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APPLICATION FOR TYPE ACCEPTANCE

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: December 28, 1998

The following is a list of attached exhibits required by the Federal Communications Commission for the application to and grant of F.C.C. Type Acceptance.

TYPE OF EXHIBIT:	MANUFACTURER'S STATEMENT
FCC PART:	2.983 (a) (b) (c)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	December 28, 1998

The AIERIT06-450 is a 450 - 470 MHz UHF-FM Handheld Transceiver to be manufactured and marketed in the United States of America by the applicant, RITRON, Inc. of Carmel, Indiana.

The AIERIT06-450 will be marketed by RITRON, Inc. as a Patriot model SST-454.

The F.C.C. designator for this unit is ..... FCC ID: AIERIT06-450

RITRON, Inc. will be manufacturing and marketing the AIERIT06-450 handheld transceiver on a continuing basis.

Signed: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF EXHIBIT:	STATEMENT OF CERTIFYING ENGINEER
FCC PART:	2.947
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	December 28, 1998

I, Michael A. Pickard, have been employed by RITRON, Inc. since November 1979, working in the Engineering Department since June 1981 as a radio frequency Project Engineer.

I received an Associates degree in Electronics Engineering Technology from ITT Technical Institute of Indianapolis in 1981.

I hereby certify that all measurements and date herein were taken by me, that they were obtained using sound and accepted engineering principles, and that they accurately reflect the performance and characteristics of the units tested.

Signed: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF EXHIBIT:	TEST EQUIPMENT LIST
FCC PART:	2.947 (d)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	December 28, 1998

The measured data in this report was obtained using one or more of the following pieces of equipment. The particular equipment used in any one test is detailed in the procedure for that test.

ITEM	MANUFACTURER	MODEL NO.	SERIAL NO.
Communications Test Set	IFR	COM-120B	500008863
Communications Test Set	Hewlett-Packard	8920-A	3141A00549
Spectrum Analyzer	Hewlett-Packard	8554B	1502A 09103
Spectrum Analyzer	Hewlett-Packard	8559A	2010A 06979
Audio Sweep Generator	B & K Precision	3025	22-06213
Power Supply	BK/Precision	1630	146-01091
Power Supply	Astron	VS-20M	9608032
Digital Oscilloscope	Philips	PM-3335	DM648004
Dual Display Multimeter	Fluke	45	6723040
Digital VOM	Micronta	22-191	N/A
Digital VOM	Mercer	9340	N/A
RF Wattmeter	Bird	6154	8652
Dipole Antenna	Electro-Metrics	BDA-25	8-101
Log Periodic Antenna	Electro-Metrics	LP-25	8-102
Microwave Test Antenna	Polarad	CA-B	11-3
Temperature Chamber	Associated Laboratories	ELH-0.5-LC	N/A
Thermocouple	Omega	7035-J-225	8504
30dB Power Attenuator	Bird	8306-300-N	N/A
10dB Attenuator	ELCOM	AT-51-10	N/A
20dB Attenuator	Tenuline	8340-200	1544
RF Detector	Microlabs/FXR	XA-1040	N/A

TYPE OF EXHIBIT:	DESCRIPTION OF MEASUREMENT FACILITY
FCC PART:	2.948
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	December 28, 1998

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

This site is used exclusively by RITRON, Inc. and is utilized only for the 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.

Signed: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST:	RADIO FREQUENCY POWER OUTPUT
FCC PART:	2.985
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	November 11, 1998

PROCEDURE:

The SST-454 was aligned for transmitter operation on 450.075, 460.075 and 470.075 MHz (Fo) at full rated power per the tune-up procedure outlined in the Preliminary Maintenance Manual. This represents frequencies at the low, middle and high end of the SST-454 operating frequency band. A pulse width modulated output from Pin 8 of microcontroller IC302 sets a DC gate bias voltage at Pin 2 of Q203 for RF power control.

Power was supplied to the SST-454 via P302 by an Astron Model VS-20M Power Supply. The SST-454 was connected at antenna terminal P201 to the input of a Bird 6154 Thermaline Wattmeter, used to measure RF power of the carrier.

A Mercer Model 9340 Digital Multimeter was connected in series with L208 to measure the Drain current of Q203, the final RF amplifier device. A Micronta Model 22-191 Digital Multimeter was used to measure Q203 Drain supply voltage at L208, as well as Gate bias voltage at Pin 2 of Q203.

The SST-454 is equipped with a 6-cell AA NiMH battery pack that has a nominal voltage of 7.2 VDC and a maximum voltage of 8.4 VDC.

Measurements were taken with the power supply set to 7.2 and 8.4 VDC. The SST-454 transmitter was then set to operate in low and medium power modes, with test measurements made as described above with the power supply set to 7.2 VDC.

TYPE OF TEST: RADIO FREQUENCY POWER OUTPUT

FCC PART: 2.985

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 11, 1998

TEST RESULTS:

Frequency (MHz)	TX Mode	Program	Drain Voltage (VDC)	Gate Voltage (VDC)	Drain Current (Amps)	Input Power (Watts)	Output Power (Watts)	Efficiency
450.075	Low	7B	7.20	1.90	1.03	7.42	1.01	13.6%
	Med	89	7.20	2.20	1.54	11.09	2.05	18.5%
	High	A6	7.20	2.75	2.35	16.92	4.20	24.8%
	High	A6	8.40	2.75	2.54	21.34	5.10	23.9%
460.075	Low	82	7.20	1.95	0.94	6.77	0.93	13.7%
	Med	8E	7.20	2.25	1.45	10.44	1.95	18.7%
	High	A6	7.20	2.75	2.30	16.56	4.25	25.7%
	High	A6	8.40	2.75	2.52	21.17	5.03	23.8%
470.075	Low	7E	7.20	2.05	0.98	7.06	1.02	14.5%
	Med	8B	7.20	2.30	1.42	10.22	2.05	20.1%
	High	A6	7.20	2.75	2.13	15.34	4.25	27.7%
	High	A6	8.40	2.75	2.32	19.49	5.05	25.9%

Certifying Engineer: 

Michael A. Pickard - Project Engineer

TYPE OF TEST:	MODULATOR RESPONSE
FCC PART:	2.987 (a)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	November 17, 1998

PROCEDURE:

The SST-454 was aligned for transmitter operation on 460.075 MHz (Fo) at full rated power per the tune-up procedure outlined in the Preliminary Maintenance Manual.

The SST-454 speech amplifier was disconnected from the modulator at R349. The audio output of an IFR COM-120B Communications Test Set was connected to R349 through a 100μF capacitor. The SST-454 was connected at antenna terminal P201 to the 50Ω RF input of the IFR COM-120B, which was used to measure FM deviation.

The audio signal generator was set to a frequency of 1000 Hz and the output was adjusted to provide +/- 1.5 KHz deviation (60% rated system deviation) as indicated by the IFR COM-120B. This output level was 113 mVRMS.

With the audio generator output level fixed at 113 mVRMS, the frequency was varied from 100 - 5000 Hz. Deviation was measured at various frequencies within this range and recorded on the accompanying chart.

A separate measurement was made for sub-audible tones. The audio signal generator was set for various sub-audible tones between 67 - 250 Hz at an output level of 45 mVRMS, the level required to produce 500 Hz deviation at 67 Hz. There was no variation in resulting deviation across the sub-audible frequency range.

TYPE OF TEST: MODULATOR RESPONSE

FCC PART: 2.987 (a)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 17, 1998

TEST RESULTS:

Test Frequency: 460.075 MHz
Input Voltage required for 60% deviation at 1000 Hz: 113 mVRMS

Modulation Frequency (Hz)	Frequency Deviation (+/- KHz)	Percent System Deviation
100	1.52	60.8%
200	1.52	60.8%
400	1.47	58.8%
800	1.48	59.2%
1000	1.50	60.0%
2000	1.55	62.0%
3000	1.58	63.2%
4000	1.59	63.6%
5000	1.57	62.8%

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST:	SPEECH AMPLIFIER LOW-PASS FILTER RESPONSE
FCC PART:	2.987 (a)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	November 18, 1998

PROCEDURE:

The stages of the SST-454 speech amplifier prior to the low-pass filter were removed by disconnecting C350 from the output of limiting amplifier IC307A. The output of a BK Precision Model 3025 Sweep/Function Generator was applied to C350.

A Fluke Model 45 Dual Display Multimeter was used to measure the low-pass filter output at Pin 1 of IC305A.

The audio signal generator was set for a 1000 Hz sine wave at an output level of 1.88 VRMS to produce 0 dB at the output of the low-pass filter. This level was selected to prevent limiting or distortion at any frequency. The Fluke Model 45 Dual Display Multimeter was set to make all measurements relative to this reference level.

The frequency of the audio signal generator was varied from 100 to 100 KHz with the output level constant. Measurements were recorded on the accompanying chart. All measurements were +/- relative to the 0 dB measured at 1000 Hz.

TYPE OF TEST: SPEECH AMPLIFER LOW-PASS FILTER RESPONSE

FCC PART: 2.987 (a)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 18, 1998

TEST RESULTS:

Input Voltage required for 0 dB output at 1000 Hz: 1.88 VRMS

Frequency (Hz)	Measured Amplitude (dB)	Relative Amplitude (dB)
100	-0.60	-0.60
200	-0.55	-0.55
300	-0.52	-0.52
400	-0.53	-0.53
500	-0.47	-0.47
600	-0.40	-0.40
800	-0.22	-0.22
1000	0.00	0.00
2000	0.44	0.44
3000	-3.97	-3.97
4000	-9.87	-9.87
5000	-14.88	-14.88
6000	-19.08	-19.08
8000	-25.85	-25.85
10000	-31.23	-31.23
12000	-35.71	-35.71
16000	-42.87	-42.87
20000	-48.48	-48.48
24000	-53.09	-53.09
40000	-61.97	-61.97
80000	-63.03	-63.03
100000	-63.00	-63.00

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST: SPEECH AMPLIFIER LOW-PASS FILTER RESPONSE

FCC PART: 2.987 (a)

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

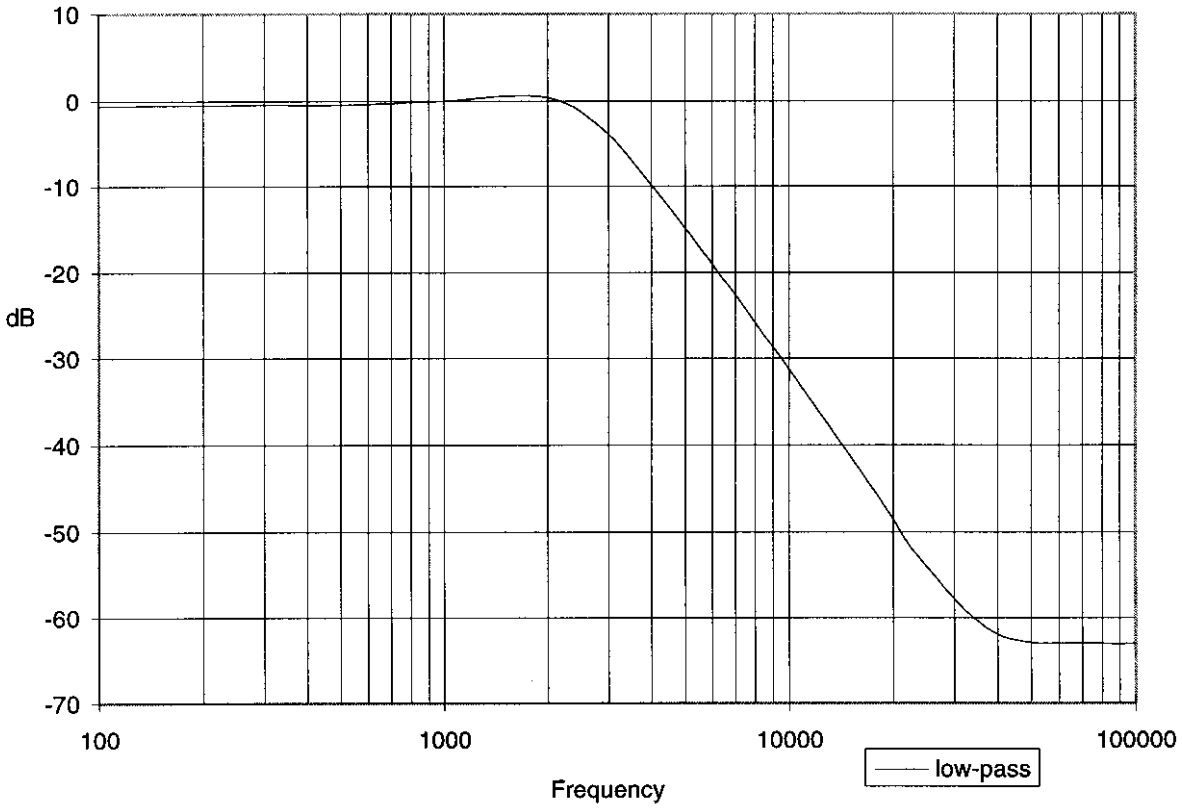
MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 18, 1998

CURVE:



TYPE OF TEST:	PERCENT MODULATION VS. MODULATION INPUT VOLTAGE
FCC PART:	2.987 (b)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	November 19, 1998

PROCEDURE:

1. The SST-454 was aligned for transmitter operation on 460.075 MHz (Fo) per the tune-up procedure outlined in the Preliminary Maintenance Manual.

2. The SST-454 was connected at antenna terminal P201 to the RF input of an IFR COM-120B Communications Test Set used to measure FM deviation.

3. The output of a BK Precision Model 3025 Sweep/Function Generator was applied to the microphone input of the SST-454 through J301. The output of the audio generator was set to an output level of 1.0 VRMS, a level sufficient to drive the audio circuit into limiting at any frequency.

4. A Fluke Model 45 Dual Display Multimeter was used to measure the amplitude of the signal applied to the microphone input.

5. The frequency of the audio generator was adjusted to find the frequency of maximum response. The SST-454 was set for 12.5 KHz bandwidth operation and the deviation was adjusted for +/- 2.5 KHz as outlined in the Preliminary Maintenance Manual.

6. The frequency of the audio signal generator was set to 300 Hz and the output level was adjusted to produce 250 Hz deviation, which is 10% of the rated modulation. The voltage level was then adjusted for 20% of the rated modulation, and repeated for every 10% increment.

7. The input voltage was adjusted to a level 16 dB greater than that required to produce 50% modulation. The maximum deviation was noted, along with the level required to achieve it, if 100% modulation was not realized.

8. Steps 6 and 7 were repeated for frequencies of 500, 750, 1000, 2000 and 3000 Hz.

9. The SST-454 was set for 25 KHz bandwidth operation and the deviation was adjusted for +/- 5 KHz as outlined in the Preliminary Maintenance Manual.

10. Steps 6, 7 and 8 were repeated for 25 KHz bandwidth operation.

11. Results were plotted on separate graphs for 12.5 KHz and 25 KHz bandwidth operation.

TYPE OF TEST: PERCENT MODULATION VS. MODULATION INPUT VOLTAGE

FCC PART: 2.987 (b)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 19, 1998

TEST RESULTS:

Percent Modulation	Deviation (KHz)	Input level (mVRMS) - **12.5 KHz Bandwidth**					
		300 Hz	500 Hz	750 Hz	1000 Hz	2000 Hz	3000 Hz
10%	0.25	21.9	5.4	3.2	2.2	1.1	1.3
20%	0.50	59.6	14.9	8.7	6.2	2.9	3.4
30%	0.75	99.4	23.8	14.1	10.0	4.7	5.5
40%	1.00	136.6	33.3	19.3	13.6	6.5	7.6
50%	1.25	172.8	41.9	24.6	17.4	8.3	9.5
60%	1.50	206.5	50.1	29.8	21.3	10.1	11.8
70%	1.75	322.7	65.4	34.9	25.0	12.0	28.0*
80%	2.00	418.6	87.0	46.9	32.0	13.7	
90%	2.25	462.2	97.2	55.2	39.5	16.1	
100%	2.50	997.1*	124.2*	64.0*	51.8*	25.5*	
Level at 50%	+16 dB	1090.4	263.4	155.3	109.5	52.6	60.5
Max Deviation	(KHz)	2.39*	2.39*	2.35*	2.35*	2.47*	1.65*

Percent Modulation	Deviation (KHz)	Input level (mVRMS) - **25 KHz Bandwidth**					
		300 Hz	500 Hz	750 Hz	1000 Hz	2000 Hz	3000 Hz
10%	0.50	27.5	7.1	4.2	3.0	1.4	1.6
20%	1.00	65.0	16.0	9.4	6.7	3.2	3.6
30%	1.50	100.9	25.0	14.7	10.6	4.9	5.6
40%	2.00	135.4	33.7	20.1	14.3	6.8	7.7
50%	2.50	168.8	42.6	25.0	18.2	8.6	9.7
60%	3.00	199.6	51.1	30.2	21.9	10.6	13.3
70%	3.50	277.9	68.2	35.5	25.7	12.4	16.8*
80%	4.00	414.5	87.1	47.0	32.4	14.2	
90%	4.50	484.3	101.4	55.9	40.9	16.8	
100%	5.00	753.8*	128.6*	81.9*	65.5*	36.6*	
Level at 50%	+ 16 dB	1067.0	268.8	158.5	115.0	54.4	61.5
Max Deviation	(KHz)	4.62*	4.69*	4.71*	4.63*	4.91*	3.17*

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST: PERCENT MODULATION VS. MODULATION INPUT VOLTAGE

FCC PART: 2.987 (b)

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

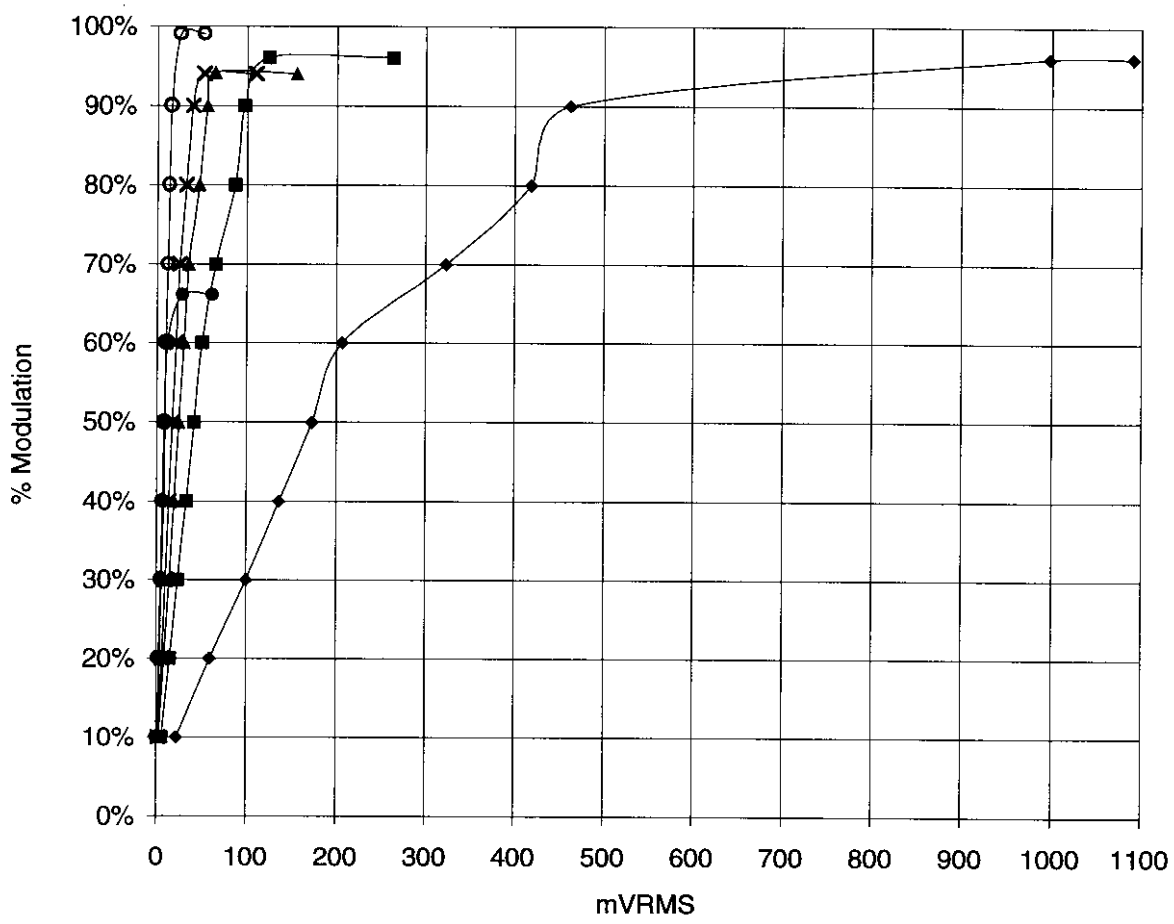
MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 19, 1998

CURVE:



Channel Bandwidth: 12.5 KHz
100% Modulation: 2.5 KHz

TYPE OF TEST: PERCENT MODULATION VS. MODULATION INPUT VOLTAGE

FCC PART: 2.987 (b)

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

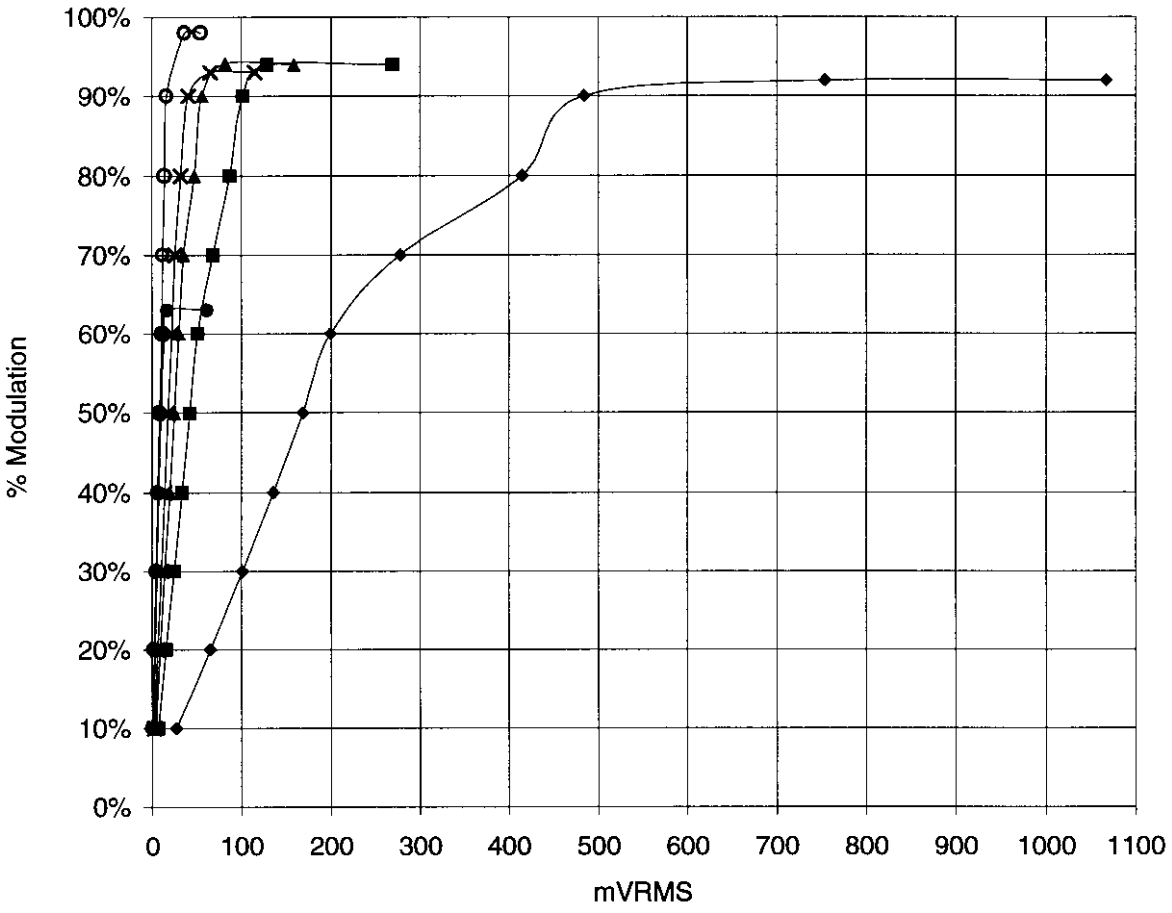
MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 19, 1998

CURVE:



Channel Bandwidth: 12.5 KHz
100% Modulation: 5 KHz

TYPE OF TEST:	OCCUPIED BANDWIDTH
FCC PART:	2.989 (c) (1) per 90.210 (b) (d)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	November 30, 1998

PROCEDURE:

1. The SST-454 was aligned for transmitter operation on 460.075 MHz (Fo) at full rated power, was set for 12.5 KHz bandwidth operation, and the deviation was adjusted for +/- 2.5 KHz as outlined in the Preliminary Maintenance Manual.

2. The RF output of the SST-454 was measured with a Bird Model 6154 Thermaline Wattmeter. This value was recorded as POWER OUTPUT. Power was supplied to the SST-454 via P302 by an Astron Model VS-20M Power Supply set at +8.4 VDC to produce the maximum rated transmitter power output.

3. The antenna terminal P201 was connected to the input of a Bird Model 8306-300-N 30 DB power attenuator. The output of the attenuator was connected to the input of a Hewlett Packard Model 8554B Spectrum Analyzer. The spectrum analyzer was set to:

   - 100 Hz Resolution
   - 5 KHz per Horizontal Division
   - 0 dBm Reference
   - 10 dB per Vertical Division

4. The center frequency of the spectrum analyzer was set to the SST-454 carrier frequency and the full scale reference line was set to the level of the unmodulated carrier.

5. The output of a BK Precision Model 3025 Sweep/Function Generator was applied to the microphone input of the SST-454 through J301. The frequency of the audio signal generator was set to 2500 Hz and the output adjusted to a level 16 dB greater than that necessary to produce 50% of the rated system deviation.

6. The spectrum analyzer readings of the sideband levels in dBm were recorded and a graph of the spectrum analyzer output was plotted. All readings were rounded up to the nearest dB.

7. Steps 3 - 6 were repeated with the radio set for low power operation.

8. The SST-454 was set for 25 KHz bandwidth operation, and the deviation was adjusted for +/- 5 KHz as outlined in the Preliminary Maintenance Manual. Steps 3 - 7 were repeated for 25 KHz bandwidth operation.

TYPE OF TEST:	OCCUPIED BANDWIDTH
FCC PART:	2.989 (c) (1) per 90.210 (b) (d)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	November 30, 1998

EQUATIONS:

The analyzer readings in dBm were converted to power using the following formula:

Power = .001 (antilog F(dBm, 10))

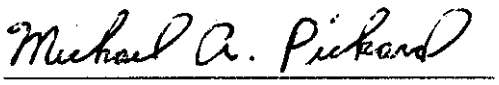
The power readings were summed to provide a reference power level. The total was converted back to dBm with the following formula and recorded as MEAN REFERENCE POWER OUTPUT:

dBm = 10 (log Fc (Power,.001))

The sideband powers on each side of the carrier were reduced to a percentage of the MEAN REFERENCE POWER OUTPUT. The percentages were added together starting with the carrier and expanding out equally in +/- 2.5 KHz increments until greater than 99.5% of the total MEAN REFERENCE POWER was reached.

The occupied bandwidth is defined as having 99.5% of the total MEAN REFERENCE POWER existing within its limits.

NOTE:
The 15 KHz sidebands are higher than the 12.5 KHz sidebands as a result of the PWM power control on the gate of RF amplifier Q203.

Certifying Engineer: 

Michael A. Pickard - Project Engineer

TYPE OF TEST: OCCUPIED BANDWIDTH

FCC PART: 2.989 (c) (1) per 90.210 (b) (d)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 30, 1998

DATA:

Carrier Frequency:	460.075	MHz
Power Output:	1.00	Watts
Power Output:	30.00	dBm
Mean Reference Power:	30.23	dBm
Channel Bandwidth:	12.5	KHz
Occupied Bandwidth:	10.0	KHz

Emission Frequency Offset (KHz)	Measured Relative Amplitude (dBm)	Actual Amplitude (dBm)	FCC Limit (dBm)	Power (Watts)	Percent MRP (%)	Occupied Bandwidth (%)
-25.0			-20.00			
-22.5			-20.00			
-20.0			-20.00			
-17.5			-20.00			
-15.0	-71.00	-41.00	-20.00	79.4E-9	0.00%	
-12.5	-71.00	-41.00	-39.94	79.4E-9	0.00%	
-10.0	-56.00	-26.00	-21.76	2.5E-6	0.00%	
-7.5	-40.00	-10.00	-3.59	100.0E-6	0.01%	
-5.0	-23.00	7.00	30.00	5.0E-3	0.47%	
-2.5	-9.00	21.00	30.00	125.9E-3	11.93%	
0.0	-1.00	29.00	30.00	794.3E-3	75.27%	99.98%
2.5	-9.00	21.00	30.00	125.9E-3	11.93%	
5.0	-24.00	6.00	30.00	4.0E-3	0.38%	
7.5	-41.00	-11.00	-3.59	79.4E-6	0.01%	
10.0	-57.00	-27.00	-21.76	2.0E-6	0.00%	
12.5	-71.00	-41.00	-39.94	79.4E-9	0.00%	
15.0	-71.00	-41.00	-20.00	79.4E-9	0.00%	
17.5			-20.00			
20.0			-20.00			
22.5			-20.00			
25.0			-20.00			

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST: OCCUPIED BANDWIDTH

FCC PART: 2.989 (c) (1) per 90.210 (d)

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

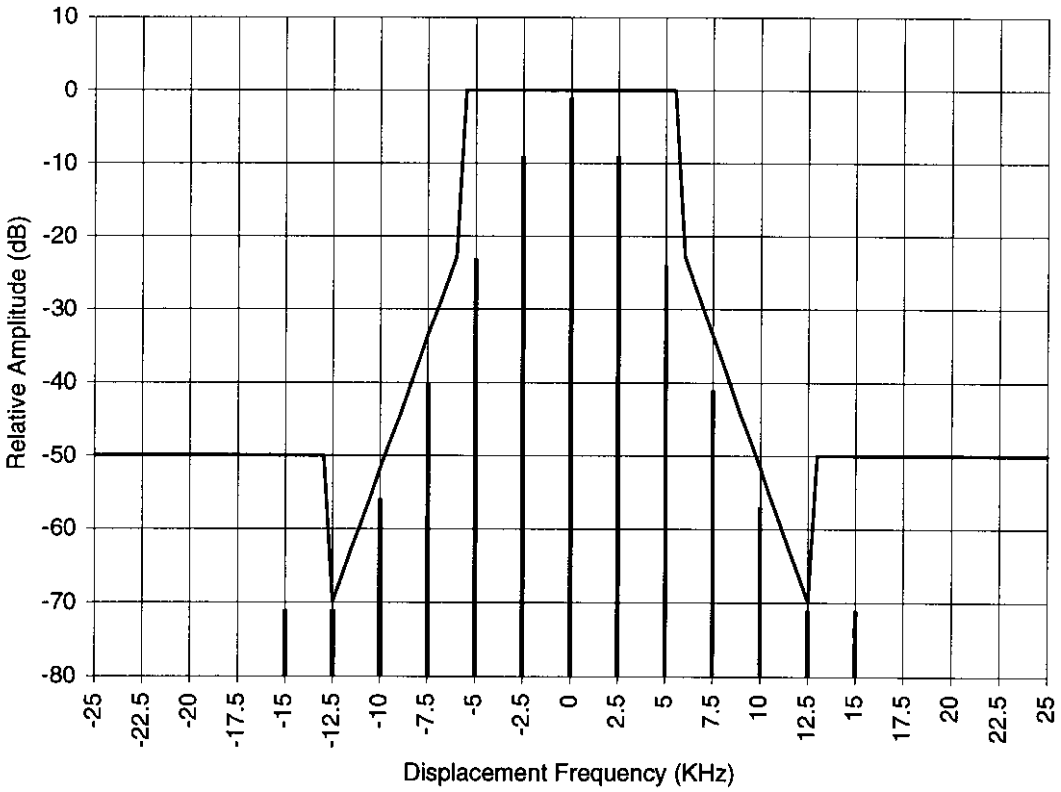
MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 30, 1998

CURVE:



Channel Bandwidth: 12.5 KHz
Power Output: 1.0 Watts

TYPE OF TEST: OCCUPIED BANDWIDTH

FCC PART: 2.989 (c) (1) per 90.210 (b) (d)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 30, 1998

DATA:

Carrier Frequency:	460.075	MHz
Power Output:	5.00	Watts
Power Output:	36.99	dBm
Mean Reference Power:	36.23	dBm
Channel Bandwidth:	12.5	KHz
Occupied Bandwidth:	10.0	KHz

Emission Frequency Offset (KHz)	Measured Relative Amplitude (dBm)	Actual Amplitude (dBm)	FCC Limit (dBm)	Power (Watts)	Percent MRP (%)	Occupied Bandwidth (%)
-25.0			-20.00			
-22.5			-20.00			
-20.0			-20.00			
-17.5			-20.00			
-15.0	-68.00	-31.01	-20.00	792.4E-9	0.00%	
-12.5	-71.00	-34.01	-32.95	397.2E-9	0.00%	
-10.0	-55.00	-18.01	-14.77	15.8E-6	0.00%	
-7.5	-40.00	-3.01	3.40	500.0E-6	0.01%	
-5.0	-24.00	12.99	36.99	19.9E-3	0.47%	
-2.5	-10.00	26.99	36.99	500.0E-3	11.92%	
0.0	-2.00	34.99	36.99	3.2E+0	75.19%	99.98%
2.5	-10.00	26.99	36.99	500.0E-3	11.92%	
5.0	-24.00	12.99	36.99	19.9E-3	0.47%	
7.5	-41.00	-4.01	3.40	397.2E-6	0.01%	
10.0	-57.00	-20.01	-14.77	10.0E-6	0.00%	
12.5	-71.00	-34.01	-32.95	397.2E-9	0.00%	
15.0	-67.00	-30.01	-20.00	997.6E-9	0.00%	
17.5			-20.00			
20.0			-20.00			
22.5			-20.00			
25.0			-20.00			

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST: OCCUPIED BANDWIDTH

FCC PART: 2.989 (c) (1) per 90.210 (d)

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

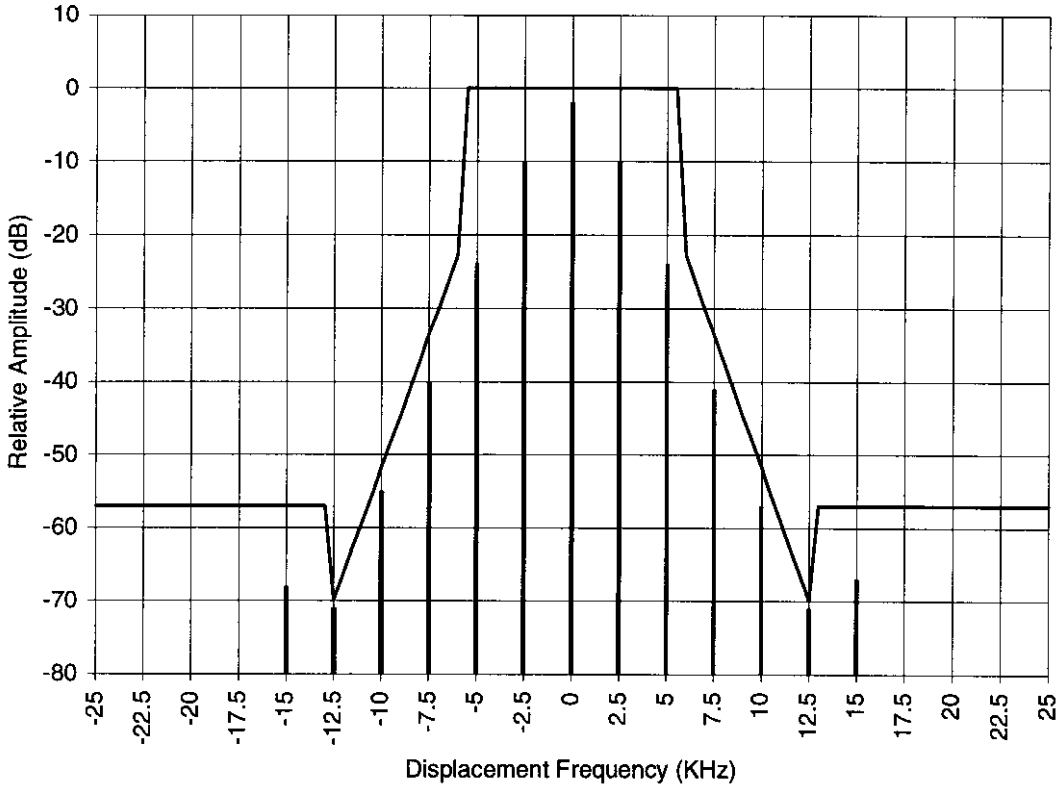
MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 30, 1998

CURVE:



Channel Bandwidth: 12.5 KHz
Power Output: 5.0 Watts

TYPE OF TEST: OCCUPIED BANDWIDTH

FCC PART: 2.989 (c) (1) per 90.210 (b) (d)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 30, 1998

DATA:

Carrier Frequency:	460.075	MHz
Power Output:	1.00	Watts
Power Output:	30.00	dBm
Mean Reference Power:	29.87	dBm
Channel Bandwidth:	25.0	KHz
Occupied Bandwidth:	20.0	KHz

Emission Frequency Offset (KHz)	Measured Relative Amplitude (dBm)	Actual Amplitude (dBm)	FCC Limit (dBm)	Power (Watts)	Percent MRP (%)	Occupied Bandwidth (%)
-25.0			-5.00			
-22.5			-5.00			
-20.0			5.00			
-17.5	-70.00	-40.00	5.00	100.0E-9	0.00%	
-15.0	-65.00	-35.00	5.00	316.2E-9	0.00%	
-12.5	-51.00	-21.00	5.00	7.9E-6	0.00%	
-10.0	-37.00	-7.00	30.00	199.5E-6	0.02%	
-7.5	-24.00	6.00	30.00	4.0E-3	0.41%	
-5.0	-14.00	16.00	30.00	39.8E-3	4.10%	
-2.5	-5.00	25.00	30.00	316.2E-3	32.57%	
0.0	-6.00	24.00	30.00	251.2E-3	25.87%	100.00%
2.5	-5.00	25.00	30.00	316.2E-3	32.57%	
5.0	-14.00	16.00	30.00	39.8E-3	4.10%	
7.5	-25.00	5.00	30.00	3.2E-3	0.33%	
10.0	-38.00	-8.00	30.00	158.5E-6	0.02%	
12.5	-54.00	-24.00	5.00	4.0E-6	0.00%	
15.0	-67.00	-37.00	5.00	199.5E-9	0.00%	
17.5	-71.00	-41.00	5.00	79.4E-9	0.00%	
20.0			5.00			
22.5			-5.00			
25.0			-5.00			

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST: OCCUPIED BANDWIDTH

FCC PART: 2.989 (c) (1) per 90.210 (b)

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

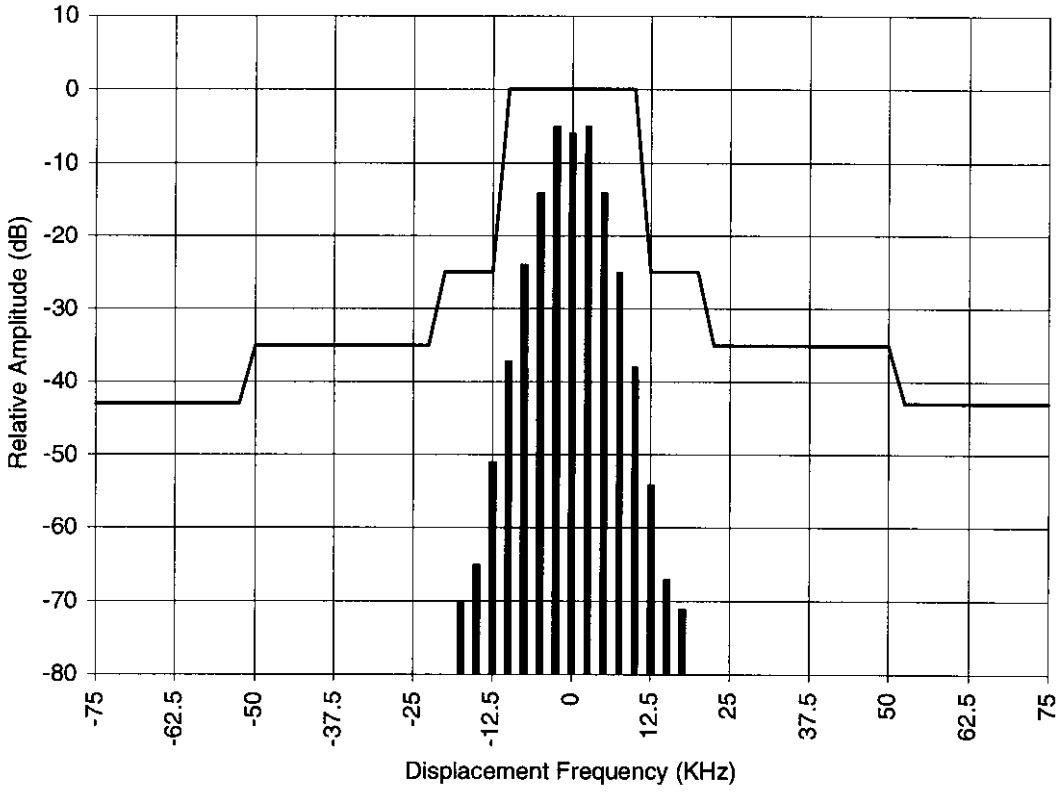
MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 30, 1998

CURVE:



Channel Bandwidth: 25 KHz
Power Output: 1.0 Watts

TYPE OF TEST: OCCUPIED BANDWIDTH

FCC PART: 2.989 (c) (1) per 90.210 (b) (d)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 30, 1998

DATA:

Carrier Frequency:	460.075	MHz
Power Output:	5.00	Watts
Power Output:	36.99	dBm
Mean Reference Power:	37.36	dBm
Channel Bandwidth:	25.0	KHz
Occupied Bandwidth:	20.0	KHz

Emission Frequency Offset (KHz)	Measured Relative Amplitude (dBm)	Actual Amplitude (dBm)	FCC Limit (dBm)	Power (Watts)	Percent MRP (%)	Occupied Bandwidth (%)
-25.0			1.99			
-22.5			1.99			
-20.0			11.99			
-17.5	-71.00	-34.01	11.99	397.2E-9	0.00%	
-15.0	-64.00	-27.01	11.99	2.0E-6	0.00%	
-12.5	-50.00	-13.01	11.99	50.0E-6	0.00%	
-10.0	-36.00	0.99	36.99	1.3E-3	0.02%	
-7.5	-23.00	13.99	36.99	25.1E-3	0.46%	
-5.0	-12.00	24.99	36.99	315.5E-3	5.80%	
-2.5	-4.00	32.99	36.99	2.0E+0	36.59%	
0.0	-6.00	30.99	36.99	1.3E+0	23.08%	100.00%
2.5	-5.00	31.99	36.99	1.6E+0	29.06%	
5.0	-13.00	23.99	36.99	250.6E-3	4.61%	
7.5	-24.00	12.99	36.99	19.9E-3	0.37%	
10.0	-38.00	-1.01	36.99	792.4E-6	0.01%	
12.5	-53.00	-16.01	11.99	25.1E-6	0.00%	
15.0	-66.00	-29.01	11.99	1.3E-6	0.00%	
17.5	-71.00	-34.01	11.99	397.2E-9	0.00%	
20.0			11.99			
22.5			1.99			
25.0			1.99			

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST: OCCUPIED BANDWIDTH

FCC PART: 2.989 (c) (1) per 90.210 (b)

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

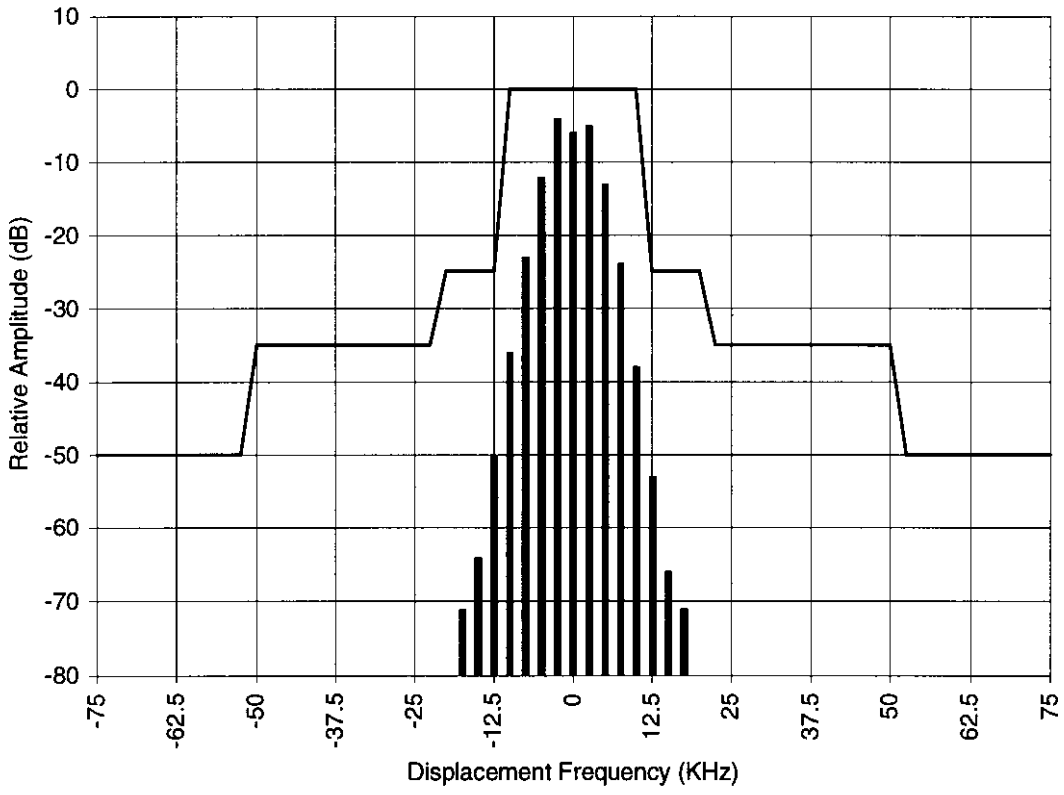
MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 30, 1998

CURVE:



Channel Bandwidth: 25 KHz
Power Output: 5.0 Watts

TYPE OF TEST:	SPURIOUS EMISSIONS AT ANTENNA TERMINALS
FCC PART:	2.991
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	December 7, 1998

PROCEDURE:

The SST-454 was aligned for transmitter operation on 460.075 MHz (Fo) at full rated power per the tune-up procedure outlined in the Preliminary Maintenance Manual.

Power was supplied to the SST-454 by a BK Precision Model 1630 Power Supply. The supply voltage was set to +8.4 VDC to represent the highest possible operating voltage.

The transmitter was modulated by a 2500 Hz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation as specified in FCC Part 2.989 (c) (1).

The SST-454 antenna terminal P201 was connected to the input of a Bird Model 8306-300-N, 30 dB power attenuator, in series with a notch filter tuned to the carrier frequency. The output of the notch filter and attenuator was connected to the input of a Hewlett-Packard Model 8559A Spectrum Anaylzer.

The spectrum was searched from 8 MHz to the 10th harmonic of the operating frequency. All unreported emissions were more than 30 dB below the FCC limit of 50 + 10 log P, or -20 dBm.

The measured insertion loss of the attenuators, notch filter, and cables are listed as the "Correction Factor" on the data sheet.

A second test was conducted with the SST-454 transmitter set for low power operation. The supply voltage was set to +7.2 VDC to represent the nominal operating voltage. All other conditions remained the same.

TYPE OF TEST: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

FCC PART: 2.991

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: December 7, 1998

TEST RESULTS:

Carrier Frequency (Fo):	460.075	MHz
Reference Oscillator Frequency:	14.4	MHz
Output Power:	5.00	Watts
Supply Voltage:	8.4	VDC
FCC Limit:	-20	dBm

Emission Frequency (MHz)	Mulitple of Carrier	Measured Amplitude (dBm)	Correction Factor (dB)	Resultant Amplitude (dBm)
416.875	fo - (14.4 * 3)	-82	34	-48
431.275	fo - (14.4 * 2)	-76	34	-42
445.675	fo - 14.4	-66	37	-29
460.075	fo	-26	62	36
474.475	fo + 14.4	-61	31	-30
488.875	fo + (14.4 * 2)	-74	33	-41
503.275	fo + (14.4 * 3)	-81	33	-48
920.150	fo * 2	-68	37	-31
1380.225	fo * 3	-85	37	-48
1840.300	fo * 4	-81	37	-44
2300.375	fo * 5	-85	37	-48
2760.450	fo * 6	-84	37	-47

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

FCC PART: 2.991

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

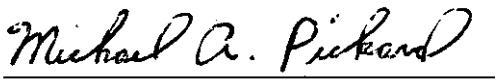
FCC ID: AIERIT06-450

DATE: December 7, 1998

TEST RESULTS:

Carrier Frequency (Fo):	460.075	MHz
Reference Oscillator Frequency:	14.4	MHz
Output Power:	1.00	Watts
Supply Voltage:	7.2	VDC
FCC Limit:	-20	dBm

Emission Frequency (MHz)	Mulitple of Carrier	Measured Amplitude (dBm)	Correction Factor (dB)	Resultant Amplitude (dBm)
445.675	fo - 14.4	-78	37	-41
460.075	fo	-31	62	31
474.475	fo + 14.4	-73	31	-42
920.150	fo * 2	-62	37	-25
1380.225	fo * 3	-86	37	-49

Certifying Engineer: 

Michael A. Pickard - Project Engineer

TYPE OF TEST:	FIELD STRENGTH OF SPURIOUS RADIATION
FCC PART:	2.993 (b)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	November 13, 1998

PROCEDURE:

The following measurements were taken at the RITRON, Inc. 3 meter test site. Measurements were made in accordance with FCC Rules & Regulations Part 2.947, using the procedures of IEC Publication 106.

The SST-454 was aligned for transmitter operation on 460.075 MHz (Fo) at full rated power per the tune-up procedure outlined in the Preliminary Maintenance Manual. The unit was then terminated at the antenna port with a non-radiating 50Ω terminating load.

All field strength measurements were made with the Hewlett-Packard Model 8559A Spectrum Analyzer and the appropriate antenna for the frequency being measured. The antennas used were:

- Electro-Metrics BDA-25 Dipole Antenna at 0 to 200 MHz
- Electro-Metrics LP-25 Log Periodic Antenna at 200 to 1000 MHz
- Polarad CA-BB Microwave Antenna at 1000 to 10,000 MHz

For each emission, the height and polarization of the field strength measuring antenna and orientation of the SST-454 were varied to provide maximum field strength. The spectrum was searched from 4 MHz to the 10th harmonic of the transmit frequency. All unreported emissions were more than 20 dB below the FCC limits specified in Part 90.210(d)(3).

The SST-454 was then set for low power transmitter operation and test measurements were repeated as described above.

TYPE OF TEST: FIELD STRENGTH OF SPURIOUS RADIATION

FCC PART: 2.993 (b)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 13, 1998

EQUATIONS:

Analyzer readings in dBm and the calibrated antenna factor were converted to field strength as follows:

$$P_{3m} = R + 107 + K$$
$$E_{3m} = \text{Log}^{-1} (P_{3m} / 20)$$

where:
P_{3m} = Power output at 3 meters in dBm.
R = Direct reading from spectrum analyzer in dBm.
K = Antenna factor in dB at 3 meters.
E_{3m} = Field strength at 3 meters in μV/m.

The reference level for a half wave dipole was computed as follows:

$$E_{ref} = 1000000 * \sqrt{(49.2 * P)} / D$$

where:
P = Transmitter power in Watts.
D = Distance in meters.

The amount, in dB, that the measured field strength is below the reference field strength was computed as follows:

$$E = 20 \text{ Log } (E_{3m} / E_{ref})$$

where:
E = The amount below reference level in dB.
E_{3m} = Field strength at 3 meters in μV/m.
E_{ref} = Reference field strength at 3 meters in μV/m.

TYPE OF TEST: FIELD STRENGTH OF SPURIOUS RADIATION

FCC PART: 2.993 (b)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: November 13, 1998

TEST RESULTS:

Carrier Frequency: 460.075 MHz
Power Output: 5.00 Watts
Dipole Reference Level: 5228129.05 µV / m
FCC Limit: 56.99 dB

Emission Frequency (MHz)	Multiple of Carrier	Antenna	Analyzer Reading (dBm)	Antenna Factor (dB)	Field Strength (µV/m)	dB Below Reference Level	dB Below FCC Limit
920.150	2	Log Periodic	-61	28.41	5255.33	-59.95	-2.97
1380.225	3	Omni-Conical	-74	28.86	1238.15	-72.51	-15.52

Carrier Frequency: 460.075 MHz
Power Output: 1.00 Watts
Dipole Reference Level: 2338090.39 µV / m
FCC Limit: 50.00 dB

Emission Frequency (MHz)	Multiple of Carrier	Antenna	Analyzer Reading (dBm)	Antenna Factor (dB)	Field Strength (µV/m)	dB Below Reference Level	dB Below FCC Limit
920.150	2	Log Periodic	-70	28.41	1864.66	-61.97	-11.97
1380.225	3	Omni-Conical	-78	28.86	781.22	-69.52	-19.52

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST:	FREQUENCY STABILITY VS. TEMPERATURE
FCC PART:	2.995 (a)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	December 3, 1998

PROCEDURE:

The SST-454 was aligned for transmitter operation on 460.075 MHz (Fo) at full rated power per the tune-up procedure outlined in the Preliminary Maintenance Manual.

Power was supplied to the SST-454 by a BK Precision Model 1630 power supply set to the nominal operating voltage of +7.2 VDC. The SST-454 antenna terminal P201 was connected to the input of an IFR COM-120B RF communications test set, used to measure frequency of the carrier.

Temperature was measured with a Omega Model 7035-J-225 thermocouple connected directly to the case of Y302, a TCVCXO reference oscillator mounted on the SST-454 printed circuit board.

The SST-454 was enclosed in a plastic bag and placed into a Associated Laboratories Model ELH-0.5-LC environmental test chamber.

The temperature was raised to +50°C and allowed to stabilize for 30 minutes. The transmitter was activated and the frequency output recorded. The temperature was lowered in 5°C increments down to -30°C, allowing 30 minutes to stabilize at each temperature.

All measurements were converted to part-per-million (ppm) deviation from the measurement made at +25°C and charted on a linear graph.

TYPE OF TEST: FREQUENCY STABILITY VS. TEMPERATURE

FCC PART: 2.995 (a)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: December 3, 1998

TEST RESULTS:

Frequency:	460.075 MHz
Nominal Temp:	+25 °C
FCC Limit:	+/- 2.5 ppm

Temperature (°C)	Frequency (MHz)	Deviation (Hz)	Deviation (ppm)
50	460.074770	-555	-1.21
45	460.074625	-700	-1.52
40	460.074615	-710	-1.54
35	460.074725	-600	-1.30
30	460.074960	-365	-0.79
25	460.075325	0	0.00
20	460.075550	225	0.49
15	460.075825	500	1.09
10	460.075975	650	1.41
5	460.076140	815	1.77
0	460.075890	565	1.23
-5	460.075930	605	1.32
-10	460.075790	465	1.01
-15	460.075610	285	0.62
-20	460.075450	125	0.27
-25	460.075280	-45	-0.10
-30	460.075195	-130	-0.28

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST: FREQUENCY STABILITY VS. TEMPERATURE

FCC PART: 2.995 (a)

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

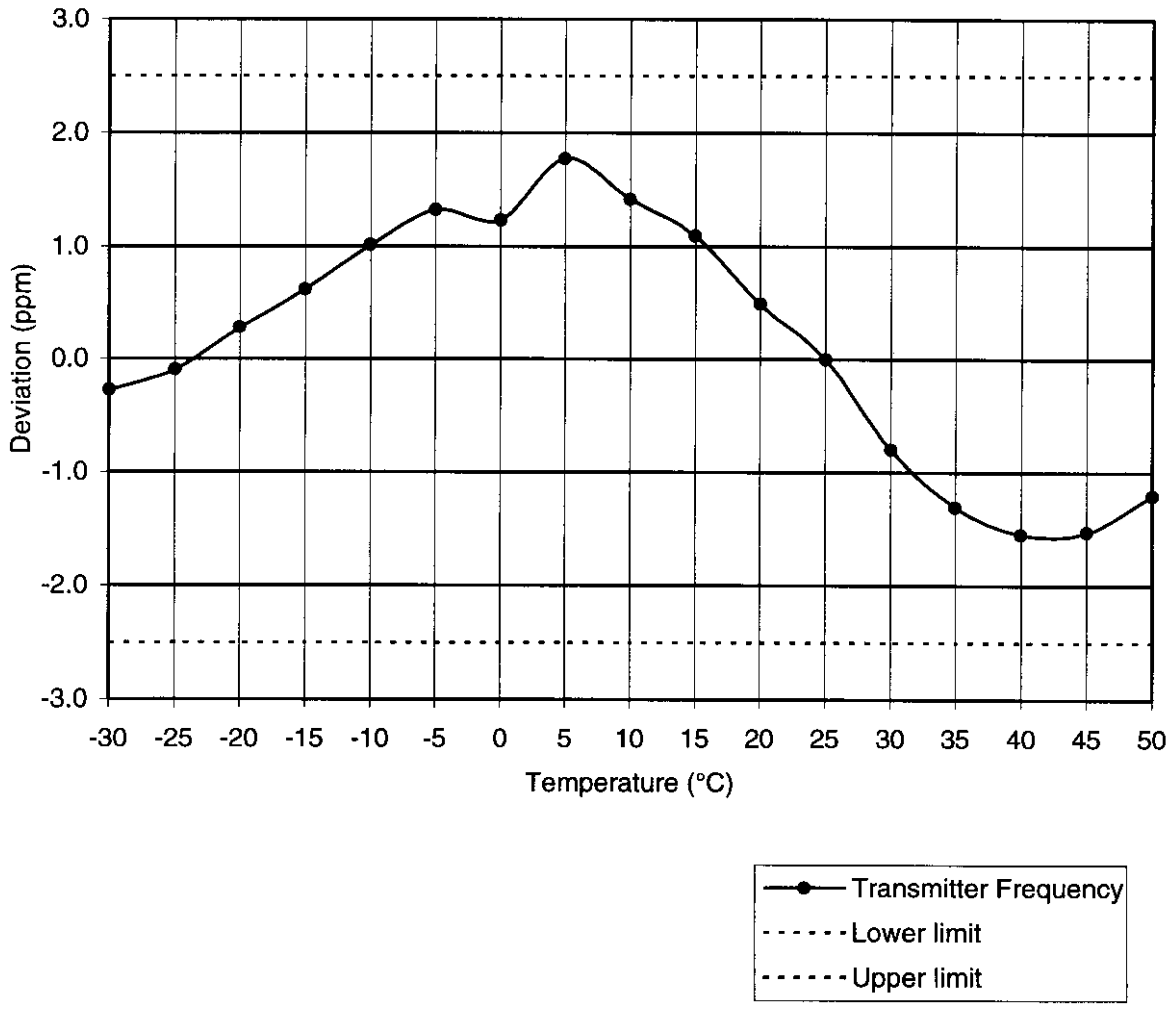
MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: December 3, 1998

CURVE:



TYPE OF TEST:	FREQUENCY STABILITY VS. BATTERY VOLTAGE
FCC PART:	2.995 (d) (2)
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	December 8, 1998

PROCEDURE:

The SST-454 was aligned for transmitter operation on 460.075 MHz (Fo) at full rated power per the tune-up procedure outlined in the Preliminary Maintenance Manual.

Power was supplied to the SST-454 by a BK Precision Model 1630 power supply, and supply voltage was measured at P302 battery connector with a Micronta Model 22-191 Digital Multimeter. The SST-454 antenna terminal P201 was connected to the input of an IFR COM-120B RF communications test set, used to measure frequency of the carrier.

Frequency measurements were made at +25°C with the supply voltage set to 6.0, 7.2 and 8.4 VDC.

The lowest operating voltage is determined by battery end of life voltage for each cell multiplied by the number of individual cells. The highest operating voltage is determined by the maximum cell voltage multiplied by the number of cells. For AA NiCd and NiMH cells the lowest operating voltage is 1 VDC and the highest operating voltage is 1.4 VDC.

Lowest operating voltage	1.0 VDC X 6 cells	6.0 VDC
Nominal operating voltage	1.2 VDC X 6 cells	7.2 VDC
Lowest operating voltage	1.4 VDC X 6 cells	8.4 VDC

All frequencies were referenced to the measurement made at +7.2 VDC, the nominal supply voltage for a 6-cell AA NiCd battery pack.

TYPE OF TEST: FREQUENCY STABILITY VS. BATTERY VOLTAGE

FCC PART: 2.995 (d) (2)

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

FCC ID: AIERIT06-450

DATE: December 8, 1998

TEST RESULTS:

Carrier Frequency: 460.075 MHz

Battery Voltage (VDC)	Battery Condition	Transmitter Frequency (MHz)	Deviation (Hz)	Deviation (ppm)
6.0	end of life	460.074990	-10	-0.02
7.2	nominal	460.075000	0	0.00
8.4	high charge	460.075010	+10	0.02

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST: TRANSIENT FREQUENCY BEHAVIOR

FCC PART: 90.214

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

MODEL: SST-454

TYPE OF UNIT: UHF-FM Handheld Transceiver

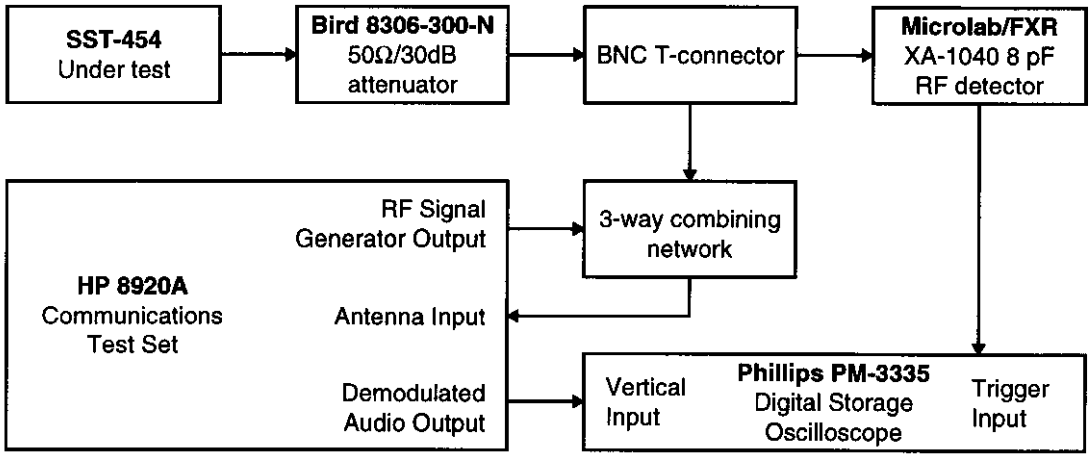
FCC ID: AIERIT06-450

DATE: December 2, 1998

PROCEDURE:

The SST-454 was aligned for transmitter operation on 460.075 at full rated power per the tune-up procedure outlined in the Preliminary Maintenance Manual. The tests were conducted per EIA-603 Part 2.2.19 as follows:

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



2. The Hewlett-Packard 8920A receiver was set to measure FM deviation with the audio bandwidth set at ≤ 20 Hz to 15 KHz and the RF frequency set to 460.075 MHz.

3. The SST-454 transmitter under test was turned on and the Hewlett-Packard 8920A Spectrum Analyzer was used to measure the RF power level through the test network.

4. The SST-454 transmitter was turned off.

5. The Hewlett-Packard 8920A RF signal generator was set to 460.075 MHz at an RF level 20 dB below that measured in step 3, modulated with a 1 KHz tone at ± 25 KHz deviation.

6. The Phillips PM-3335 digital oscilloscope horizontal sweep rate was set to 10 mS per division. The vertical amplitude control was adjusted to display the 1000 Hz demodulated audio from the signal generator at ± 4 divisions, verically centered on the screen.

7. The Phillips PM-3335 digital oscilloscope was set to trigger at 1 division from the left side of the display when the RF detector senses RF power from the SST-454 transmitter.

8. The SST-454 transmitter is turned on 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 on condition" and shows compliance with FCC Part 90.214.

9. The Phillips 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 SST-454 transmitter.

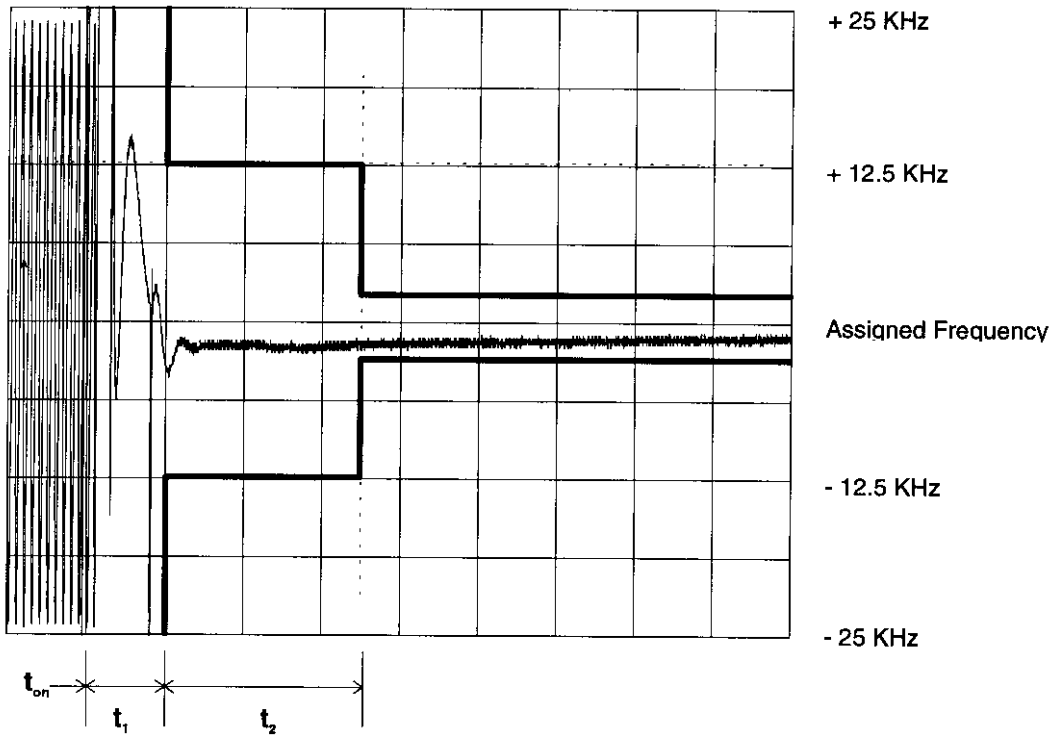
10. The SST-454 transmitter is turned off and the resulting waveform on the oscilloscope display was stored and plotted. The FCC limits per Part 90.214 were added to the plot in the same manner illustrated in EIA-603 Part 3.2.19.2 The resulting plot is labeled "switch off condition" and shows compliance with FCC Part 90.214.

Certifying Engineer: Michael A. Pickard

Michael A. Pickard - Project Engineer

TYPE OF TEST:	TRANSIENT FREQUENCY BEHAVIOR
FCC PART:	90.214
MANUFACTURER:	RITRON, INC. 505 West Carmel Drive Carmel, IN 46032
MODEL:	SST-454
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	December 2, 1998

SWITCH ON CONDITION t_{on}, t_1, and t_2



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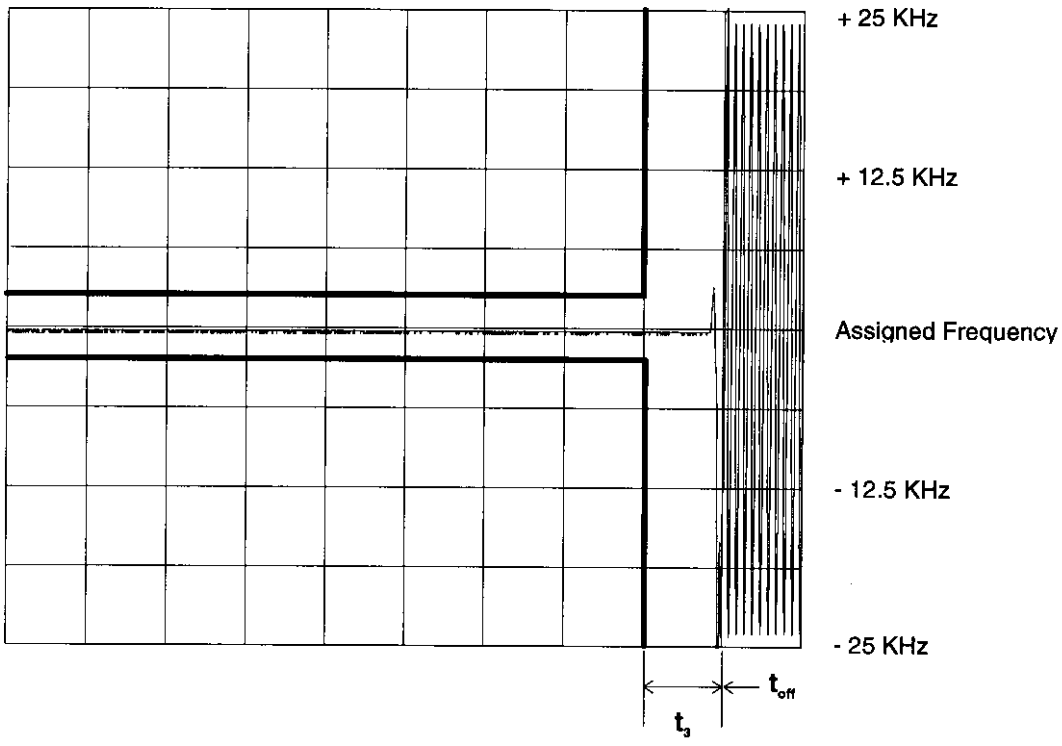
TYPE OF UNIT:	UHF-FM Handheld Transceiver
FCC ID:	AIERIT06-450
DATE:	December 2, 1998

SWITCH ON CONDITION t_3 and t_{OFF}



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