TYPE OF EXHIBIT: LIST OF ATTACHED EXHIBITS

FCC PART: 2.1033(c)(14)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

The following exhibits are contained in this file:

Description of Exhibit	FCC Rule Part(s)	Page
List of Test Equipment Used	2.947(d)	2
Description of Measurement Facility	2.948	3
Radio Frequency Output Power	2.1046(a)	4
Modulator Response	2.1047(a)	6
Clipper Filter Response	2.1047(a)	9
Modulation Limiting Curves	2.1047(b)	11
Occupied Bandwidth	2.1049(c)(1), 90.210(d)	14
Conducted Spurious Emissions	2.1051, 90.210(d)	19
Field Strength of Spurious Emissions	2.1053(a), (b)	21
Frequency Stability vs Temperature	2.1055(a)(1), 90.213	25
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TYPE OF EXHIBIT: LIST OF TEST EQUIPMENT USED

FCC PART: 2.947(d)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

All measurements were conducted with one or more of the following pieces of equipment:

ITEM	MANUFACTURER	MODEL NO.	SERIAL NO.
DC Power Supply	Astron	VS 12M	90071655
Multimeter	Fluke	45	6967029
Multimeter	BK Precision	2704A	234-008455
Wattmeter	Telewave	612	15081
RF Test Set	Hewlett-Packard	8920A	01498
Spectrum Analyzer	Advantest	R3265A	75060189
Spectrum Analyzer	Hewlett-Packard	8560E	3720A02980
Storage Scope	Fluke/Philips	PM3335	DM630034
Temp. Chamber	Delta Design	3900 CL	0-52-R
Frequency Counter	Hewlett-Packard	5383A	1716A01417
Audio Test Set	Audio Precision	SYS-322A	SYS1-33641
Thermocouple	Triplett	320-G/P	

TYPE OF EXHIBIT: DESCRIPTION OF MEASUREMENT FACILITY

FCC PART: 2.948

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

The Field Strength measurements filed with this application were made on a site certified by RITRON, Inc. Data pertaining to this side are on file with the FCC and are current.

This site is used on a continuing basis exclusively by RITRON, Inc. and is utilized only for RF Field Strength measurements of equipment designed and manufactured by RITRON, Inc. It is not used for measurements by, or for, any other party on a contract basis or otherwise.

All other measurements were taken at RITRON's Engineering Laboratory in Carmel, IN.

Sam L. Dulaney
Chief Engineer
RITRON, Inc.

TYPE OF EXHIBIT: RADIO FREQUENCY OUTPUT POWER

FCC PART: 2.1046(a)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The DTX-254 was aligned for transmitter operation at full rated power per the tune-up procedure outlined in the Maintenance manual for frequencies at the lower, middle and upper band edges.

2. Power was supplied to the DTX-254 by an Astron VS 12M Power Supply. The DTX-254 was connected to a Bird 6154 Thermaline Wattmeter used to measure the RF carrier power. The wattmeter provides a resistive 50-ohm termination at the frequencies and power levels used for this test.

3. A B&K Digital Multimeter was connected in series with the drain lead of the final RF output transistor and set to measure current (Id). A Fluke 45 Digital Multimeter was used to measure the final RF output stage power control voltage (Vc) and drain voltage (Vd).

4. Measurements were taken at various power levels between 1.0 watts and 6.0 watts.

TYPE OF EXHIBIT: RADIO FREQUENCY OUTPUT POWER

FCC PART: 2.1046(a)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS:

Frequency (MHz)	Po (watts)	Vc (V)	Vd (V)	Id (A)
217.030	1.0	1.70	7.4	0.63
217.030	2.0	1.82	7.4	0.94
217.030	3.0	1.97	7.3	1.16
217.030	4.0	2.15	7.3	1.38
217.030	5.0	2.44	7.3	1.60
217.030	6.0	2.88	7.2	1.82
230.025	1.0	1.74	7.4	0.74
230.025	2.0	1.90	7.4	1.06
230.025	3.0	2.05	7.3	1.35
230.025	4.0	2.18	7.3	1.59
230.025	5.0	2.30	7.2	1.82
230.025	6.0	2.44	7.2	2.00
244.030	1.0	1.83	7.4	0.75
244.030	2.0	2.01	7.4	1.11
244.030	3.0	2.18	7.3	1.42
244.030	4.0	2.33	7.3	1.74
244.030	5.0	2.47	7.2	2.00
244.030	6.0	2.65	7.2	2.24

TYPE OF EXHIBIT: MODULATOR RESPONSE

FCC PART: 2.1047(a)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The Modulator Response was measured at two settings of the transmit audio chain. One is with pre-emphasis selected and the other with a flat response.

2. The DTX-254 was aligned for transmitter operation at 230.025 MHz at full rated power per the tune-up procedure outlined in the Maintenance manual.

3. The response was measured from the AUX_IN input to the output of the clipper filter at pin 8 of U310C.

4. The audio test set was swept in frequency from 100 Hz to 10 kHz and the results noted. The function generator level was increased by a factor of two to represent 25 kHz channel bandwidth operation with identical results. Therefore, only one such plot is presented. Measurements were made for with pre-emphasis selected via the programmer and for a flat response selected via the programmer.

5. The response through the microphone is identical to that of the AUX_IN input when pre-emphasis is selected.

TYPE OF EXHIBIT: MODULATOR RESPONSE

FCC PART: 2.1047(a)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

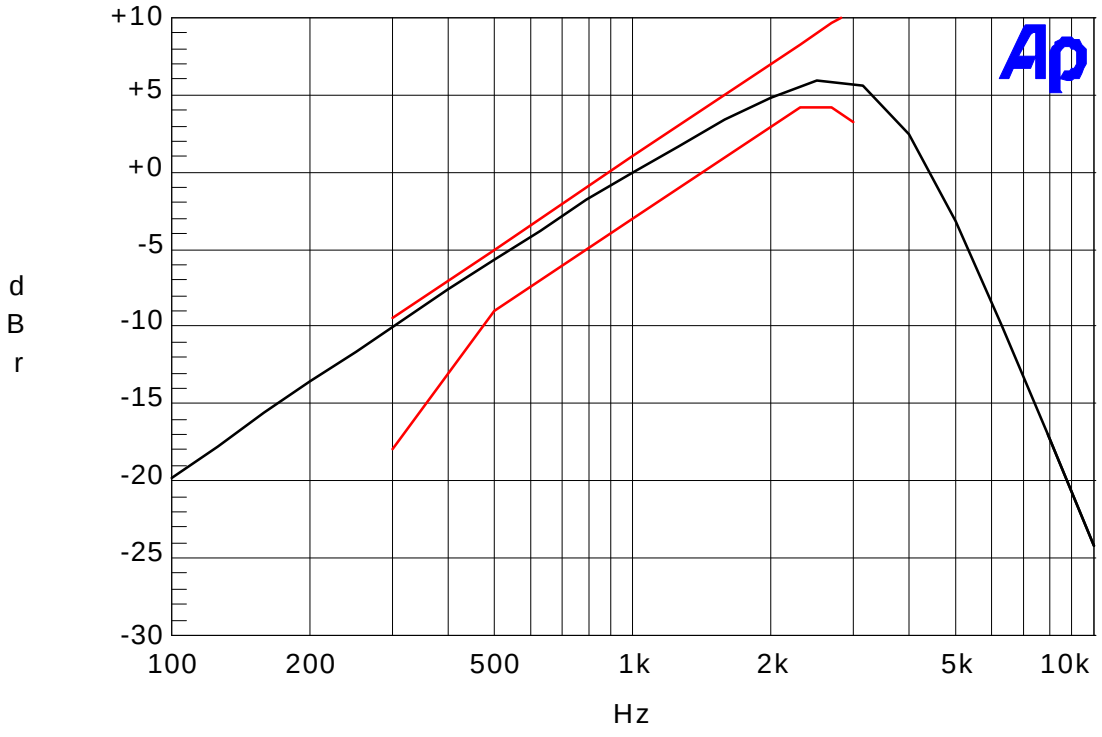
TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS:

TX Frequency Response-Pre



TYPE OF EXHIBIT: MODULATOR RESPONSE

FCC PART: 2.1047(a)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

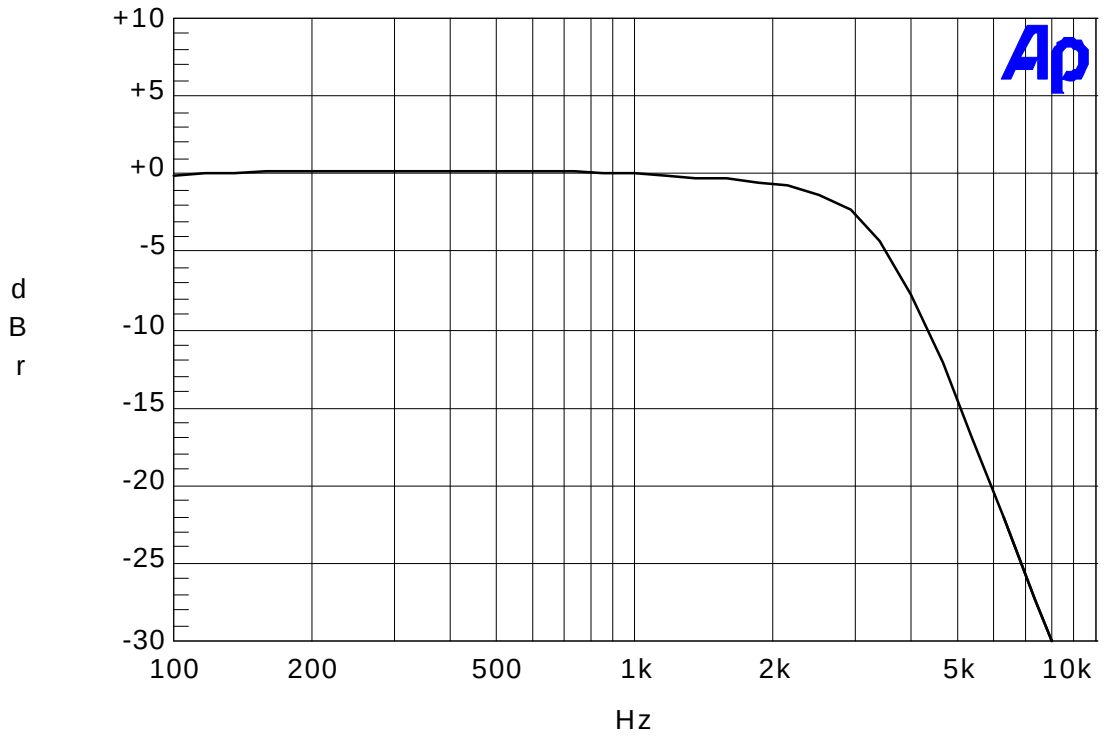
TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS:

TX Frequency Response-Flat



TYPE OF EXHIBIT: CLIPPER FILTER RESPONSE

FCC PART: 2.1047(a)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The transmitter pre-emphasis capacitor, C339, was removed and replaced with a 100 uF electrolytic capacitor with the positive end connected to the input of the clipper and the negative end connected to the output of the audio Test Set. This allows a direct input to the clipper. The generator level was set to a value below that which would cause clipping in the clipper.

2. The output of the last modulation clipper filter, U305-C, pin 8 was connected to the audio input of the audio test set. The level of the signal out of the clipper filter with a 1 kHz input signal was noted and set as a 0 dB reference. The audio generator frequency was swept from 100 Hz to 100 kHz and the response noted and plotted.

TYPE OF EXHIBIT: CLIPPER FILTER RESPONSE

FCC PART: 2.1047(a)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

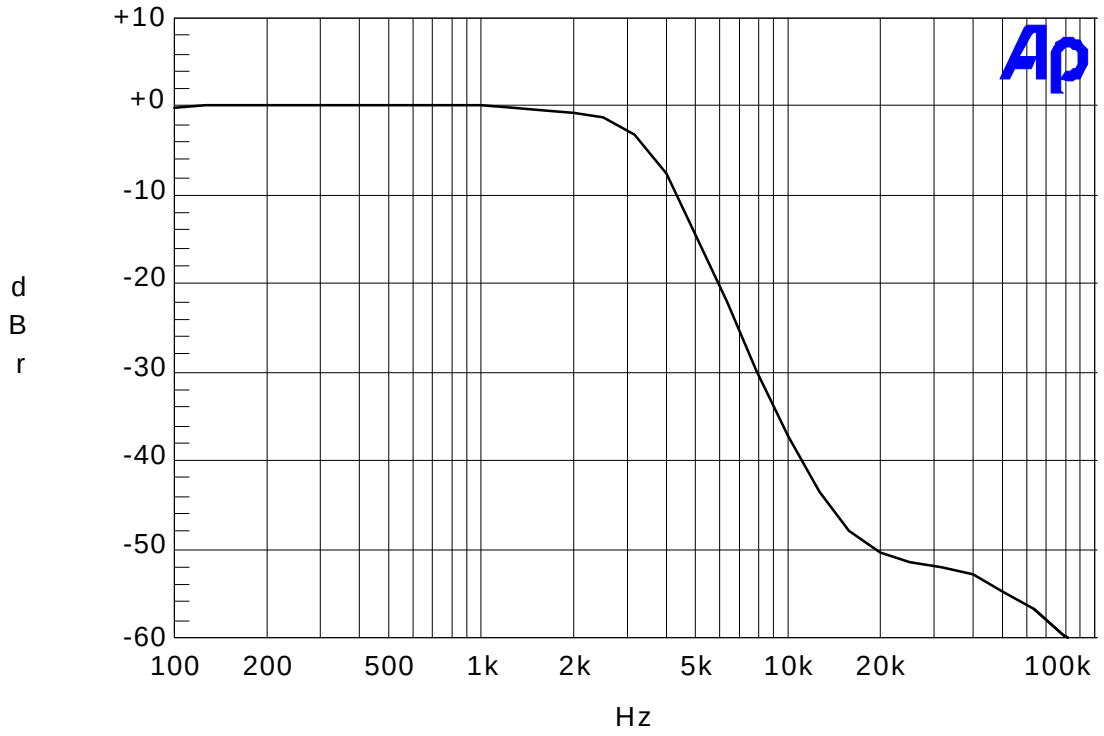
TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS:

TX Clipper Filter Response



TYPE OF EXHIBIT: MODULATION LIMITING CURVES

FCC PART: 2.1047(b)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The DTX-254 was aligned for transmitter operation on 230.025 MHz per the tune-up procedure outlined in the Maintenance manual.

2. The RF output was connected to the RF input of an HP 8920 Test Set configured to measure FM deviation. The audio output of the audio test set was routed to the microphone input of the DTX-254. The audio output level was set at a level high enough to drive the DTX-254 transmit modulation limiter stage into limiting at any modulation frequency.

3. The frequency of the audio generator was adjusted to find the frequency of maximum response. The DTX-254 transmit deviation was adjusted for 2.40 kHz maximum deviation as outlined in the Maintenance manual. The audio generator level was reduced to produce 50% of maximum deviation and the level noted.

4. The audio frequency was set to 300 Hz and the output level was varied from zero to a level at least 16 dB above that required to produce 50% maximum deviation noted in step 3 above.

5. Step 4 was repeated for audio frequencies of 1000 and 3000 Hz.

TYPE OF EXHIBIT: MODULATION LIMITING CURVES

FCC PART: 2.1047(b)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

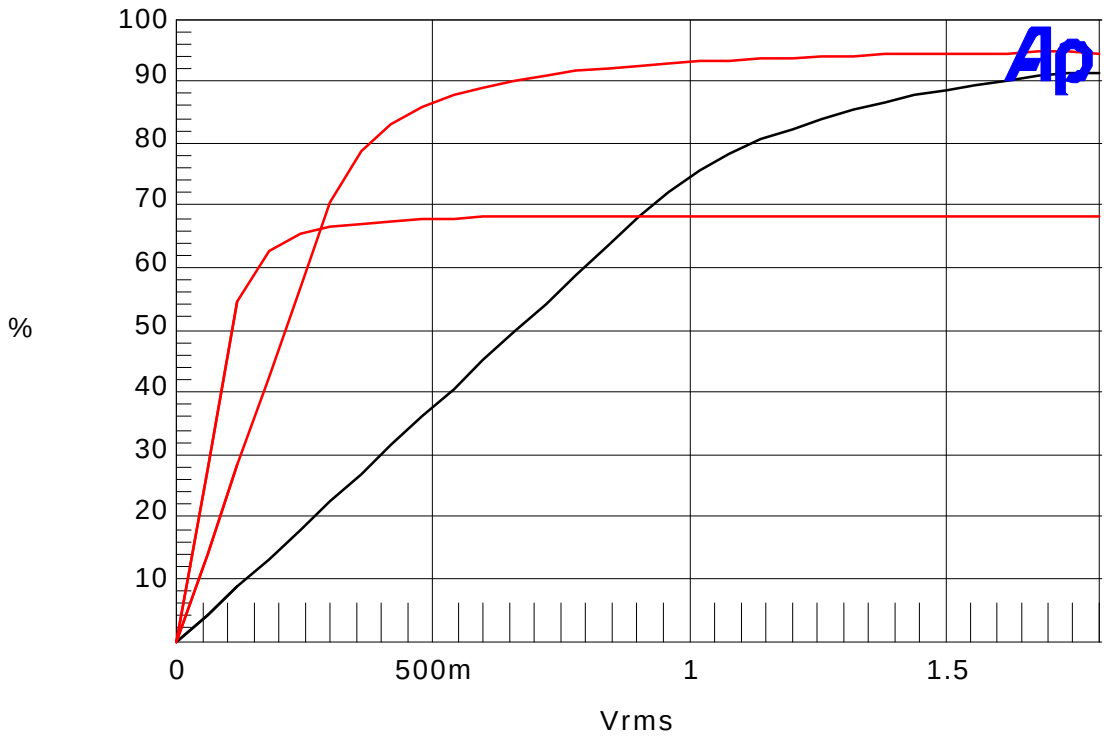
TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS: From top at right side: 300 Hz, 1 kHz, 3 kHz

Modulation Limiting-Pre



TYPE OF EXHIBIT: MODULATION LIMITING CURVES

FCC PART: 2.1047(b)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

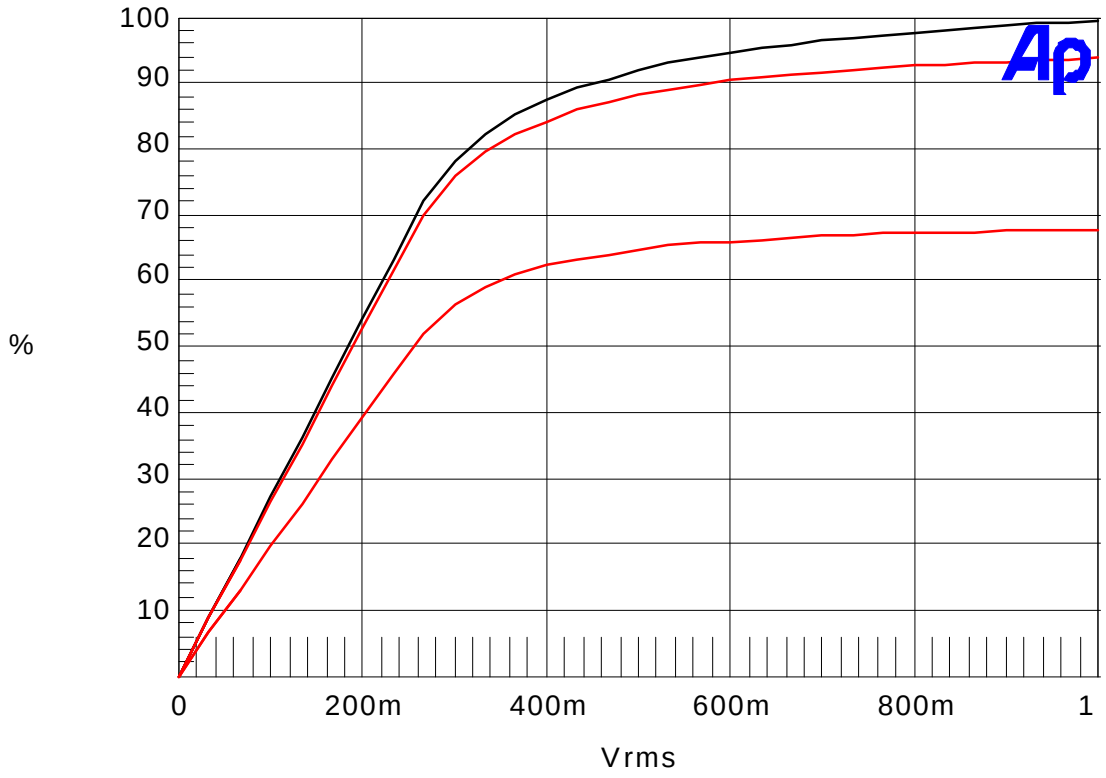
TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS: From top at right side: 300 Hz, 1 kHz, 3 kHz

Modulation Limiting-Flat



TYPE OF EXHIBIT: OCCUPIED BANDWIDTH

FCC PART: 2.1049(c)(1), 90.210(d)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The DTX-254 was aligned for transmitter operation on 230.025 MHz at 6 watts per the tune-up procedure outlined in the Maintenance manual. The transmitter was modulated with a 2500 Hz tone at a level 16 dB greater than that required to produce 50% maximum deviation of +/- 2.4 kHz.

2. The RF output was connected to an HP 8560E spectrum analyzer through a 10 dB, 10-watt, 50 ohm RF attenuator. The center frequency of the spectrum analyzer was set to the transmitter frequency. The sweep span was set for 100 kHz and the resolution and video bandwidth set for 100 kHz. The detector was set for peak hold mode.

3. The DTX-254 transmitter was keyed and the reference level for the spectrum analyzer set to the maximum level of the RF input signal. The resolution bandwidth and video bandwidth were set to 100 Hz and the results plotted along with emission mask D. The frequency span was increased to 100 kHz and the spectrum was examined beyond that visible at the 50 kHz span. The audio input signal was changed to a 2400 Hz squarewave to simulate a 4800 baud signal and the results plotted. The input audio input was then replaced with a 4-level pseudorandom bitstream at 9600 bps and the results plotted.

4. Emissions mask D is the appropriate mask for an occupied bandwidth of 11.25 kHz. For the frequency range covered by this product, this can be achieved by using one 11.25/12.5 kHz occupied bandwidth channel, combining two 6.25 kHz occupied bandwidth channels or three 4 kHz occupied bandwidth channels. In all cases, the composite occupied bandwidth shown is less than or equal to the total of the aggregate channel bandwidths.

TYPE OF EXHIBIT: OCCUPIED BANDWIDTH

FCC PART: 2.1049(c)(1), 90.210(d)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

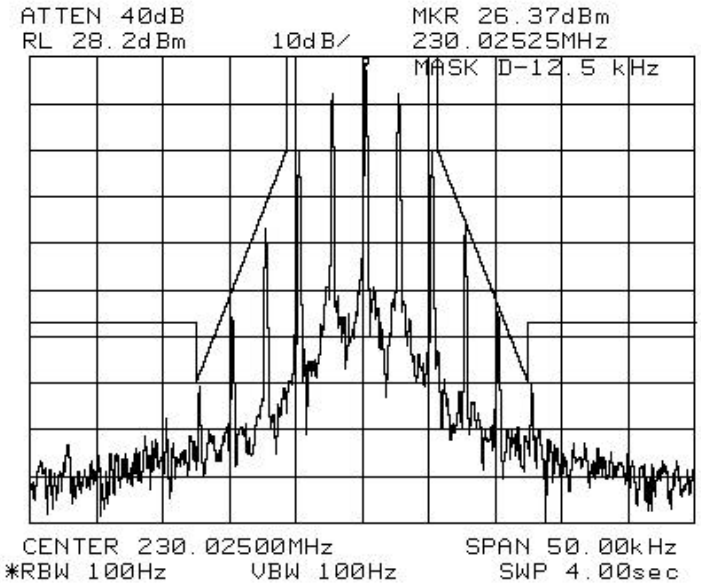
MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS: Sinewave input



Note: There were no spurs visible between +/- 25 kHz and +/- 50 kHz of the center frequency.

TYPE OF EXHIBIT: OCCUPIED BANDWIDTH

FCC PART: 2.1049(c)(1), 90.210(d)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

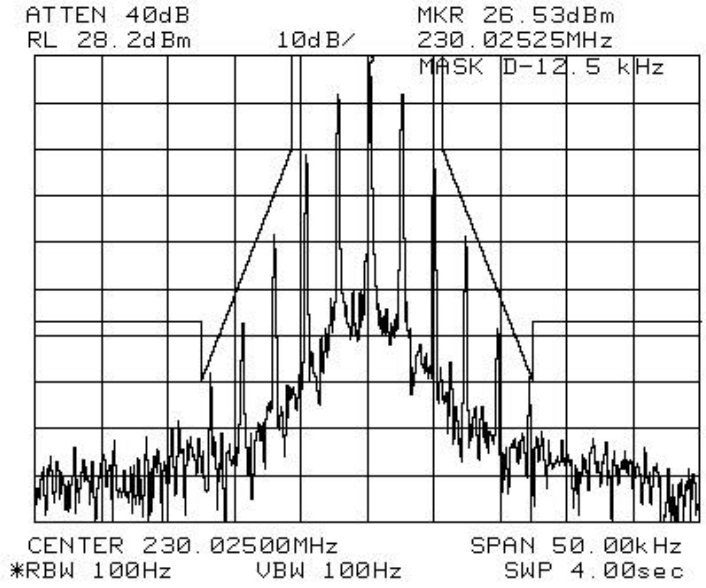
MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS: Alternating 1-0 input pattern at 4800 baud



Note: There were no spurs visible between +/- 25 kHz and +/- 50 kHz of the center frequency.

TYPE OF EXHIBIT: OCCUPIED BANDWIDTH

FCC PART: 2.1049(c)(1), 90.210(d)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

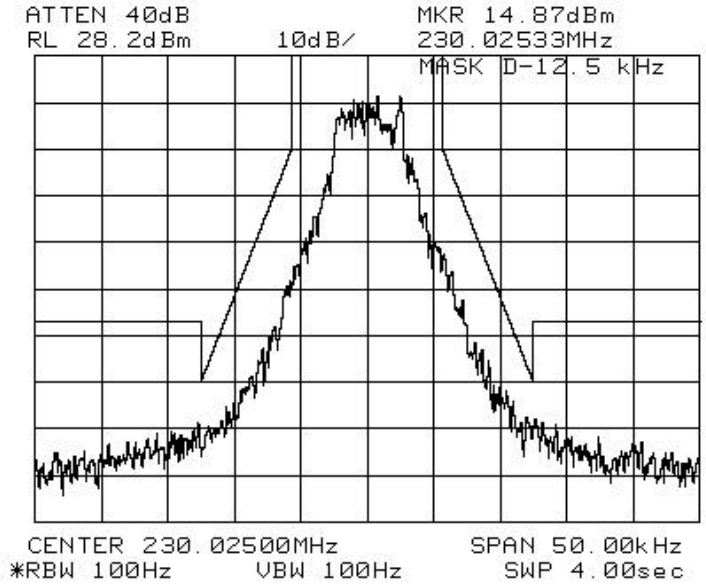
MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS: pn sequence at 9600 baud



Note: There were no spurs visible between +/- 25 kHz and +/- 50 kHz of the center frequency.

TYPE OF EXHIBIT: OCCUPIED BANDWIDTH-BANDWIDTH CALCULATION

FCC PART: 2.1049(c)(1), 90.210(d)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS:

By Carson's rule, occupied bandwidth for an FM signal may be calculated by:

$BW = 2(f_\Delta + f_m)$ where f_Δ is the frequency deviation and f_m is the modulating frequency.

For this product, f_Δ is 2.4 kHz and f_m is 3.1 kHz (3 dB from clipper filter response), therefore

BW = 11.0 kHz

The emission designator for 12.5 kHz channel voice operation is: 11K0F3E. Since this product is not a modem and does not support an internal subcarrier, the emission designator for 12.5 kHz channel data operation is: 11K0F1D.

The occupied bandwidth is less than that necessary for one 12.5 kHz channel, two 6.25 kHz channels, or three 4 kHz channels.

TYPE OF EXHIBIT: SPURIOUS EMISSIONS AT ANTENNA TERMINAL

FCC PART: 2.1051, 90.210(d)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The DTX-254 was aligned for transmitter operation at the band edges and the band center at 6 watts per the tune-up procedure outlined in the Maintenance manual. The transmitter was modulated with a 2500 Hz tone at a level 16 dB greater than that required to produce 50% maximum deviation at the modulation frequency of maximum deviation. The maximum deviation was set for +/- 2.4 kHz.

2. The RF output was connected to an HP 8560E spectrum analyzer through a 10 dB, 10 watt, 50 ohm RF attenuator. The center frequency of the spectrum analyzer was set to the transmitter frequency. The frequency span and resolution and video bandwidths were set to 100 kHz. The transmitter was keyed and the reference level on the analyzer noted.

3. An RF highpass filter was inserted into the path from the attenuator to the spectrum analyzer. The transmitter was keyed and the output spectrum was examined from 9 kHz to 10 times the operating frequency, except within 100 kHz of the operating frequency. The attenuation of the highpass filter at the transmitter spurious frequencies was measured and factored into the attenuator calculations.

TYPE OF EXHIBIT: SPURIOUS EMISSIONS AT ANTENNA TERMINAL

FCC PART: 2.1051, 90.210(d)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS:

Corrected Spur level(dBm) = Spur level @ analyzer(dBm) + Attenuator loss(dB)

Frequency (MHz)	Spur Frequency (MHz)	Spur level (dBm)	Atten. loss (dB)	Corr. Spur (dBm)	Limit (dBm)
217.030	1302.1800	-48.6	10.4	-38.2	-20
230.025	201.3000	-36.5	10.0	-26.5	-20
230.025	259.0000	-38.1	10.0	-28.1	-20
230.025	1150.0125	-48.2	10.5	-37.7	-20
244.030	215.3000	-37.0	10.0	-27.0	-20
244.030	272.7000	-39.8	10.0	-29.8	-20
244.030	488.0600	-41.1	10.2	-30.9	-20
244.030	732.0900	-44.6	10.3	-34.3	-20

Emissions more than 20 below limit are not reported.

TYPE OF EXHIBIT: FIELD STRENGTH OF SPURIOUS EMISSIONS

FCC PART: 2.1053(a), (b)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The measurements for field strength of spurious emissions were taken at the RITRON, Inc. 3-meter test site, details of which are on file with the FCC.

2. The DTX-254 was aligned for transmitter operation on lower, center, and upper band edges at the 6.0 watt maximum output power rating for the unit per the tune-up procedure outlined in the Maintenance Manual. The unit was then terminated at the antenna port with the only antenna offered for sale with this product. (The user may connect other antennas, however.)

3. All field strength measurements were made with the Hewlett-Packard Model 8560E and 8559A Spectrum Analyzers and either a log periodic antenna or dipoles, depending upon frequency.

4. The transmitter was keyed and the spectrum searched from 9 kHz to the 10th harmonic of the transmit carrier. When a spurious emission was found, the height and polarization of the field strength measurement antenna and orientation of the DTX-254 were varied to provide maximum field strength.

5. A substitution antenna, a calibrated dipole, was substituted for the DTX-254 at the DTX-254's location. An RF signal generator was set for the frequency of the DTX-254 with the level at the substitution antenna noted.

6. The polarization of the substitution antenna was adjusted for maximum signal strength at the field strength measuring antenna. The level at the field strength antenna was noted.

TYPE OF EXHIBIT: FIELD STRENGTH OF SPURIOUS EMISSIONS

FCC PART: 2.1053(a), (b)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

EQUATIONS:

The spurious emission level is:

Spur(dBm) = Pspur(dBm) + Pgen(dBm) – Pref(dBm)

Where:

Pspur is the power level of the radio's emission at the receiving antenna output.

Pgen is the RF signal generator level at the substitution antenna input.

Pref is the power level of the substitution antenna emission at the receiving antenna output.

TYPE OF EXHIBIT: FIELD STRENGTH OF SPURIOUS EMISSIONS

FCC PART: 2.1053(a), (b)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS: Horizontal Polarization

Freq. (MHz)	Spur Freq. (MHz)	Pspur (dBm)	Pgen (dBm)	Pref (dBm)	Spur Level (dBm)	Limit (dBm)
217.030	434.060	-76.2	-0.3	-27.8	-48.7	-20.0
217.030	651.090	-62.5	-0.5	-37.0	-26.0	-20.0
217.030	1085.150	-78.2	-0.7	-39.3	-39.6	-20.0
217.030	1302.180	-79.5	-0.9	-40.5	-39.9	-20.0
217.030	1519.210	-82.6	-1.1	-41.0	-42.7	-20.0
230.025	690.075	-60.7	-0.5	-37.4	-23.8	-20.0
230.025	920.100	-71.2	-0.7	-38.9	-33.0	-20.0
244.030	488.060	-66.8	-0.4	-28.8	-38.4	-20.0
244.030	732.090	-59.8	-0.5	-37.5	-22.8	-20.0
244.030	976.120	-71.5	-0.8	-39.3	-33.0	-20.0

Note: Unreported emissions are more than 20 dB below the FCC limit.

TYPE OF EXHIBIT: FIELD STRENGTH OF SPURIOUS EMISSIONS

FCC PART: 2.1053(a), (b)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS: Vertical Polarization

Freq. (MHz)	Spur Freq. (MHz)	Pspur (dBm)	Pgen (dBm)	Pref (dBm)	Spur Level (dBm)	Limit (dBm)
217.030	651.090	-65.3	-0.5	-34.0	-31.8	-20.0
217.030	868.120	-75.3	-0.6	-40.2	-35.7	-20.0
217.030	1085.150	-77.0	-0.7	-42.0	-35.7	-20.0
217.030	1519.210	-82.8	-1.1	-44.2	-39.7	-20.0

Note: Unreported emissions are more than 20 dB below the FCC limit.

TYPE OF EXHIBIT: FREQUENCY STABILITY VS TEMPERATURE

FCC PART: 2.1055(a)(1), 90.213

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The DTX-254 was aligned for transmitter operation at 230.025 MHz at full rated power per the tune-up procedure outlined in the Maintenance manual.

2. The DTX-254 was placed in a Delta Design Model 3900 CL Temperature Chamber. The RF output of the DTX-254 was connected through a 30 dB power attenuator to an HP 8353A Frequency Counter to monitor the transmitter frequency. An Astron VS 12M Power Supply was adjusted for a nominal voltage of 12.5 VDC and connected to the DC power supply input of the DTX-254. A Triplett Model 320-G/P Thermocouple was used to monitor the temperature inside the chamber.

3. The chamber and the DTX-254 were heated to +50 degrees C and allowed to stabilize for 30 minutes for the first measurement and 30 minutes for each 10 degree decrement in temperature until the unit reached a temperature of –30 degrees C.

4. The RF frequency at each temperature was recorded and compared with the frequency at 25 degrees C, the tune-up temperature in the Maintenance manual.

TYPE OF EXHIBIT: FREQUENCY STABILITY VS TEMPERATURE

FCC PART: 2.1055(a)(1), 90.213

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

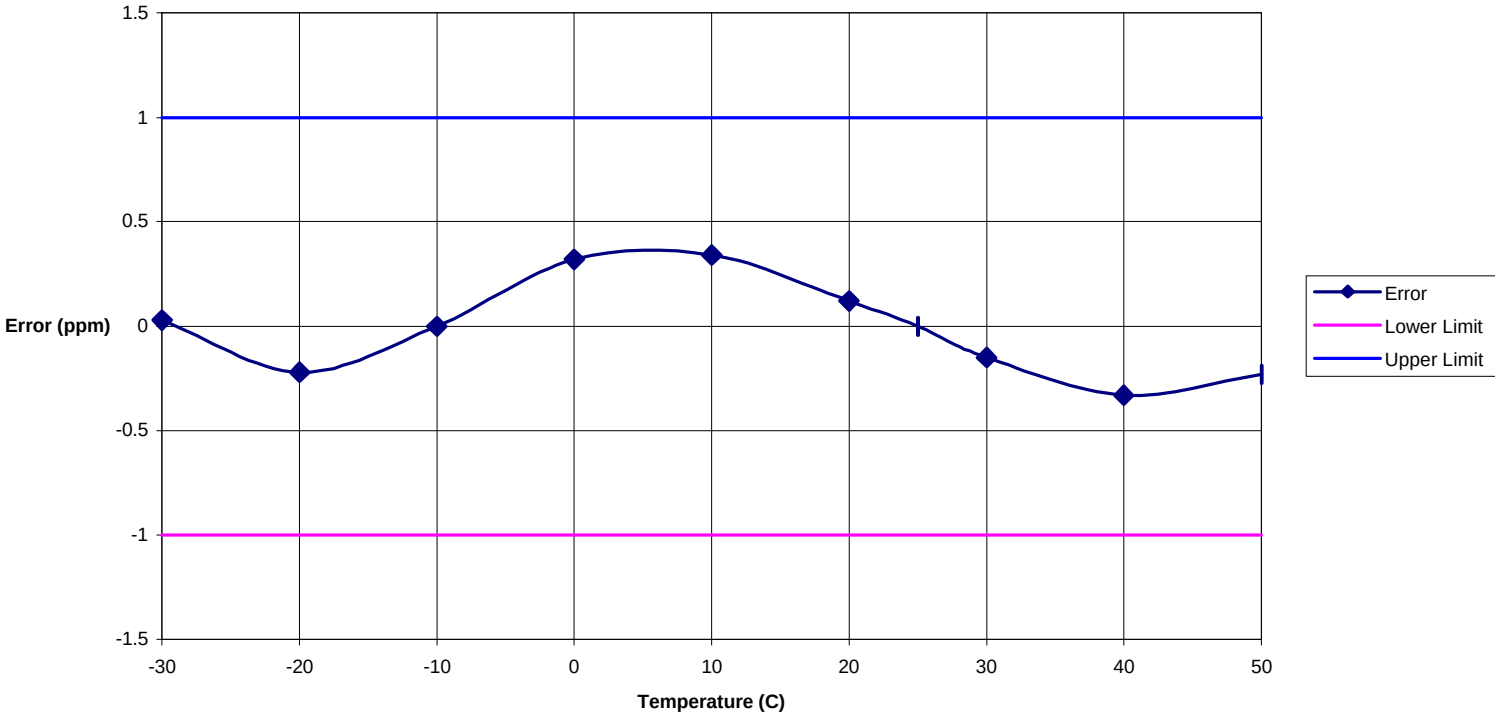
TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS:

Frequency Error vs Temperature



TYPE OF EXHIBIT: FREQUENCY STABILITY VS SUPPLY VOLTAGE

FCC PART: 2.1055(d)(1)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The DTX-254 was aligned for transmitter operation at 230.025 MHz at full rated power per the tune-up procedure outlined in the Maintenance manual.

2. The RF output of the DTX-254 was connected through a 30 dB power attenuator to an HP 8353A Frequency Counter to monitor the transmitter frequency. An Astron VS 12M Power Supply was adjusted for a nominal voltage of 12.5 VDC and connected to the DC power supply input of the DTX-254. The output frequency of the DTX-254 was noted and used as the reference for the results in paragraph 3 below.

3. The voltage out of the DC power supply was adjusted to between 85% and 115% of nominal (12.5 VDC) and the output frequency noted.

TYPE OF EXHIBIT: FREQUENCY STABILITY VS SUPPLY VOLTAGE

FCC PART: 2.1055(d)(1)

MANUFACTURER: RITRON, Inc.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

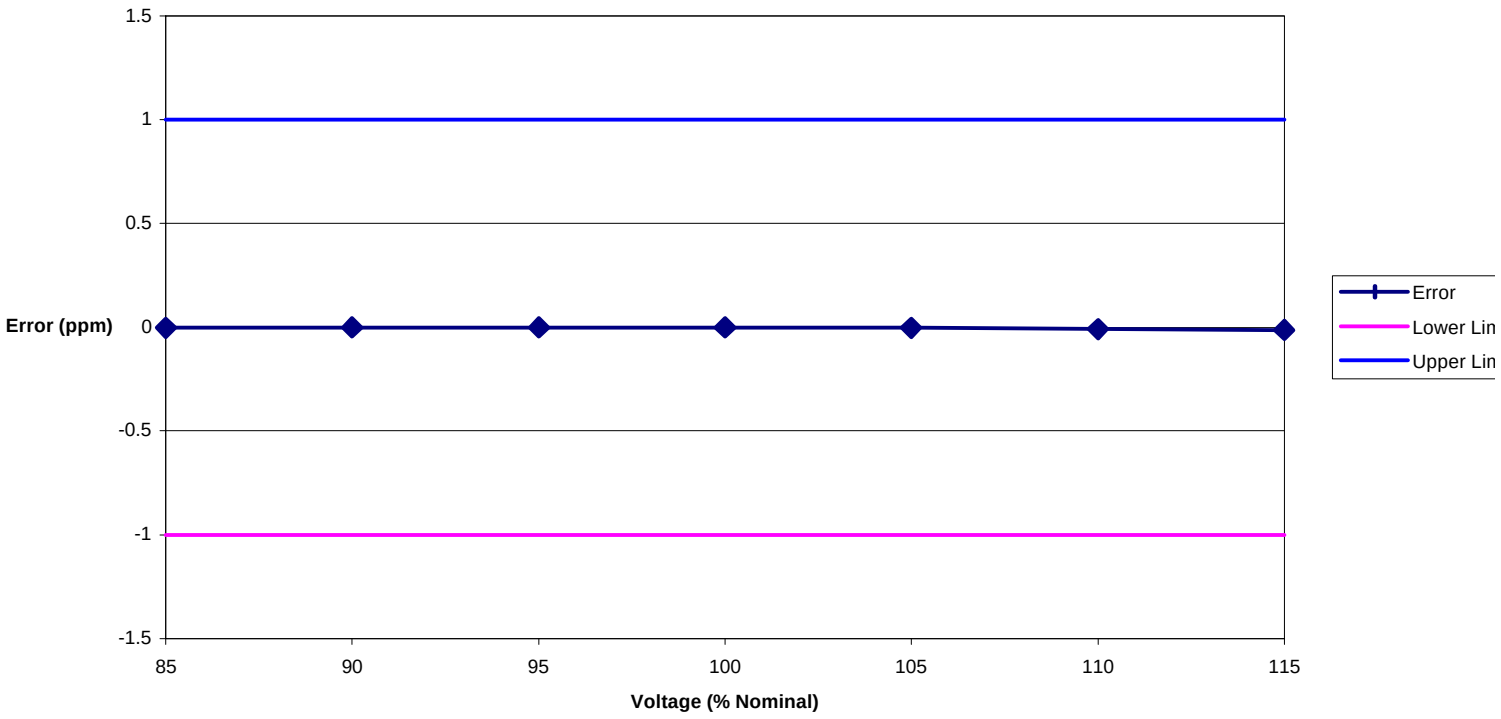
TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS:

Frequency Error vs Supply Voltege



TYPE OF TEST: TRANSIENT FREQUENCY BEHAVIOR

FCC PART: 90.214

MANUFACTURER: RITRON, INC.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

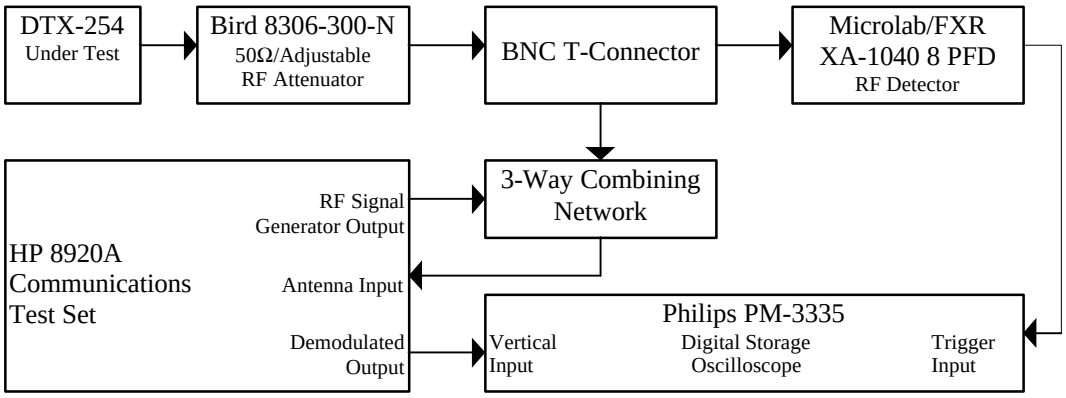
FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE:

1. The DTX-254 was aligned for transmitter operation on 230.025 MHz at full rated power per the tune-up procedure outlined in the Maintenance Manual. The following steps are per TIA./EIA-603.

2. The test equipment was connected per the following diagram:



3. The HP 8920A Receiver was set to measure FM deviation with the audio bandwidth set at DC to greater than 15 kHz with the RF frequency set to 230.025 MHz. The attenuator was set for 40 dB.

4. The DTX-254 transmitter under test was activated and the HP 8920A Spectrum Analyzer was used to measure the RF power level through the test network.

TYPE OF TEST: TRANSIENT FREQUENCY BEHAVIOR

FCC PART: 90.214

MANUFACTURER: RITRON, INC.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE (continued):

5. The DTX-254 transmitter was turned off. The HP 8920A RF Signal Generator was set to 230.025 MHz at an RF level at the HP 8920A which was 30 dB below that measured in step 3 and modulated with a 1 kHz tone at +/-12.5 kHz deviation.

6. The Philips PM-3335 Digital Oscilloscope Horizontal Sweep Rate was set to 10 msec/div. The Vertical Amplitude Control was adjusted to display the 1000 Hz demodulated audio from the Signal Generator at +/-4 divisions, vertically centered on the screen.

7. The Philips PM-3335 Digital Oscilloscope was set to trigger at 1 division from the left side of the display when the RF Detector sensed RF power from the DTX-254 transmitter.

8. The DTX-254 transmitter was activated and the resulting waveform on the oscilloscope display was stored and plotted. The FCC limits per Part 90.214 were added to the plot. The resulting plot is labeled “Switch On Condition” and shows compliance with FCC Part 90.214.

9. The Philips PM-3335 Digital Oscilloscope was set to trigger at 1 division from the right side of the display when the RF Detector senses loss of RF power from the DTX-254 transmitter.

TYPE OF TEST: TRANSIENT FREQUENCY BEHAVIOR

FCC PART: 90.214

MANUFACTURER: RITRON, INC.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

PROCEDURE (continued):

10. The DTX-254 transmitter was turned off and the resulting waveform on the oscilloscope display was stored and plotted. The FCC limits per Part 90.214 were added to the plot in the same manner illustrated in EIA-603 Part 3.2.19.2. The resulting plot is labeled “Switch Off Condition” and shows compliance with FCC Part 90.214.

11. The FCC does not specify limits for the 220 MHz band so the more stringent VHF limits were used.

TYPE OF TEST: TRANSIENT FREQUENCY BEHAVIOR

FCC PART: 90.214

MANUFACTURER: RITRON, INC.
505 West Carmel Drive
Carmel, IN 46032

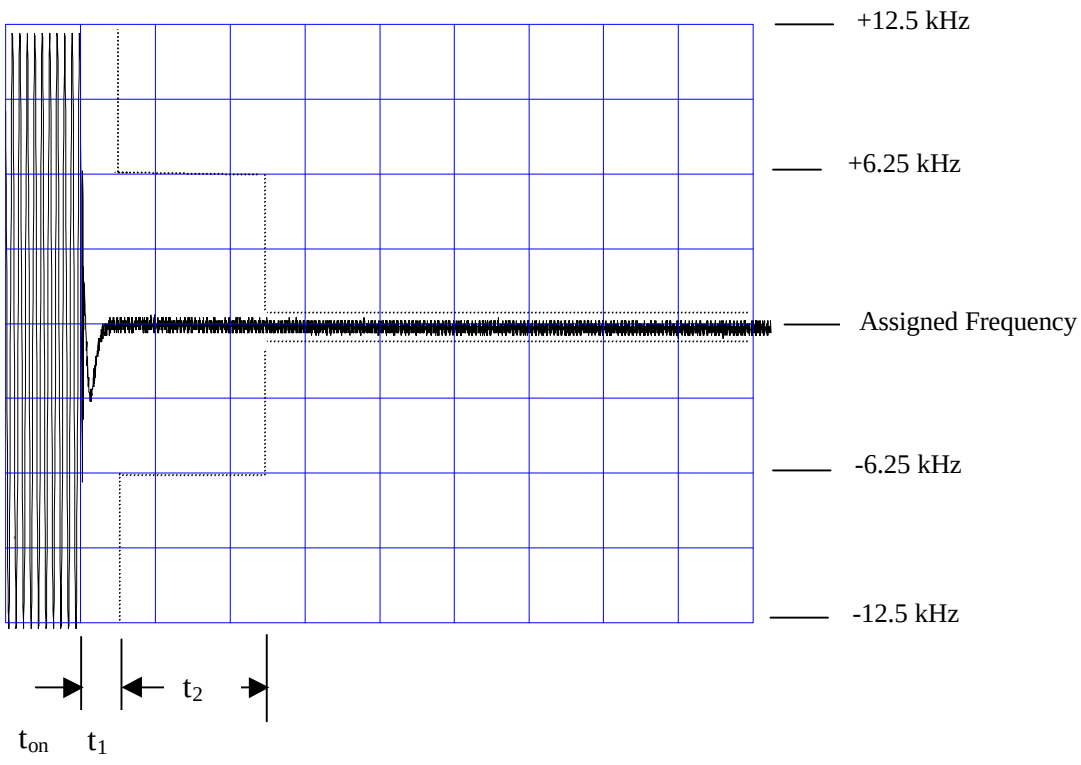
MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS: Switch-On Condition



TYPE OF TEST: TRANSIENT FREQUENCY BEHAVIOR

FCC PART: 90.214

MANUFACTURER: RITRON, INC.
505 West Carmel Drive
Carmel, IN 46032

MODEL: DTX-254

TYPE OF UNIT: 220 MHz Transceiver Module

FCC ID: AIERIT20-250

DATE: December 23, 2004

RESULTS: Switch-Off Condition