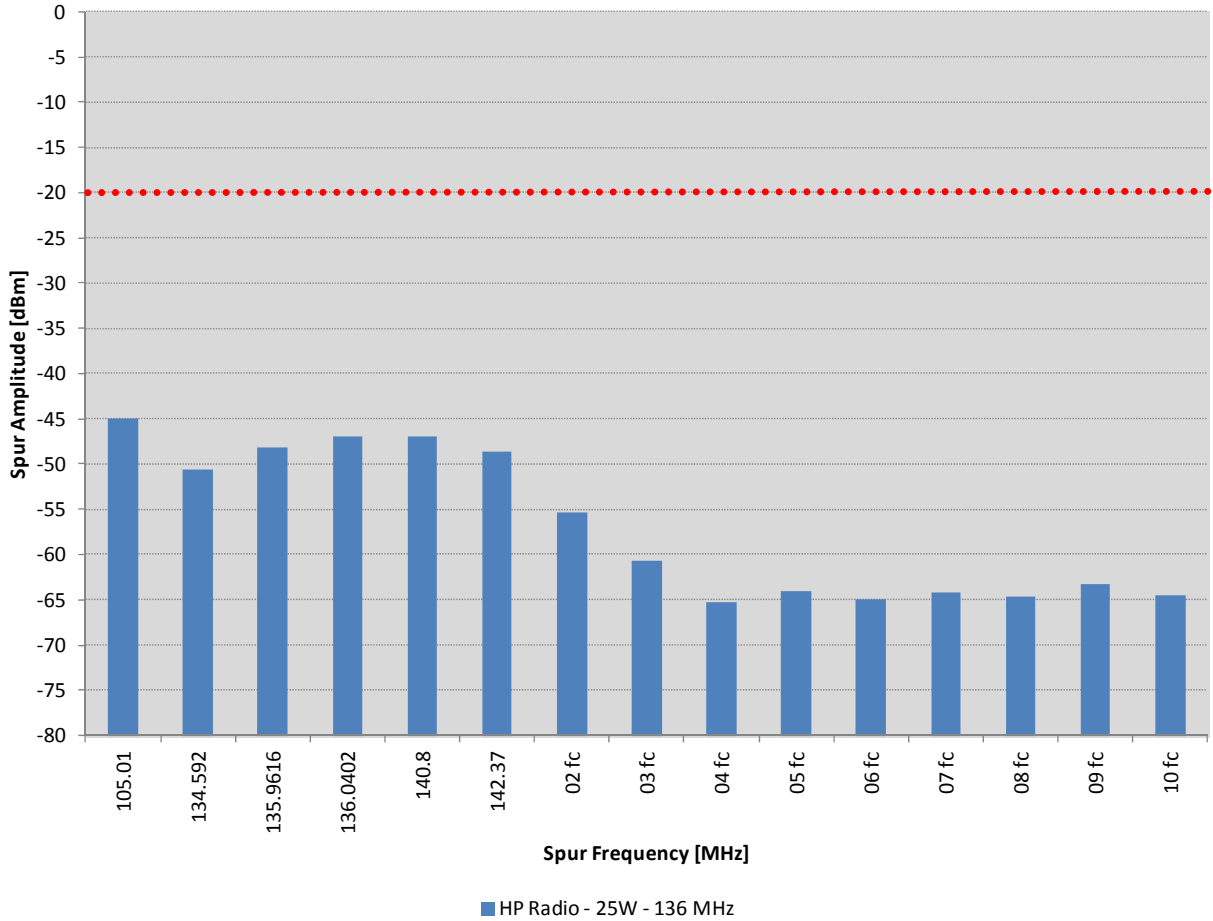
The conducted spurious level is plotted in dBm on the vertical axis.
The specification for conducted spurious emissions is -20 dBm.

**CONDUCTED SPURIOUS EMISSIONS
HIGH POWER (54W), 174.000 MHz**



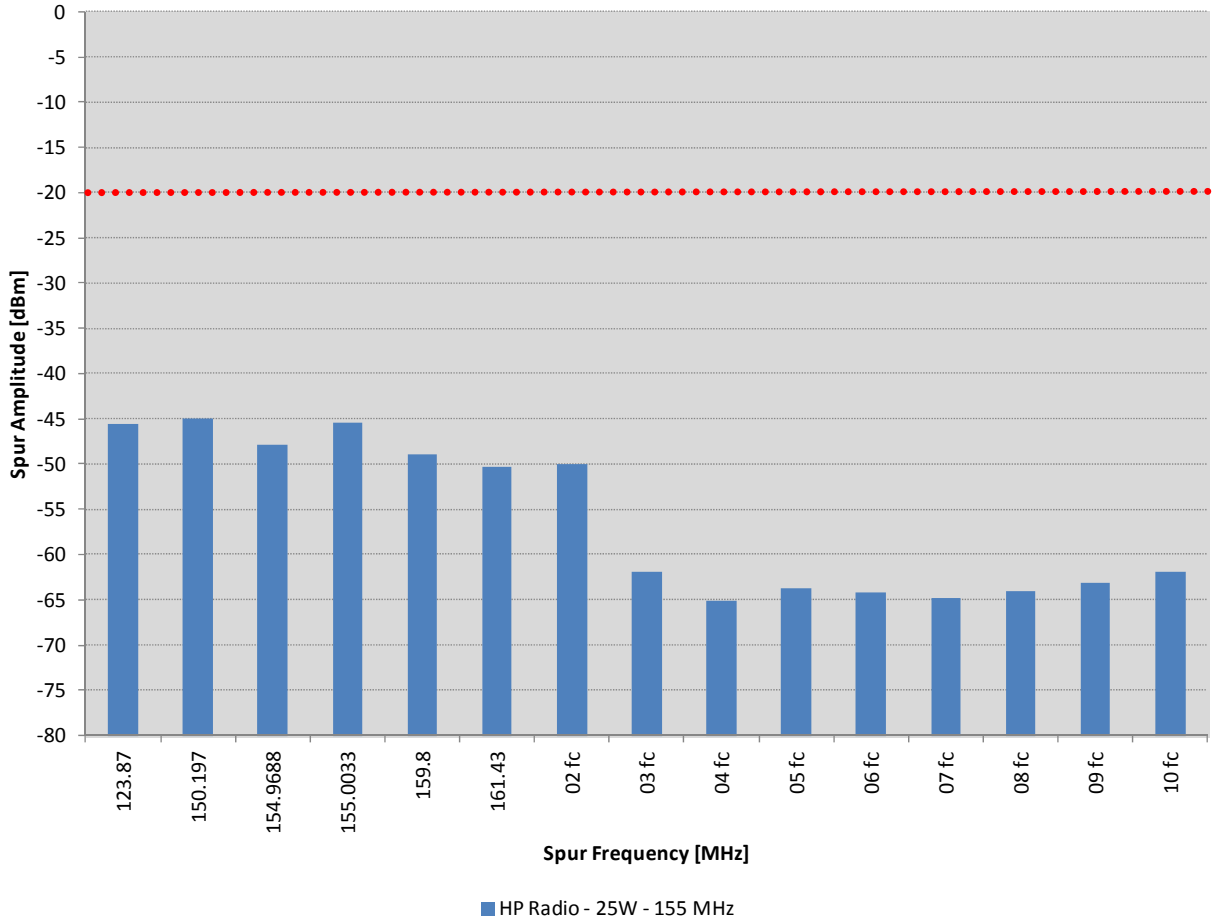
The conducted spurious level is plotted in dBm on the vertical axis.
The specification for conducted spurious emissions is -20 dBm.

**CONDUCTED SPURIOUS EMISSIONS
LOW POWER (25W), 136.000 MHz**



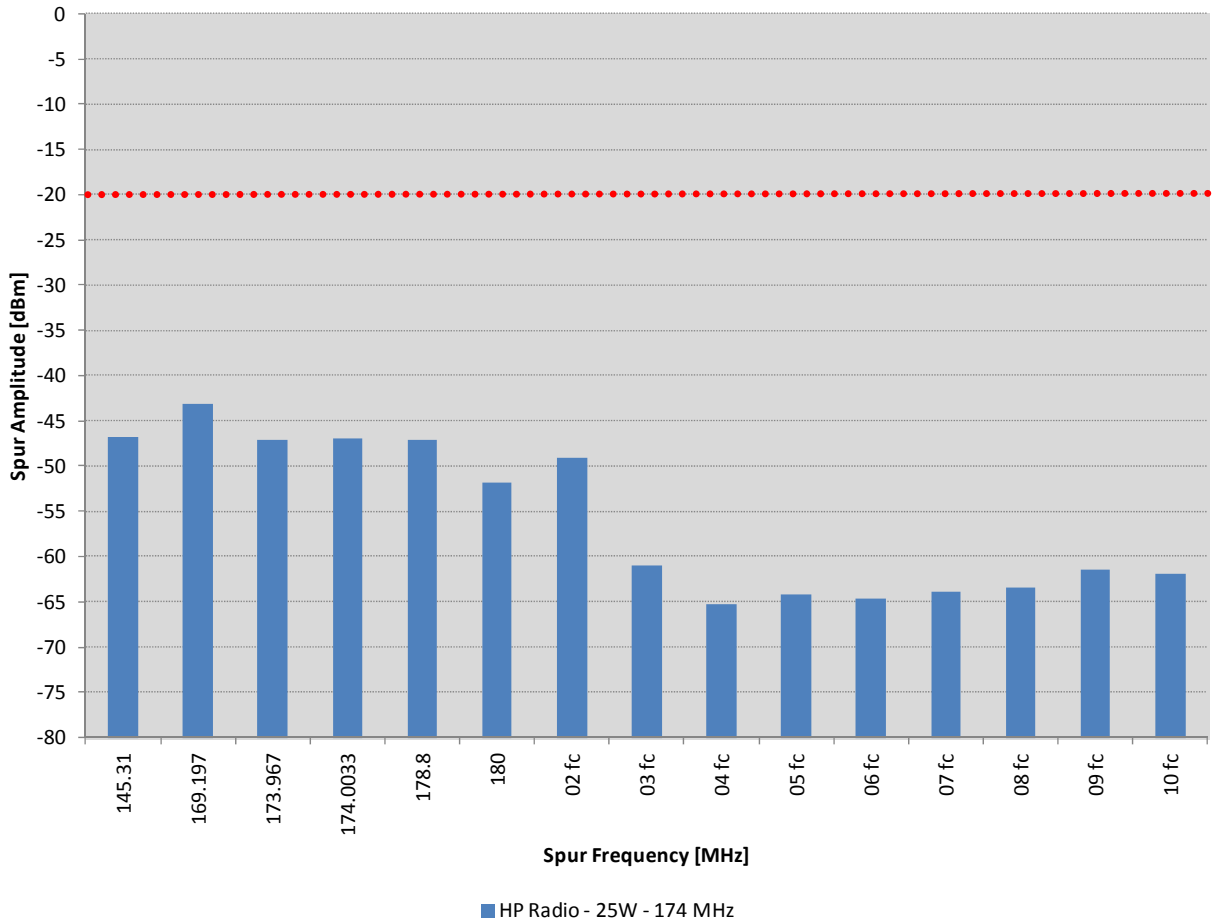
The conducted spurious level is plotted in dBm on the vertical axis.
The specification for conducted spurious emissions is -20 dBm.

**CONDUCTED SPURIOUS EMISSIONS
LOW POWER (25W), 155.000 MHz**



The conducted spurious level is plotted in dBm on the vertical axis.
The specification for conducted spurious emissions is -20 dBm.

**CONDUCTED SPURIOUS EMISSIONS
LOW POWER (25W), 174.000 MHz**



The conducted spurious level is plotted in dBm on the vertical axis.
The specification for conducted spurious emissions is -20 dBm.

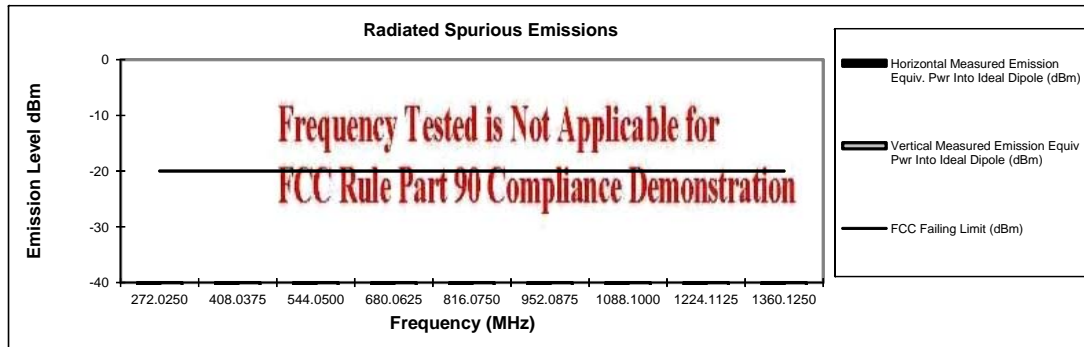
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 54 Watts

136.0125 MHz

Channel Spacing 12.5kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
272.0250	-20	*	*
408.0375	-20	*	*
544.0500	-20	*	*
680.0625	-20	*	*
816.0750	-20	*	*
952.0875	-20	*	*
1088.1000	-20	*	*
1224.1125	-20	*	*
1360.1250	-20	*	*



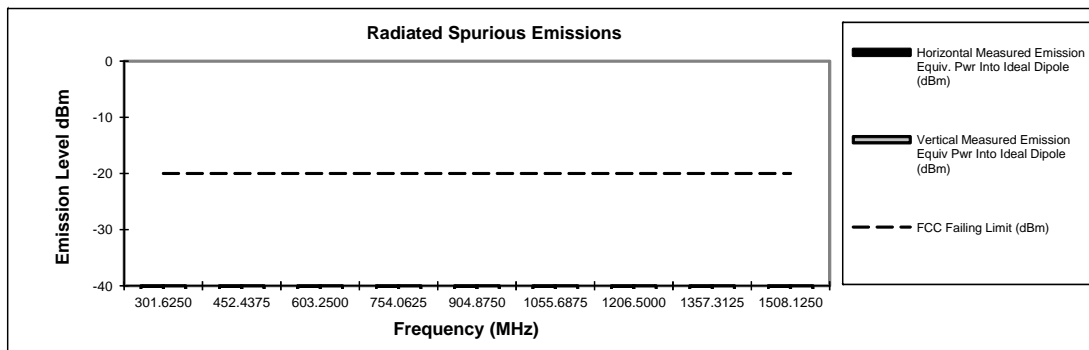
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 54 Watts

150.8125 MHz

Channel Spacing 12.5kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
301.6250	-20	*	*
452.4375	-20	*	*
603.2500	-20	*	*
754.0625	-20	*	*
904.8750	-20	*	*
1055.6875	-20	*	*
1206.5000	-20	*	*
1357.3125	-20	*	*
1508.1250	-20	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

Pursuant to CFR 47 Part 2.1057(c), emissions attenuated more than 20 dB below the permissible limit are not reported.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Curt Mc Lennan

November 27, 2012

FCC Registration: 91932 / Industry Canada: IC109U-1

Motorola Solutions

FCC ID:ABZ99FT3091 \ IC ID:109AB-99FT3091

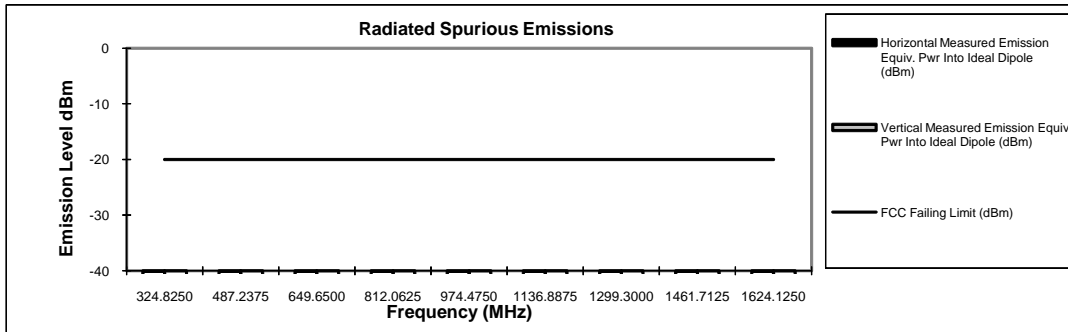
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 54 Watts

162.4125 MHz

Channel Spacing 12.5kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
324.8250	-20	*	*
487.2375	-20	*	*
649.6500	-20	*	*
812.0625	-20	*	*
974.4750	-20	*	*
1136.8875	-20	*	*
1299.3000	-20	*	*
1461.7125	-20	*	*
1624.1250	-20	*	*



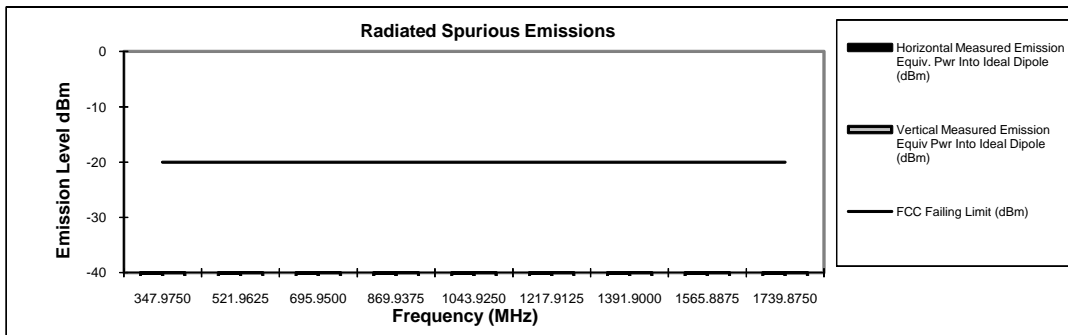
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 54 Watts

173.9875 MHz

Channel Spacing 12.5kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
347.9750	-20	*	*
521.9625	-20	*	*
695.9500	-20	*	*
869.9375	-20	*	*
1043.9250	-20	*	*
1217.9125	-20	*	*
1391.9000	-20	*	*
1565.8875	-20	*	*
1739.8750	-20	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

Pursuant to CFR 47 Part 2.1057(c), emissions attenuated more than 20 dB below the permissible limit are not reported.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Curt Mc Lennan

November 27, 2012

FCC Registration: 91932 / Industry Canada: IC109U-1

Motorola Solutions

FCC ID:ABZ99FT3091 \ IC ID:109AB-99FT3091

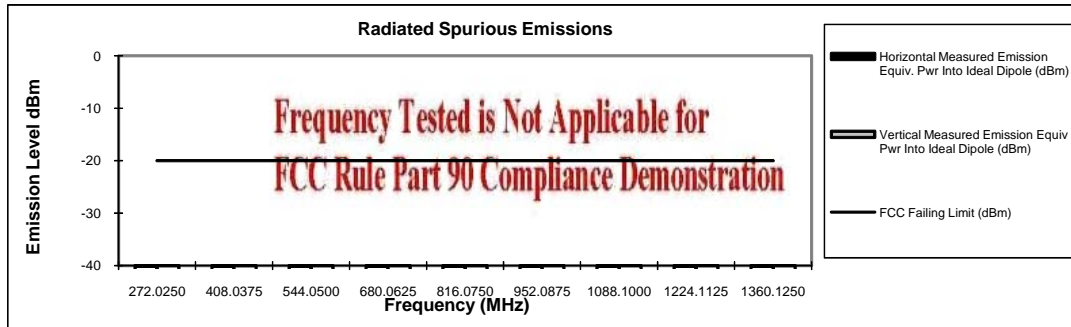
Transmit Radiated Spurious Emissions: **PMUD3240AABNAA**

Tx Power: 25 Watts

136.0125 MHz

Channel Spacing 12.5kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
272.0250	-20	*	*
408.0375	-20	*	*
544.0500	-20	*	*
680.0625	-20	*	*
816.0750	-20	*	*
952.0875	-20	*	*
1088.1000	-20	*	*
1224.1125	-20	*	*
1360.1250	-20	*	*



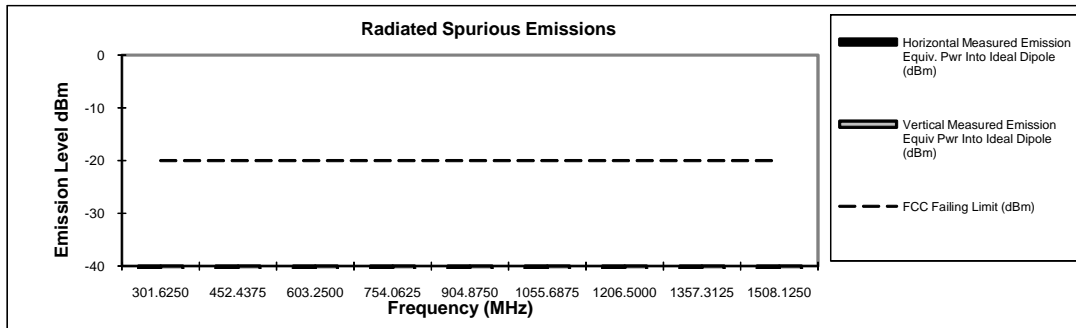
Transmit Radiated Spurious Emissions: **PMUD3240AABNAA**

Tx Power: 25 Watts

150.8125 MHz

Channel Spacing 12.5kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
301.6250	-20	*	*
452.4375	-20	*	*
603.2500	-20	*	*
754.0625	-20	*	*
904.8750	-20	*	*
1055.6875	-20	*	*
1206.5000	-20	*	*
1357.3125	-20	*	*
1508.1250	-20	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

Pursuant to CFR 47 Part 2.1057(c), emissions attenuated more than 20 dB below the permissible limit are not reported.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Curt Mc Lennan

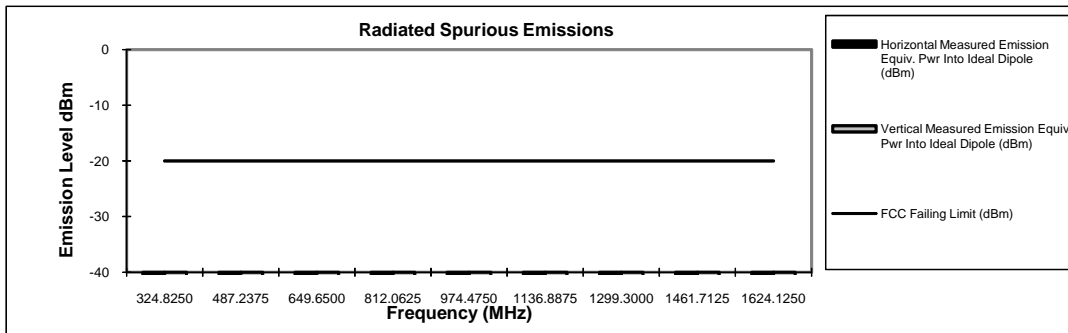
November 27, 2012

FCC Registration: 91932 / Industry Canada: IC109U-1

Transmit Radiated Spurious Emissions: PMUD3240AABNAA
Tx Power: 25 Watts

162.4125 MHz **Channel Spacing 12.5kHz | S/N 776TNV0170**

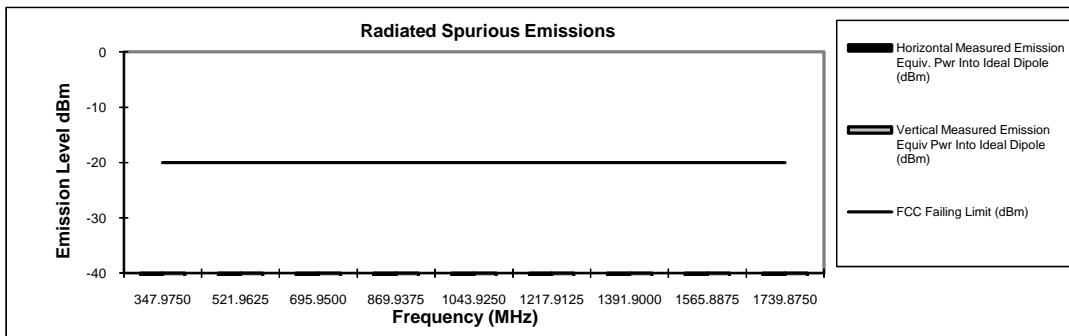
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
324.8250	-20	*	*
487.2375	-20	*	*
649.6500	-20	*	*
812.0625	-20	*	*
974.4750	-20	*	*
1136.8875	-20	*	*
1299.3000	-20	*	*
1461.7125	-20	*	*
1624.1250	-20	*	*



Transmit Radiated Spurious Emissions: PMUD3240AABNAA
Tx Power: 25 Watts

173.9875 MHz **Channel Spacing 12.5kHz | S/N 776TNV0170**

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
347.9750	-20	*	*
521.9625	-20	*	*
695.9500	-20	*	*
869.9375	-20	*	*
1043.9250	-20	*	*
1217.9125	-20	*	*
1391.9000	-20	*	*
1565.8875	-20	*	*
1739.8750	-20	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

Pursuant to CFR 47 Part 2.1057(c), emissions attenuated more than 20 dB below the permissible limit are not reported.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Curt Mc Lennan

November 27, 2012

FCC Registration: 91932 / Industry Canada: IC109U-1

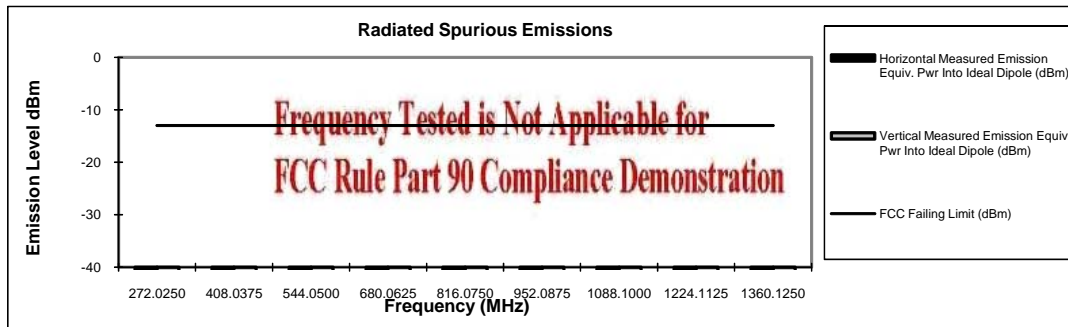
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 54 Watts

136.0125 MHz

Channel Spacing 25kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
272.0250	-13	*	*
408.0375	-13	*	*
544.0500	-13	*	*
680.0625	-13	*	*
816.0750	-13	*	*
952.0875	-13	*	*
1088.1000	-13	*	*
1224.1125	-13	*	*
1360.1250	-13	*	*



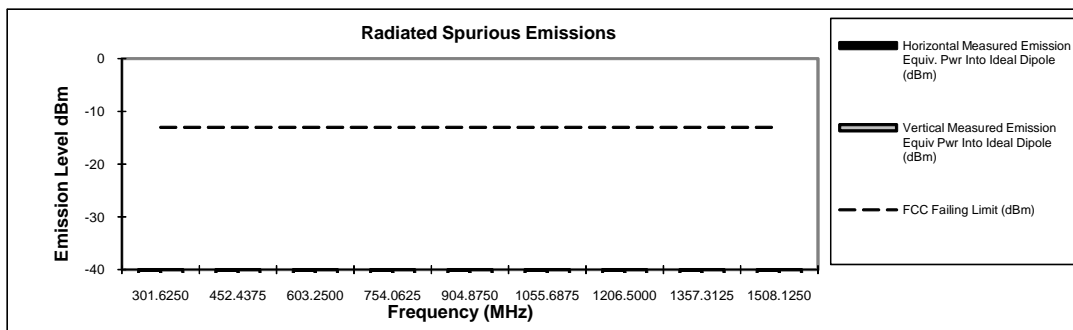
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 54 Watts

150.8125 MHz

Channel Spacing 25kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
301.6250	-13	*	*
452.4375	-13	*	*
603.2500	-13	*	*
754.0625	-13	*	*
904.8750	-13	*	*
1055.6875	-13	*	*
1206.5000	-13	*	*
1357.3125	-13	*	*
1508.1250	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

Pursuant to CFR 47 Part 2.1057(c), emissions attenuated more than 20 dB below the permissible limit are not reported.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Andy Gessner

November 29, 2012

FCC Registration: 91932 / Industry Canada: IC109U-1

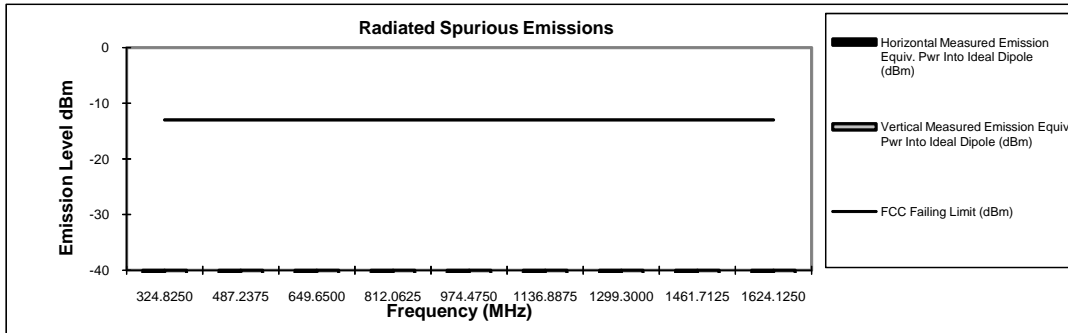
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 54 Watts

162.4125 MHz

Channel Spacing 25kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
324.8250	-13	*	*
487.2375	-13	*	*
649.6500	-13	*	*
812.0625	-13	*	*
974.4750	-13	*	*
1136.8875	-13	*	*
1299.3000	-13	*	*
1461.7125	-13	*	*
1624.1250	-13	*	*



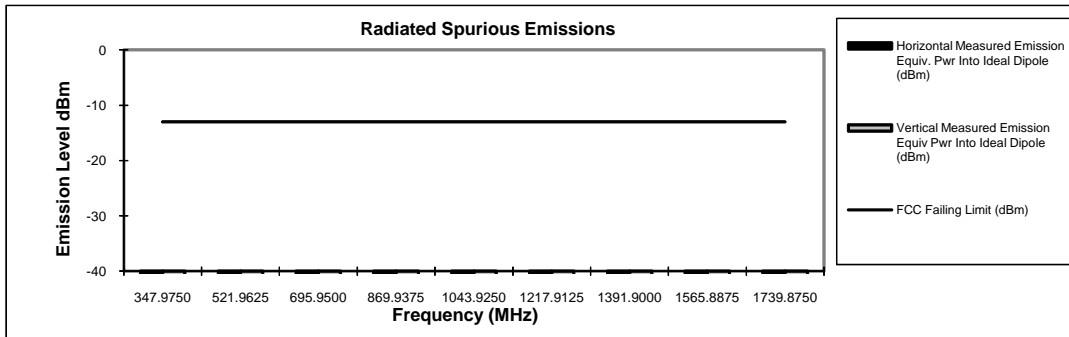
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 54 Watts

173.9875 MHz

Channel Spacing 25kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
347.9750	-13	*	*
521.9625	-13	*	*
695.9500	-13	*	*
869.9375	-13	*	*
1043.9250	-13	*	*
1217.9125	-13	*	*
1391.9000	-13	*	*
1565.8875	-13	*	*
1739.8750	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

Pursuant to CFR 47 Part 2.1057(c), emissions attenuated more than 20 dB below the permissible limit are not reported.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Andy Gessner

November 29, 2012

FCC Registration: 91932 / Industry Canada: IC109U-1

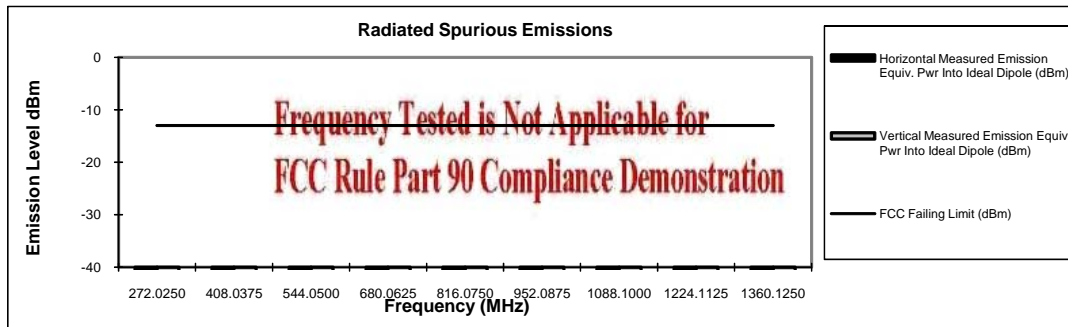
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 25 Watts

136.0125 MHz

Channel Spacing 25kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
272.0250	-13	*	*
408.0375	-13	*	*
544.0500	-13	*	*
680.0625	-13	*	*
816.0750	-13	*	*
952.0875	-13	*	*
1088.1000	-13	*	*
1224.1125	-13	*	*
1360.1250	-13	*	*



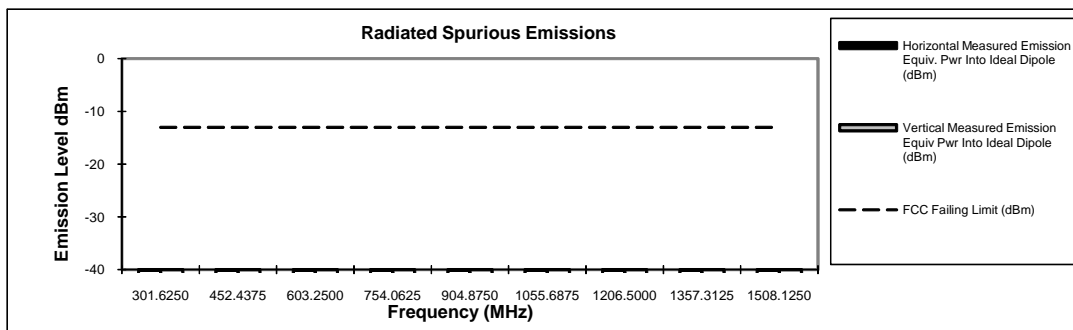
Transmit Radiated Spurious Emissions: PMUD3240AABNAA

Tx Power: 25 Watts

150.8125 MHz

Channel Spacing 25kHz | S/N 776TNV0170

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
301.6250	-13	*	*
452.4375	-13	*	*
603.2500	-13	*	*
754.0625	-13	*	*
904.8750	-13	*	*
1055.6875	-13	*	*
1206.5000	-13	*	*
1357.3125	-13	*	*
1508.1250	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

Pursuant to CFR 47 Part 2.1057(c), emissions attenuated more than 20 dB below the permissible limit are not reported.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Andy Gessner

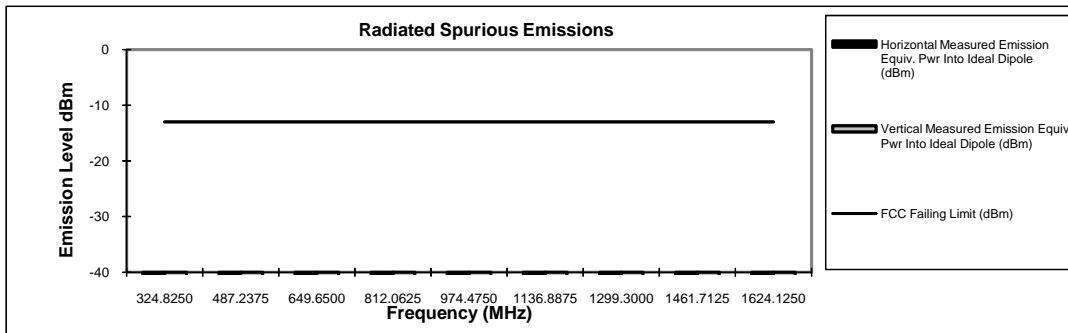
November 29, 2012

FCC Registration: 91932 / Industry Canada: IC109U-1

Transmit Radiated Spurious Emissions: PMUD3240AABNAA
Tx Power: 25 Watts

162.4125 MHz **Channel Spacing 25kHz | S/N 776TNV0170**

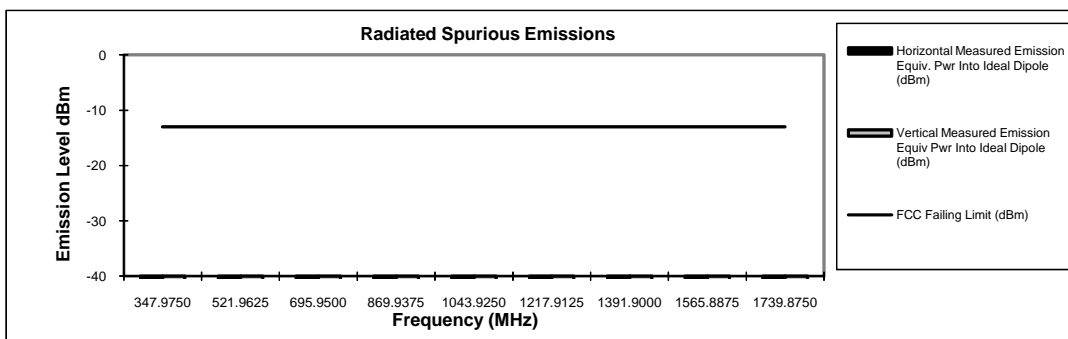
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
324.8250	-13	*	*
487.2375	-13	*	*
649.6500	-13	*	*
812.0625	-13	*	*
974.4750	-13	*	*
1136.8875	-13	*	*
1299.3000	-13	*	*
1461.7125	-13	*	*
1624.1250	-13	*	*



Transmit Radiated Spurious Emissions: PMUD3240AABNAA
Tx Power: 25 Watts

173.9875 MHz **Channel Spacing 25kHz | S/N 776TNV0170**

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
347.9750	-13	*	*
521.9625	-13	*	*
695.9500	-13	*	*
869.9375	-13	*	*
1043.9250	-13	*	*
1217.9125	-13	*	*
1391.9000	-13	*	*
1565.8875	-13	*	*
1739.8750	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

Pursuant to CFR 47 Part 2.1057(c), emissions attenuated more than 20 dB below the permissible limit are not reported.

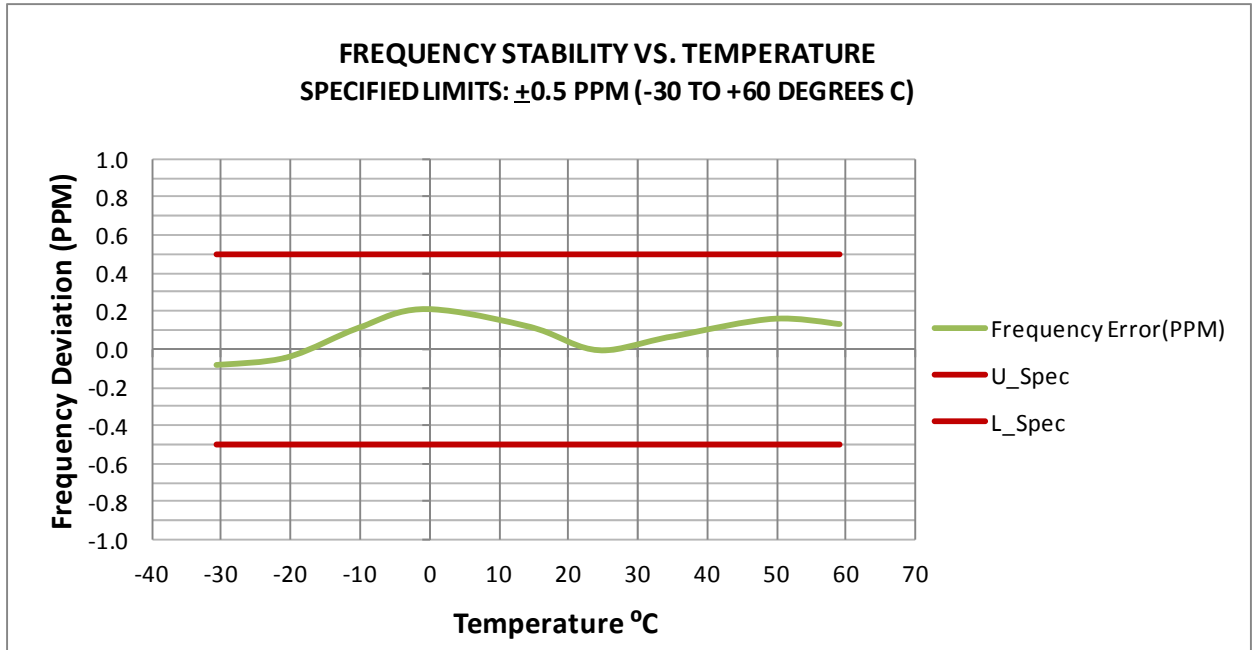
The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Andy Gessner

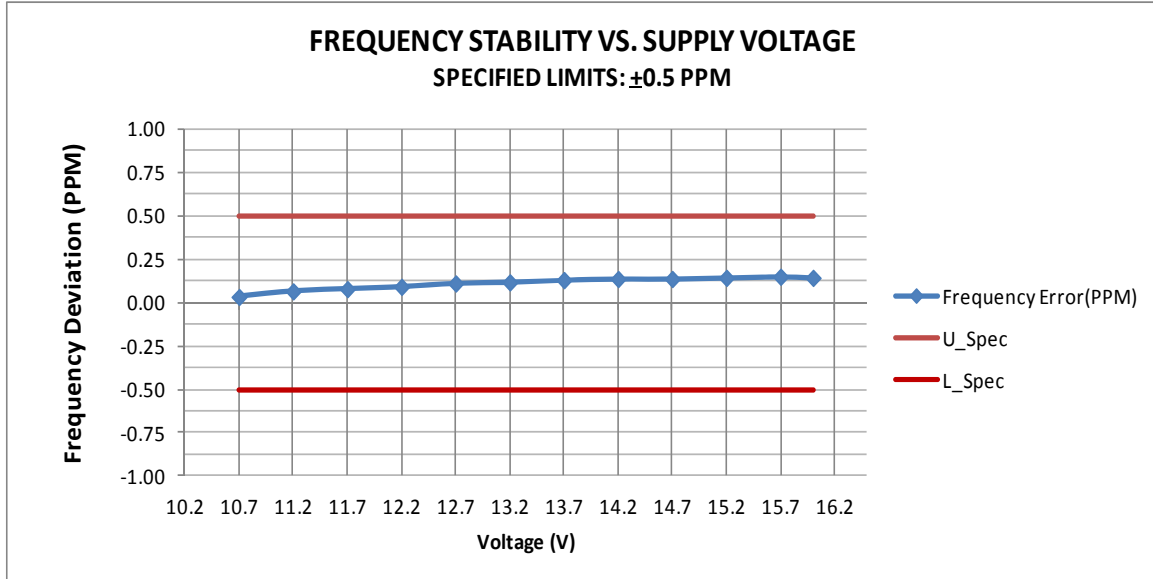
November 29, 2012

FCC Registration: 91932 / Industry Canada: IC109U-1

FREQUENCY STABILITY VS. TEMPERATURE
SPECIFIED LIMITS: ± 0.5 PPM (-30 TO +60 DEGREES C)



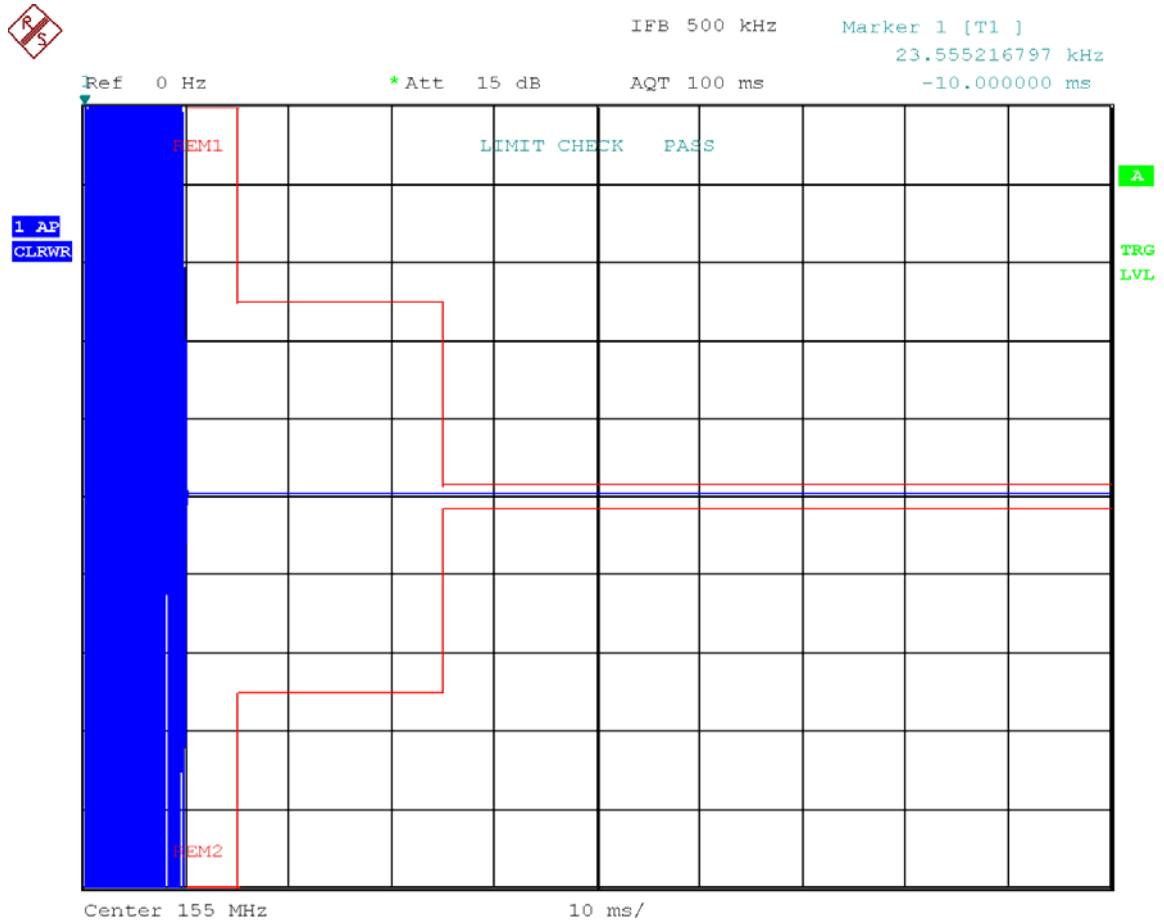
FREQUENCY STABILITY VS. SUPPLY VOLTAGE



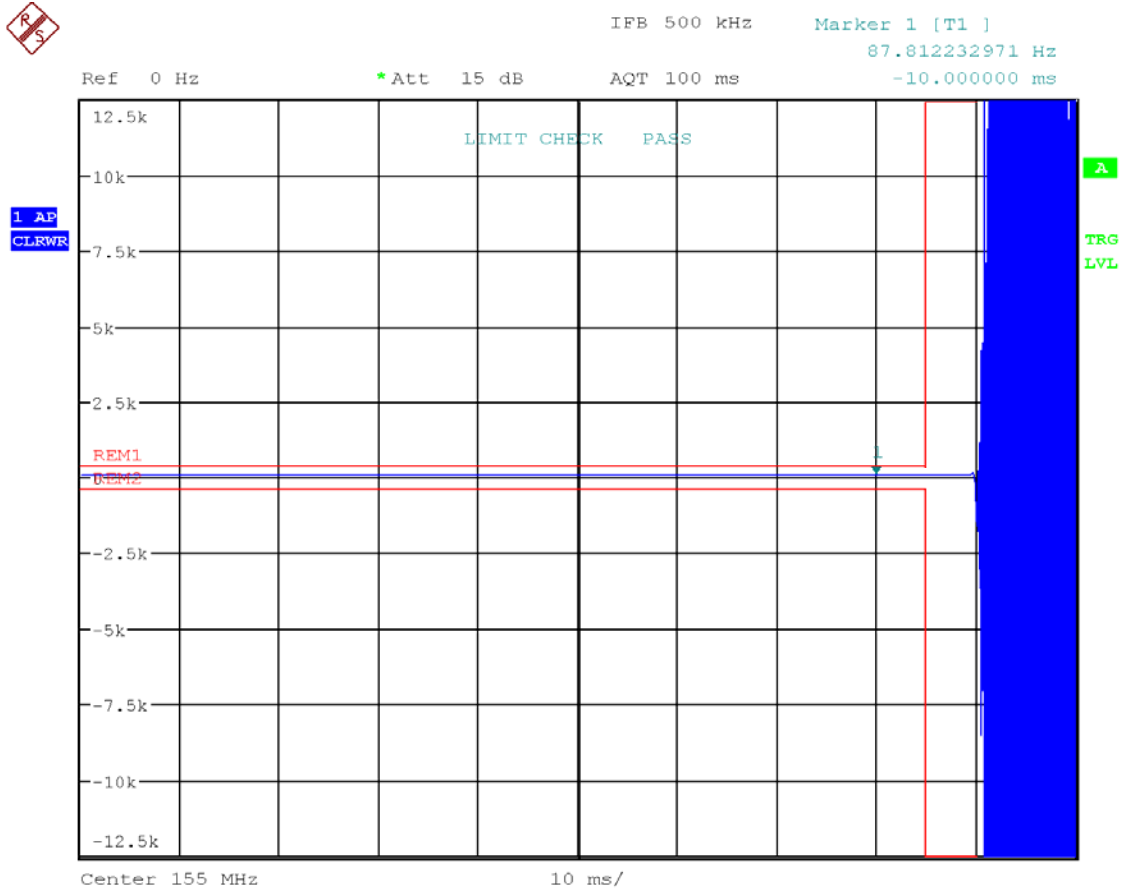
RADIO LOW-VOLTAGE RESET OCCURS AT 5.5 VOLTS DC.

TRANSIENT FREQUENCY BEHAVIOR

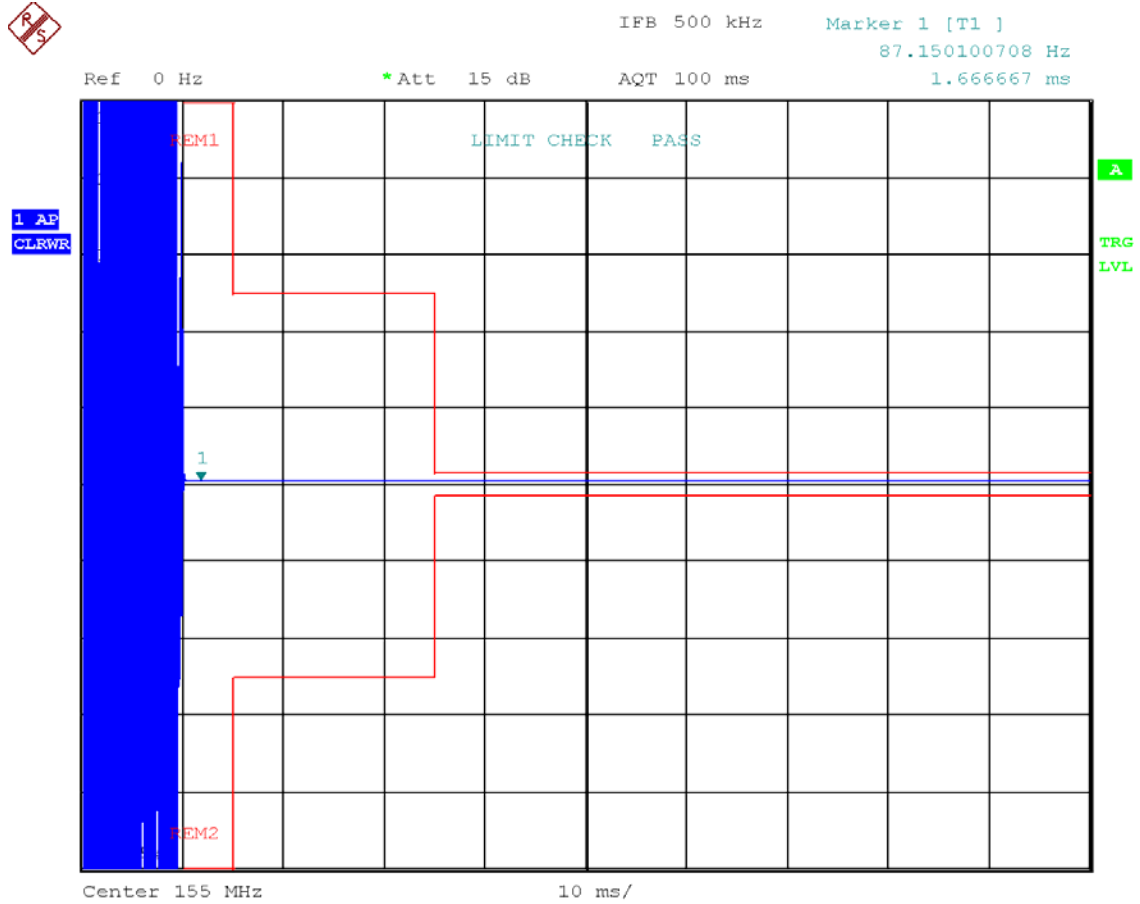
High Power (54W) Key-up Attack Time, 155 MHz, 12.5 kHz channel spacing



TRANSIENT FREQUENCY BEHAVIOR
High Power (54W) De-Key Decay Time, 155 MHz, 12.5 kHz channel spacing

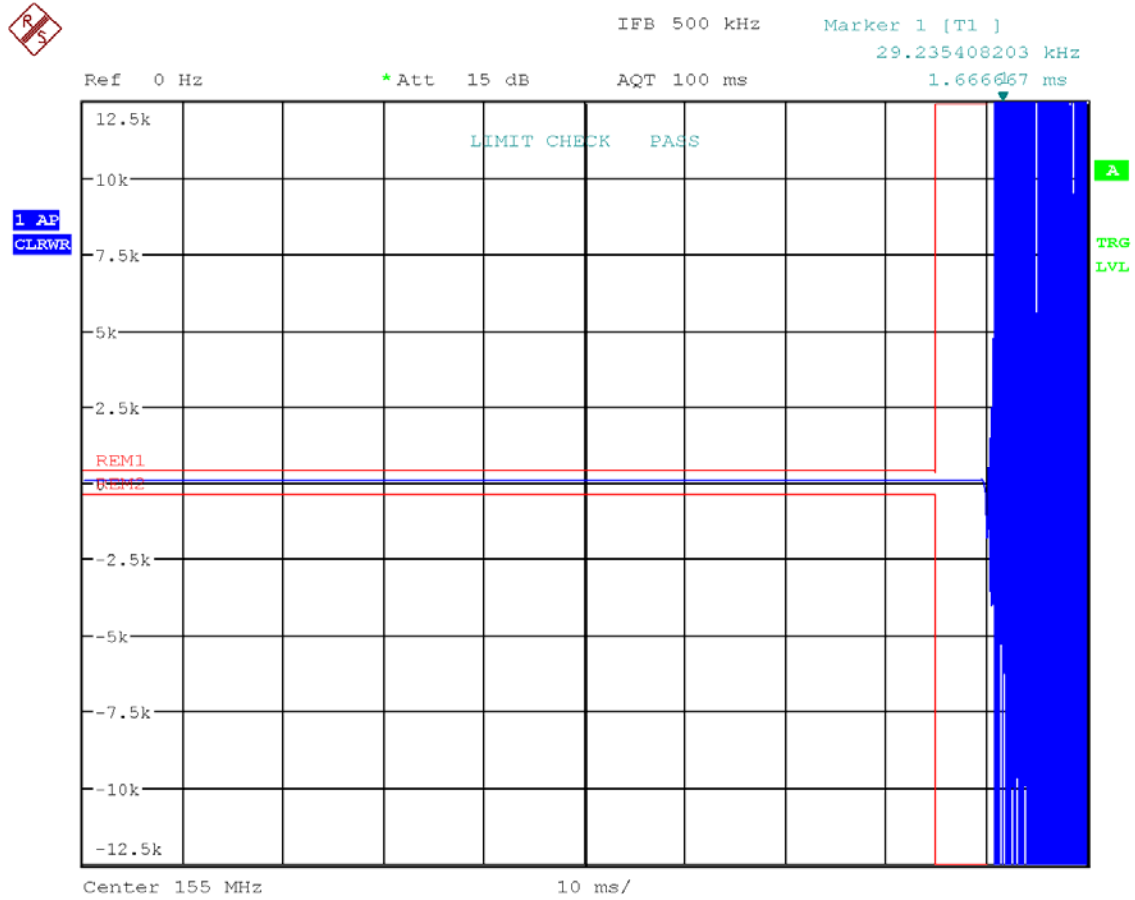


TRANSIENT FREQUENCY BEHAVIOR Low Power (25W) Key-up Attack Time, 155 MHz, 12.5 kHz channel spacing

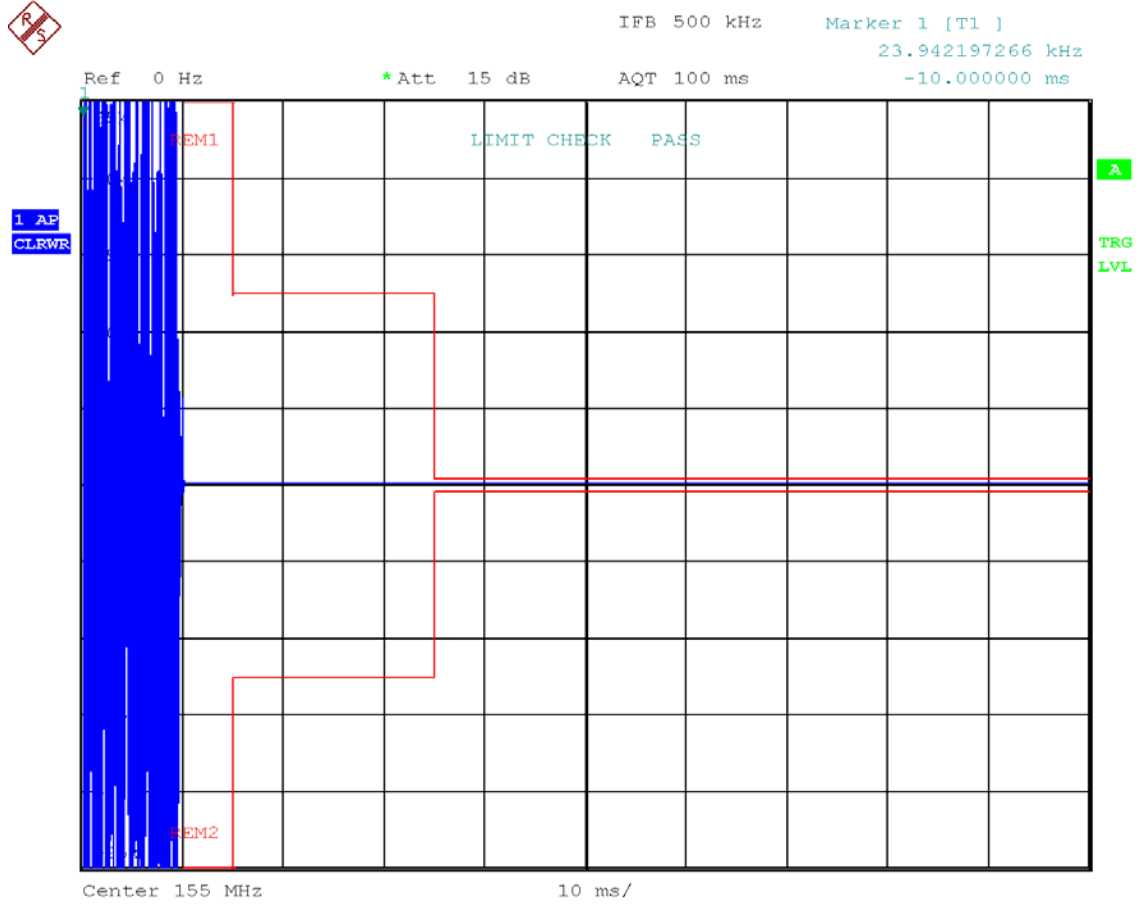


TRANSIENT FREQUENCY BEHAVIOR

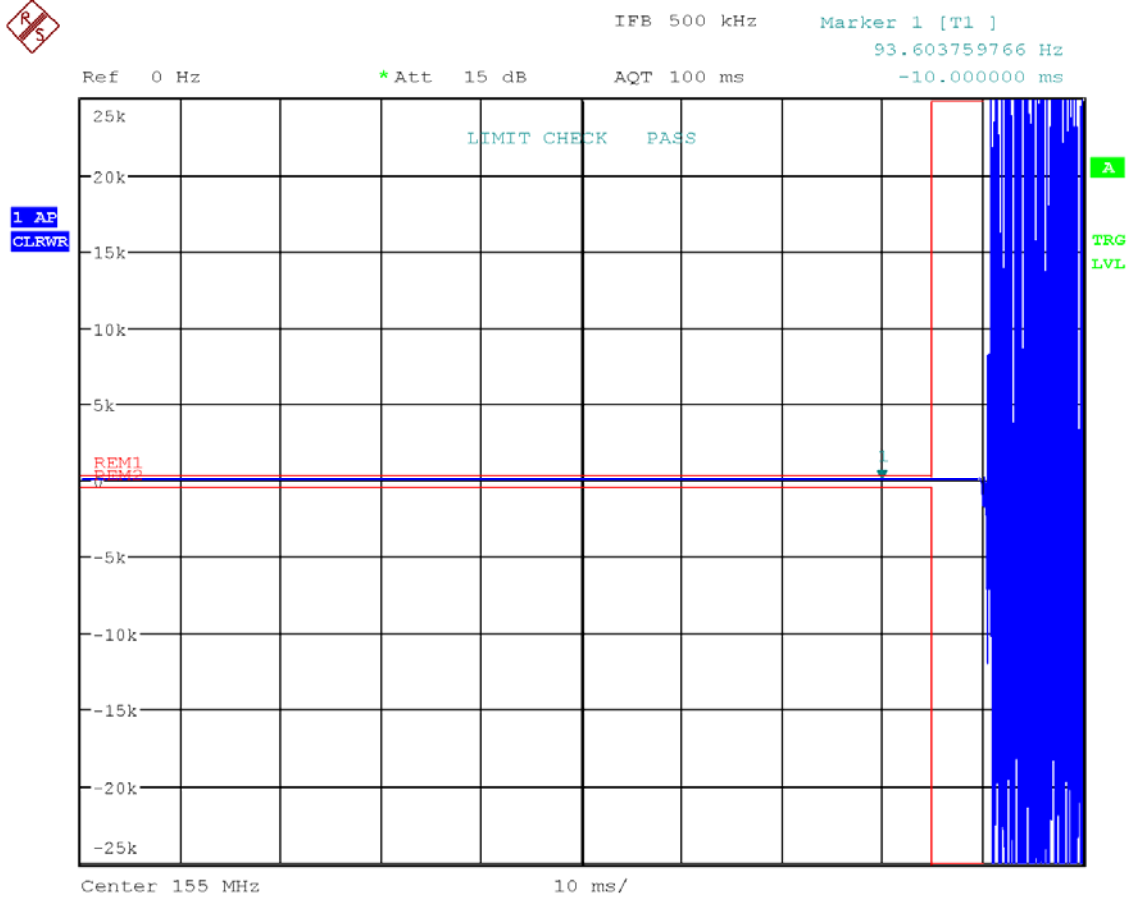
Low Power (25W) De-Key Decay Time, 155 MHz, 12.5 kHz channel spacing



TRANSIENT FREQUENCY BEHAVIOR
High Power (54W) Key-up Attack Time, 155 MHz, 25 kHz channel spacing
(Not for FCC Review)

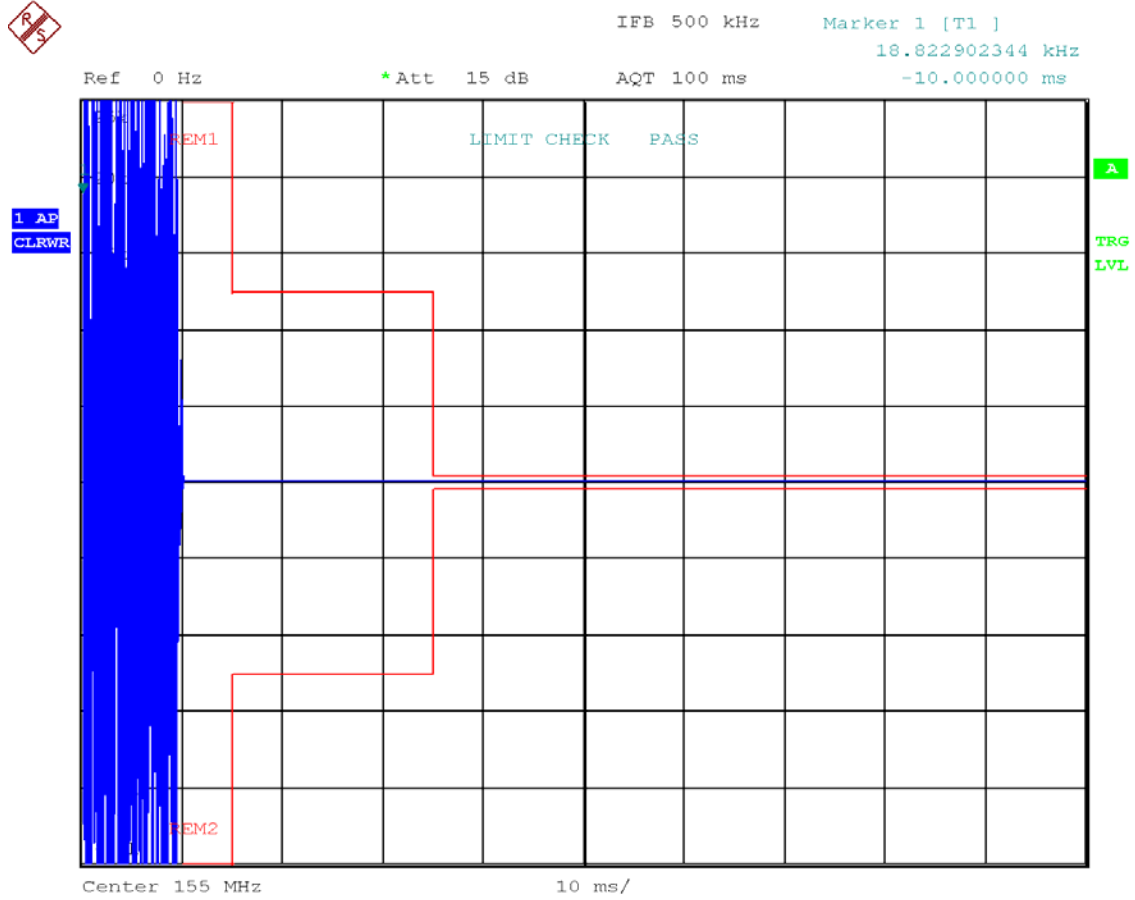


TRANSIENT FREQUENCY BEHAVIOR High Power (54W) De-Key Decay Time, 155 MHz, 25 kHz channel spacing



TRANSIENT FREQUENCY BEHAVIOR

Low Power (25W) Key-up Attack Time, 155 MHz, 25 kHz channel spacing



TRANSIENT FREQUENCY BEHAVIOR

Low Power (25W) De-Key Decay Time, 155 MHz, 25 kHz channel spacing

