Nemko Test Report:	28522RUS1
Applicant:	TeleAlarm SA Rue du Pont 23 La Chaux-de-Fonds CH-2300 Switzerland
Equipment Under Test: (E.U.T.)	MIYRAC
FCC Identifier:	W9N-MIYRAC
In Accordance With:	**FCC Part 15, Subpart C and RSS 210, Issue 7** For Low Power Transmitters Operating Periodically In The Band 40.66 - 40.77 MHz And Above 70 MHz
Tested By:	Nemko USA, Inc. 802 N. Kealy Lewisville, TX 75057-3136

TESTED BY: _____ **DATE:** **12 June 2009**

David Light, Senior Wireless Engineer

APPROVED BY: _____ **DATE:** **12 June 2009**

Tom Tidwell, Telecom Direct

Total Number of Pages: 17

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Section 1. Summary of Test Results

Manufacturer: TeleAlarm SA

Model No.: MIYRAC

Serial No.: 12340002 (original sample); 12340001 (continuous mode)

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C, Paragraph 15.231 and RSS 210, Issue 7. All tests were conducted using measurement procedure ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC and Industry Canada.

☒ New Submission ☒ Production Unit

☐ Class II Permissive Change ☐ Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.
See " Summary of Test Data".

NVLAP Lab Code 100426-0

Summary Of Test Data

Name of Test	Paragraph No.	Results
Transmission Requirements	15.231(a), RSS 210 A1.1.1	Complies
Radiated Emissions	15.231(b), RSS 210 A1.1.2	Complies
Occupied Bandwidth	15.231(c), RSS 210 A1.1.3	Complies
Frequency Tolerance	15.231(d), RSS 210 A1.1.4	NA
Alternate Field Strength Requirements	15.231(e), RSS 210 A1.1.5	NA
Powerline Conducted Emissions	15.207, RSS GEN 6.6	NA

Footnotes:

1) The radio does not operate in the 40.66-40.70 MHz band
2) The radio is battery powered.

Section 2. Equipment Under Test (E.U.T.)

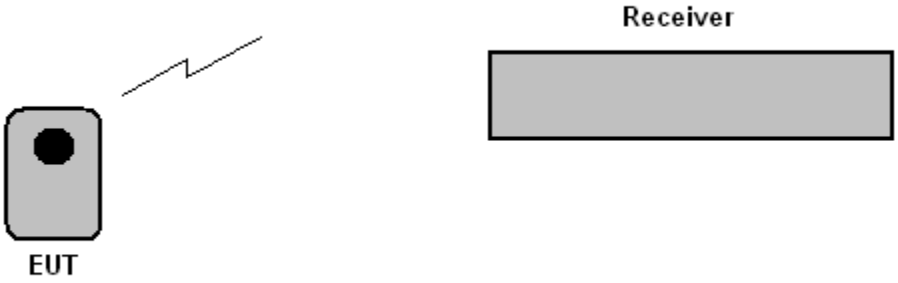
General Equipment Information

Frequency Range:	434.01 MHz
Operating Frequency(ies) of Sample:	434.01 MHz
Type of Emission:	FSK
Emission Designator:	F1D
Supply Power Requirement:	3 Vdc battery
Duty Cycle Correction Factor:	None

Description of E.U.T.

The Wireless Contact RAC (called RAC thereafter) can be used for transmission of particular events.
To use as a transmitter for particular events, the alarm can be activated by approaching and/or moving away a magnet, or by the opening and/or closing of an electrical contact. In this case, the alarm is immediately transmitted by the NurseCall system.

System Diagram



Section 3. Transmission Requirements

NAME OF TEST: Transmission Requirements	PARA. NO.: 15.231(a) RSS 210 A1.1.1
TESTED BY: David Light	DATE: 12 June 2009

Minimum Standard:

15.231(a) Continuous transmissions such as voice, video or data transmissions are not permitted.

15.231(a)(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds after being released.

15.231(a)(2) A transmitter activated automatically shall cease transmission within 5 seconds of activation.

15.231(a)(3) Periodic transmissions at regular pre-determined intervals are not permitted. However polling or supervisory transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

15.231(a)(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm.

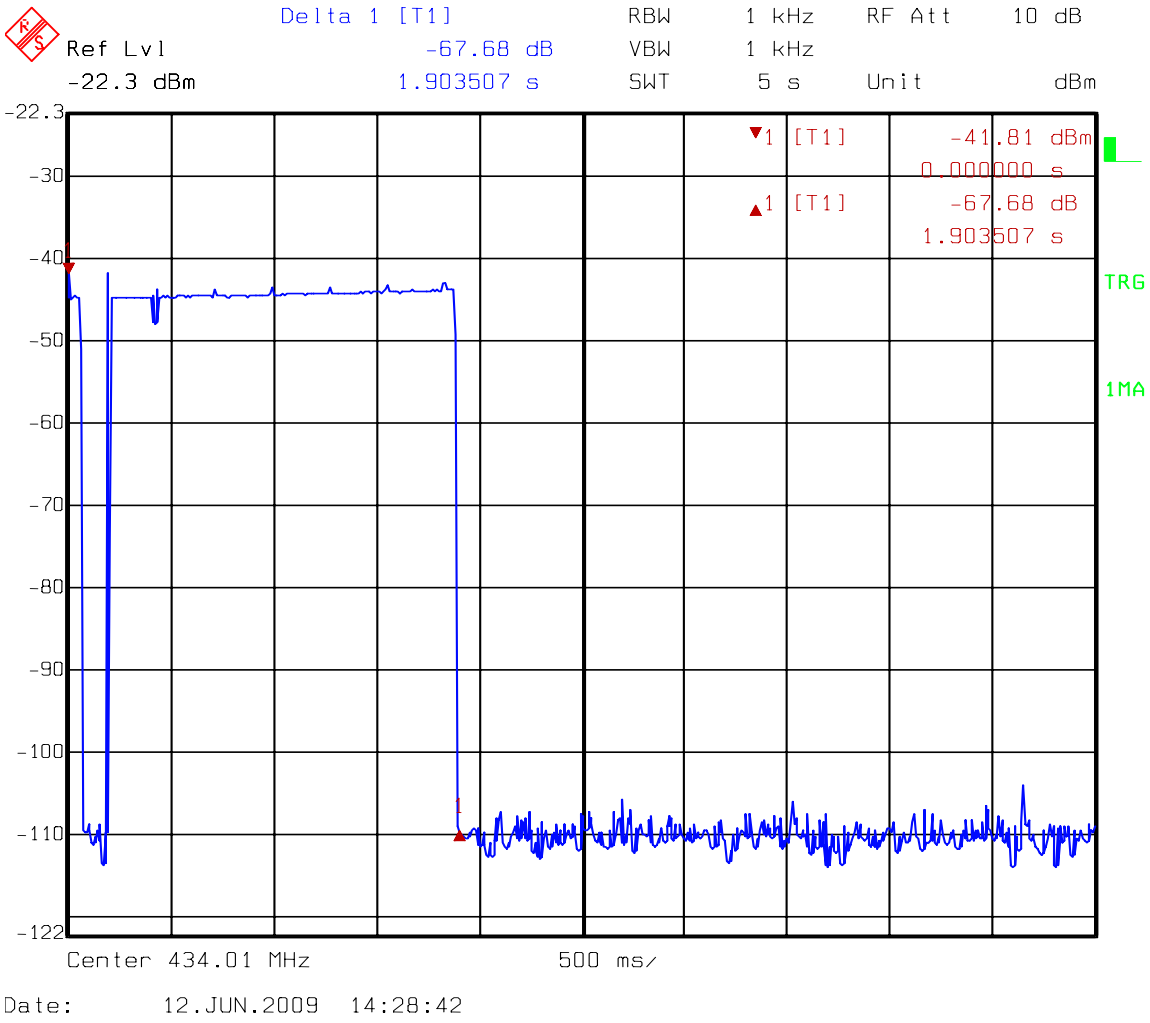
Test Results: Complies.

Test Data: Compliance was determined by verification of technical specifications and a functional test on the equipment.

Rationale for Compliance with Transmission Requirements

15.231(a)(1) **15.231(a)(2) :**	☐ Manual activation ☒ Automatic activation	TX deactivation time: 3 sec.
15.231(a)(3) :	☐ Regular, predetermined transmissions ☒ Polling or supervisory transmissions	TX rate and duration: 1.7 sec. in 24 hours
15.231(a)(4) :	☒ Alarm device operating during the pendancy of alarm condition ☐ Non-alarm device	

Test Data – Transmission Requirements



Test Equipment: 1036-1082-802

Section 4. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: 15.231(b) RSS 210 A1.1.2
TESTED BY: David Light	DATE: 12 June 2009

Minimum Standard:

Permissible Field Strength Limits (Momentarily Operated Devices

Fundamental Frequency (MHz)	Field Strength of Fundamental Microvolts/Meter at 3 meters; (watts)	Field Strength of Unwanted Emissions Microvolts/Meter at 3 meters; (watts)
40.66 - 40.70	2,250	225
70-130	1, 250	125
130-174	1,250 to 3,750*	125 to 375
174-260 (note 1)	3,750	375
260-470 (note 1)	3,750 to 12,500*	375 to 1,250
Above 470	12,500	1,250

Notes:

# Use quasi-peak or averaging meter. ** Linear interpolation with frequency F in MHz*	*For 130 - 174 MHz: FS (microvolts/m) = (56.82 x F) - 6136* *For 260 - 470 MHz: FS (microvolts/m) = (41.67 x F) - 7083*

Any emissions that fall within the restricted bands of 15.205 shall not exceed the following limits:

Frequency (MHz)	Field Strength (μV/m @ 3m)	Field Strength (dB @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test Results: Complies. The worst-case emission level is 78.1 dBμV/m @ 3m at 434.01 MHz. This is 2.7 dB below the specification limit.

Test Data: See attached table.

Above 1 GHz a spectrum analyzer and low noise amplifier are used to measure emission levels. The spectrum analyzer resolution bandwidth was set to 1 MHz and video bandwidth was 3 MHz.

In the case of handheld equipment, the E.U.T. is rotated in three planes to obtain worst-case results.

Test Data - Radiated Emissions

Meas. Freq. (MHz)	Ant. Pol. (H/V)	Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. limit (dBuV/m)	CR/SL Diff. (dB)	Pass Fail Unc.	Comment
434	V	0	58.5	17	2.6	0.0	78.1	80.8	-2.7	Pass	Carrier
434	H	0	58.2	17	2.6	0.0	77.8	80.8	-3.0	Pass	Carrier
868	V	0	50.8	23	3.7	33.8	43.7	60.8	-17.1	Pass	
868	H	0	42.5	23	3.7	33.8	35.4	60.8	-25.4	Pass	
1302	H	0	36.2	24.8	3.0	33.8	30.2	54.0	-23.8	Pass	Noise floor
1736	H	0	38.7	24.8	3.0	34.3	32.2	60.8	-28.6	Pass	Noise floor
2170.1	H	0	40	28.6	3.3	34.3	37.6	60.8	-23.2	Pass	Noise floor
2604.1	H	0	40.9	28.9	3.5	34.3	39.0	60.8	-21.8	Pass	Noise floor
3038.1	H	0	35	29.9	4.0	34.4	34.5	60.8	-26.3	Pass	Noise floor
3472.1	H	0	36.1	29.8	4.3	34.4	35.8	60.8	-25.0	Pass	Noise floor
3906.1	H	0	36.9	31.4	4.3	34.5	38.1	54.0	-15.9	Pass	Noise floor
4340.1	H	0	33.9	32.2	5.2	34.5	36.8	54.0	-17.2	Pass	Noise floor
1302	V	0	36.2	24.8	3.0	33.8	30.2	54.0	-23.8	Pass	Noise floor
1736	V	0	38.7	24.8	3.0	34.3	32.2	60.8	-28.6	Pass	Noise floor
2170.1	V	0	40	28.6	3.3	34.3	37.6	60.8	-23.2	Pass	Noise floor
2604.1	V	0	40.9	28.9	3.5	34.3	39.0	60.8	-21.8	Pass	Noise floor
3038.1	V	0	35	29.9	4.0	34.4	34.5	60.8	-26.3	Pass	Noise floor
3472.1	V	0	36.1	29.8	4.3	34.4	35.8	60.8	-25.0	Pass	Noise floor
3906.1	V	0	36.9	31.4	4.3	34.5	38.1	54.0	-15.9	Pass	Noise floor
4340.1	V	0	33.9	32.2	5.2	34.5	36.8	54.0	-17.2	Pass	Noise floor

1) The spectrum was searched from 30 MHz to 5 GHz.
2) The device was tested with a fresh battery.
3) The device was tested on three axis'.
4) All readings are PEAK unless otherwise stated.

Analyzer Settings: <1000 MHz: RBW=VBW=100 kHz, Peak detector
>1000 MHz: RBW=VBW=1 MHz, Peak detector

Test Distance: 3 meters

Test Equipment: 1763-1304-1767-1783

Section 5. Occupied Bandwidth

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 15.231(c) RSS 210 A1.1.3
TESTED BY: David Light	DATE: 12 June 2009

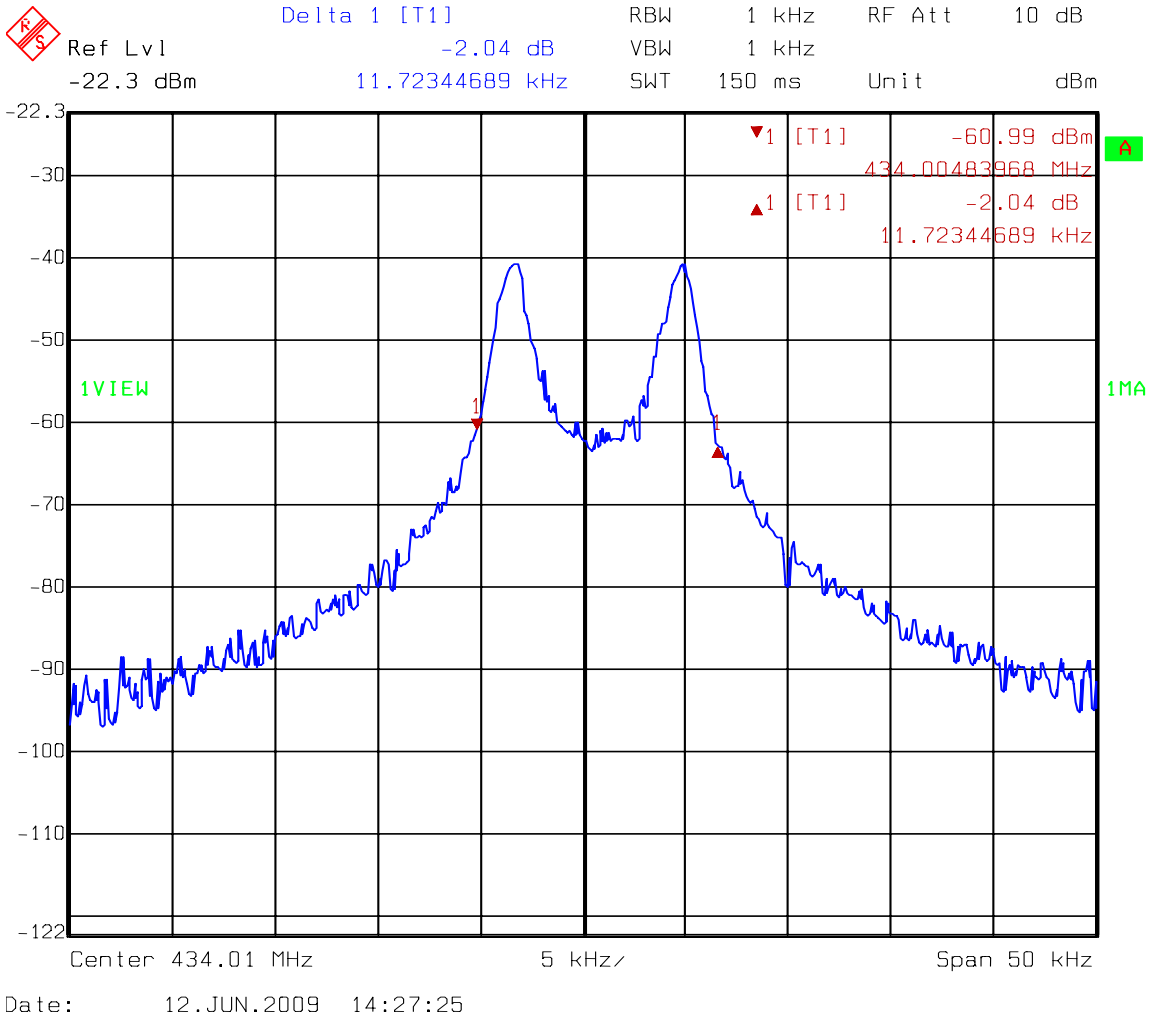
Minimum Standard: 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test Results: Complies. See attached graph.

Test Data: See attached graph.

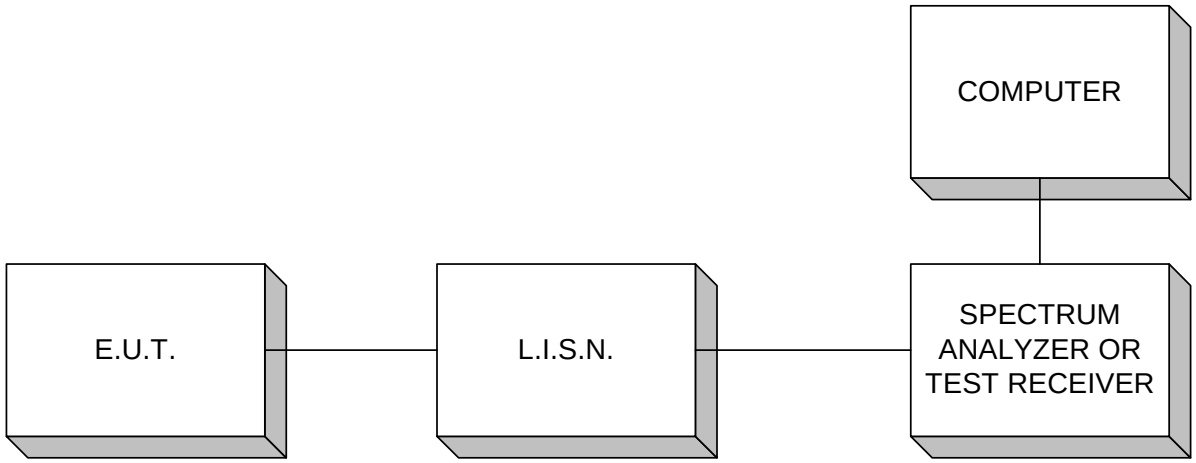
Test Equipment: 1036-802-1082

Test Data – Occupied Bandwidth

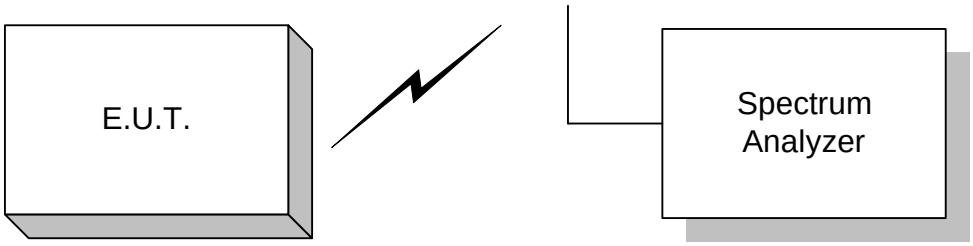


Section 6. Block Diagrams

Conducted Emissions



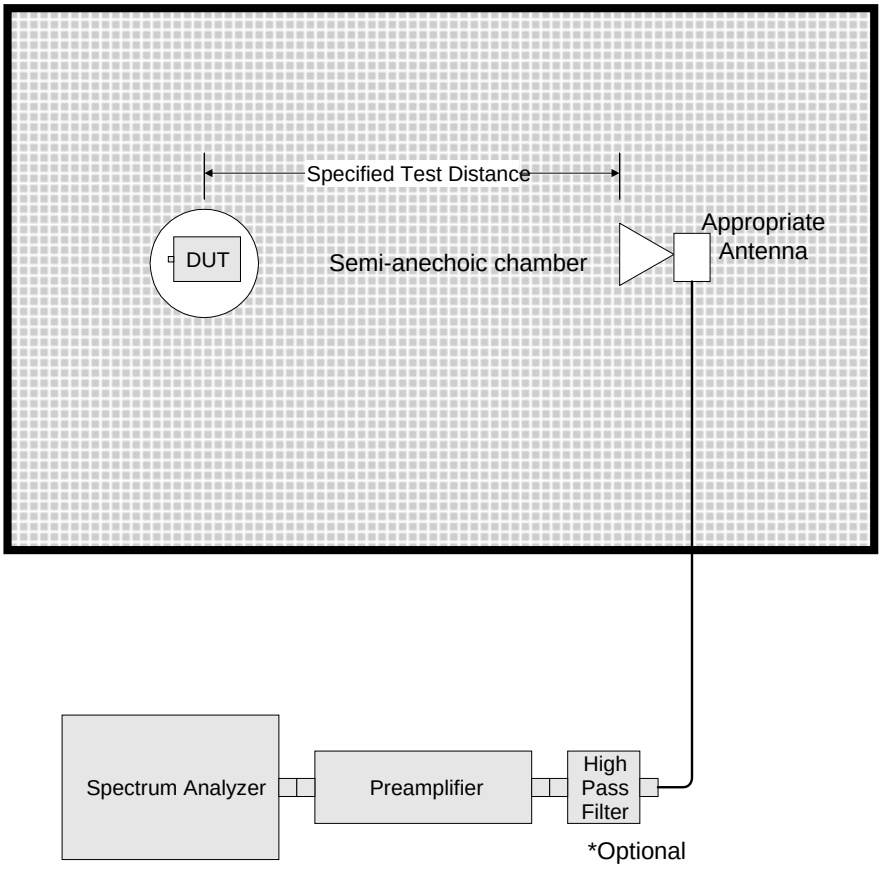
Occupied Bandwidth, Duty Cycle



Outdoor Test Site For Radiated Emissions

Radiated Emissions 30 MHz – 26.5 GHz

The spectrum was searched up to the 10th harmonic of the fundamental frequency of operation.



Section 7. Test Equipment List

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1036	SPECTRUM ANALYZER	ROHDE & SCHWARZ FSEK30	830844/006	01/19/09	01/20/11
1082	CABLE 2m	Astrolab 32027-2-29094-72TC	N/A	CBU	N/A
802	Near Field Probe Set	EMCO 7405	103	N/A	N/A
1763	Bilog Antenna	Schaffner CBL 6111D	22926	11/04/08	11/04/09
1304	HORN ANTENNA	ELECTRO METRICS RGA-60	6151	09/09/08	09/10/10
1783	Cable	Nemko? 0	0	06/12/08	06/12/09
1767	EMI Test Receiver 20Hz - 26.5 GHz	ROHDE & SCHWARZ ESIB26	837491/0002	09/20/07	09/20/09

ANNEX A - RESTRICTED BANDS

Annex A Restricted Bands of Operation

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.15
0.49 - 0.51	16.69475-16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425-16.80475	960-1240	7.25-7.75
3.020 - 3.026	25.5-25.67	1300-1427	8.025-8.5
4.125 - 4.128	37.5-38.25	1435-1626.6	9.0-9.2
4.17725 - 4.17775	73-74.6	1645.5-1646.5	9.3-9.5
4.20725 - 4.20775	74.8-75.2	1660-1710	10.6-12.7
6.215 - 6.218	108-121.94	1718.8-1722.2	13.25-13.4
6.31175 - 6.31225	123-138	2220-2300	14.47-14.5
8.291 - 8.294	149.9-150.05	2310-2390	15.35-16.2
8.362 - 8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625 - 8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425 - 8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29 - 12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975 - 12.52025	240-285	3345.8-3358	36.43-36.5
12.57675 - 12.57725	322-335.4	3600-4400	Above 38.6
13.36 - 13.41			