

TYPE OF EXHIBIT: TEST REPORT
FCC PART: 2.1033 (b)(6)(9)
MANUFACTURER: RITRON, INC.
 505 West Carmel Drive
 Carmel, IN 46032
FCC ID: AIERIT27-450
MODELS: LM-U450, LPA-U450
DATE: September 17, 2007

IC STANDARDS:	RSS-GEN, Issue 2, Section 3.2 (b)(j)
INDUSTRY CANADA:	1084A-RIT27450
MODELS:	LM-U450-CANADA, LPA-U450-CANADA

Following is a list of attached exhibits required by the Federal Communications Commission for the application to and grant of FCC Certification.

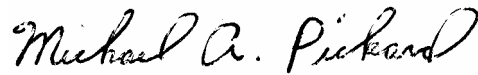
<u>Exhibit</u>	<u>FCC part</u>	<u>IC Standard</u>
Statement of Certifying Engineer	2.947	NA
List of Test Equipment Used	2.947(d)	RSS-GEN, Issue 2, 3.2(b)
Required Measurements	2.1033(b)(6)	RSS-GEN, Issue 2, 2.2.1
Receiver Spurious Emissions	15.111(a)	RSS-GEN, Issue 2, Section 4.10 RSS-GEN, Issue 2, 6(b)

TYPE OF EXHIBIT: STATEMENT OF CERTIFYING ENGINEER
FCC PART: 2.947
MANUFACTURER: RITRON, INC.
505 West Carmel Drive
Carmel, IN 46032
FCC ID: AIERIT27-450
MODELS: LM-U450, LPA-U450
DATE: September 17, 2007

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 hereby certify that all measurements and data 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 - Project Engineer

TYPE OF EXHIBIT: TEST EQUIPMENT LIST
FCC PART: 2.947(d)
MANUFACTURER: RITRON, INC.
505 West Carmel Drive
Carmel, IN 46032
FCC ID: AIERIT27-450
MODELS: LM-U450, LPA-U450
DATE: September 17, 2007

IC STANDARDS:	RSS-GEN, Issue 2, 3.2(b)
INDUSTRY CANADA:	1084A-RIT27450
MODELS:	LM-U450-CANADA, LPA-U450-CANADA

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.

<u>ITEM</u>	<u>MANUFACTURER</u>	<u>MODEL NO.</u>	<u>SERIAL NO.</u>
Spectrum Analyzer	Hewlett-Packard	8560E	3720A02980
Power Supply	BK/Precision	1630	146-03508
Digital VOM	Micronta	22-191	N/A
Dipole Antenna	Electro-Metrics	BDA-25	8-101
Log Periodic Antenna	Electro-Metrics	LP-25	8-102

TYPE OF EXHIBIT: RECEIVER SPURIOUS EMISSIONS
FCC PART: 15.111(a)
MANUFACTURER: RITRON, INC.
505 West Carmel Drive
Carmel, IN 46032
FCC ID: AIERIT27-450
MODELS: LM-U450, LPA-U450
DATE: September 17, 2007

IC STANDARD:	RSS-GEN, Issue 2, Section 4.10 RSS-GEN, Issue 2, 6(b)
CANADA:	1084A-RIT27450
MODELS:	LM-U450-CANADA, LPA-U450-CANADA

PROCEDURE:

1. The LM-U450 receiver was aligned for operation on 460.050 per the tune-up procedure outlined in the Preliminary Maintenance Manual. The radio's 50 Ω BNC antenna was connected to the 50 Ω input of the Hewlett-Packard Model 8560E Spectrum Analyzer used to measure receiver spurious emissions. Power was supplied to the LM-U450 through P504. The supply voltage was set at +12 VDC, the nominal input voltage.
2. The Hewlett-Packard Model 8560E Spectrum Analyzer was set for:
 - 100 kHz resolution bandwidth
 - 100 Hz video bandwidth
 - 10 MHz span
3. The spectrum was searched:
from 14.4 MHz, the VCO reference oscillator
to 1250 MHz, the 3rd harmonic of the receiver 1st local oscillator
4. Spurious emissions were recorded on the following table.
5. Steps 1, 2, 3 and 4 were repeated at 450.050 MHz and 470.050 MHz, the receiver band edges.

Receive Frequency (MHz)	Emission Frequency (MHz)	Measured Amplitude (dBm)	Measured Amplitude (nW)	IC Limit (nW)	Description
450.050	406.400	-67.7	0.171	2.000	1 st Local Oscillator
460.050	416.400	-66.0	0.251	2.000	1 st Local Oscillator
470.050	426.400	-61.7	0.680	2.000	1 st Local Oscillator

Certifying Engineer:


Michael A. Pickard - Project Engineer

TYPE OF TEST: FIELD STRENGTH OF RADIATED EMISSIONS
FCC PART: 15.109(f)
MANUFACTURER: RITRON, INC.
505 West Carmel Drive
Carmel, IN 46032
FCC ID: AIERIT27-450
MODELS: LM-U450, LPA-U450
DATE: September 26, 2007

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.

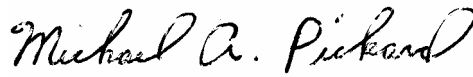
1. The LM-U450 was programmed to receive on 460.050 MHz, the middle of the operating band.
2. An AFB-1545 antenna that is included with each LM-U450 was installed at the antenna port.
3. All field strength measurements were made with the Hewlett-Packard Model 8560E Spectrum Analyzer and the appropriate antenna for the frequency being measured. 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
4. For each emission, the height and polarization of the field strength measuring antenna and orientation of the LM-U450 were varied to provide maximum field strength.
5. The spectrum was searched from 30 MHz up to the 2nd harmonic of the receiver 1st local oscillator per FCC Part 15.33(b)(3).
6. The LM-U450 was then programmed to receive at the band edges (450.050 MHz and 470.050 MHz) and test measurements were repeated as described above.

RESULTS:

For all 3 test frequencies, all emissions were better than the noise of the spectrum analyzer at -109 dBm. This translates to a field strength < 8 μ V/m at 3 meters for the antennas used.

Receive Frequency (MHz)	Emission Frequency (MHz)	Measured Amplitude (dBm)	Field Strength (μ V/m)	FCC Limit (μ V/m)	Description
450.050	406.400	< -109 dBm	< 8	200	1 st Local Oscillator
460.050	416.400	< -109 dBm	< 8	200	1 st Local Oscillator
470.050	426.400	< -109 dBm	< 8	200	1 st Local Oscillator

Certifying Engineer:


Michael A. Pickard - Project Engineer