TYPE OF EXHIBIT:	MEASUREMENT METHODS
FCC PART:	2.947
MANUFACTURER:	RITRON, Inc.
MODEL:	DTX-145
TYPE OF UNIT:	VHF Transceiver Module
FCC ID:	AIERIT17-145
DATE:	25 June 2012

All of the measurements made on this device and included in this report were made per ANSI/TIA-603-C-2004.

TYPE OF EXHIBIT:	DESCRIPTION OF MEASUREMENT FACILITY
FCC PART:	2.947 (d)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	DTX-145
TYPE OF UNIT:	VHF-FM Two Way Radio Transceiver Module
FCC ID:	AIERIT17-145
DATE:	25 June 2012

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 Industry Canada 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. Attached is a photograph of the test site.

Dennis Zimmerman
Project Engineer
RITRON, Inc.

RITRON Test Site

TYPE OF TEST: OCCUPIED BANDWIDTH

FCC PART: 2.1049 (c)(1) per 90.210 (b)(d)

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

MODEL: DTX-145

TYPE OF UNIT: VHF-FM Two Way Radio Transceiver Module

FCC ID: AIERIT17-145

DATE: 22 June 2012

PROCEDURE:

1. The DTX-145 was programmed for transmitter operation on 155.000 MHz. The transmitter was adjusted for a nominal deviation of +/- 1.5kHz with 1500/3000 Hz AFSK tones for narrowband channels. These tones represent both F2D and F3D waveforms.

2. The RF output of the DTX-145 was measured with an HP8920A communications test set wattmeter at 7.0 watts. Power was set at +14 VDC.

3. The unit's antenna port was connected to the HP8560E spectrum analyzer via a 20 dB power attenuator.

4. The output of the AFSK generator was applied to the auxiliary input of the DTX-145. The AFSK tone level was adjusted to a level 16 dB greater than that necessary to produce 60% of the rated system deviation. The plot shows data occupied bandwidth for 12.5 kHz narrow band operation with a 1500 and 3000 audio frequency shift keying.

5. The spectrum analyzer was centered on 155.000 MHz and the sidebands were capture in max hold mode on the spectrum analyzer. The narrow band emission mask was also superimposed. The spectrum falls within the FCC emissions mask.

TYPE OF TEST: 12.5 kHz DATA OCCUPIED BANDWIDTH

FCC PART: 2.1049 (c)(1) per 90.210 (b)(d)

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

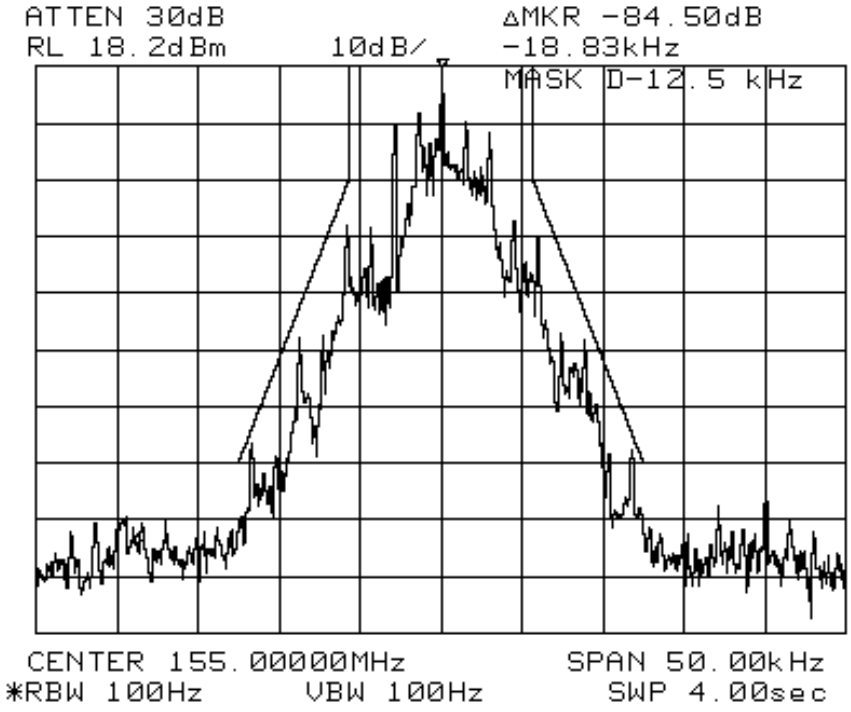
MODEL: DTX-145

TYPE OF UNIT: VHF-FM Two Way Radio Transceiver Module

FCC ID: AIERIT17-145

DATE: 22 June 2012

DATA: 12.5 kHz AFSK data with 1500 Hz and 3000 Hz tones



TYPE OF TEST: EMISSIONS DESIGNATOR

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

MODEL: DTX-145

TYPE OF UNIT: VHF-FM Two Way Radio Transceiver Module

FCC ID: AIERIT17-145

DATE: 22 June 2012

CALCULATIONS:

The necessary bandwidth for the narrowband data channel is:

Maximum modulation frequency (M) in kHz	= 3.0
Maximum deviation (D) in kHz	= 2.5
Constant K	= 1
Necessary bandwidth for **narrowband** in kHz	= (2xM) + (2xDxK) = 11

Narrowband emissions designator applied for is 11K0F2D and 11K0F3D.

TYPE OF TEST:	FIELD STRENGTH OF SPURIOUS RADIATION
FCC PART:	2.1053
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	DTX-145
TYPE OF UNIT:	VHF-FM Two Way Radio Transceiver Module
FCC ID:	AIERIT17-145
DATE:	25 June 2012

Radiated spurious emissions remain as in the original test report.

TYPE OF TEST:	SPURIOUS EMISSIONS AT ANTENNA TERMINALS TRANSMITTER
FCC PART:	2.1051
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	DTX-145
TYPE OF UNIT:	VHF-FM Two Way Radio Transceiver Module
FCC ID:	AIERIT17-145
DATE:	25 June 2012

Conducted spurious emissions remain as in the original test report.