ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS

for

UNINTENTIONAL RADIATOR

AUTO ALARM SYSTEM RECEIVER

MODEL: AARS5CS

FCC ID: ELVAR0A

REPORT NO: 00E8948

DATE:SEPTEMBER 22, 2000

Prepared for
NUTEK CORPORATION
5F, NO. 3, ALLEY 6, LANE 45,
PAO-HSING ROAD, HSIN TIEN, TAIPEI,
TAIWAN, R.O.C.

Prepared by
COMPLIANCE ENGINEERING SERVICES, INC.

d.b.a.
COMPLIANCE CERTIFICATION SERVICES
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NVLAP ®

LAB CODE: 200065-0

COMPLIANCE
Certification Services

FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TÜV, BCIQ, DHHS, NVLAP

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TEST DATA
- Fundamental Frequency Plot
- Radiated Emission Data

1. VERIFICATION OF COMPLIANCE

COMPANY NAME : NUTEK CORPORATION
          5F, NO. 3, ALLEY 6, LANE 45, PAO-HSING ROAD
          HSIN TIEN, TAIPEI, TAIWAN, R. O. C..

CONTACT PERSON : RUBY HSIEH

TELEPHONE NO. : (886-02)2918-9478

EUT DESCRIPTION : AUTO ALARM SYSTEM RECEIVER

MODEL NAME/NUMBER : AARS5CS

FCC ID : ELVAR0A

DATE TESTED : SEPTEMBER 16, 2000

REPORT NUMBER : 00E8948

TYPE OF EQUIPMENT	SECURITY EQUIPMENT (UNINTENTIONAL RADIATOR)
EQUIPMENT TYPE	433 MHz SUPERREGENERATE RECEIVER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.109

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in CFR 47, PART 15. This said equipment in the configuration described in this report shows that maximum emission levels emanating from equipment are within the compliance requirements.

Rick yeo

RICK YEO / EMC MANAGER
COMPLIANCE ENGINEERING SERVICES, INC.

2.   PRODUCT DESCRIPTION

ADVANCE SECURITY INC., Model AARS5CS is the receiving portion of a multi-purpose security device. The associated Transmitter is manufactured by Advance Security Inc. Model No: 6906, FCC ID: H5OT11.

3.   TEST FACILITY

The 3 meter open area test site and conducted measurement facility used to collect the radiated data is located at 561F Monterey Road, Morgan Hill, California, U.S.A. A detailed description of the test facilities was submitted to the Commission on May 27, 1994.

The measuring instrument which was utilized in performing the tests documented herein has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment which is traceable to recognized national standards.

4.   MEASUREMENT EQUIPMENT USED

Manufacturer	Model Number	Description	Cal Due Date
R&S	SMY 02	Signal Generator (9 KHz – 2.08 GHz)	01/2001
H.P.	8595EM	Spectrum Analyzer (9 KHz – 6.5 GHz)	01/2001
EMCO	3142	Antenna (30-2000 MHz)	06/2001
T.E.C.	PA-102	Preamplifier (0.1 - 2000 MHz)	05/2001
EMCO	3115	Antenna(1 – 18 GHz)	09/2001
MITEQ	NSP2600-44	Preamplifier (1 - 26.5 GHz)	12/2000

5.   TEST CONFIGURATION

Set frequency generator to 433 MHz. EUT receiving transmission continuously. All the wires are placed on the turn table to their maximum length to simulate the worse emission conditions.

6.   TESTS CONDUCTED

CFR 47, 15.109 RADIATED EMISSION TESTS	CONDUCTED AT 3 METERS

7. RADIATED EMISSION TEST PROCEDURE

The EUT and all other support equipment are placed on a wooden table 80 cm above the ground screen. Antenna to EUT distance is 3 meters. During the test, the table is rotated 360 degrees to maximize emissions and the antenna is positioned from 1 to 4 meters above the ground screen to further maximize emissions. The antenna is polarized in both vertical and horizontal positions.

Monitor the frequency range of interest at a fixed antenna height and EUT azimuth. Frequency span should be small enough to easily differentiate between broadcast stations and intermittent ambients. Rotate EUT 360 degrees to maximize emissions received from EUT. If emission increases by more than 1 dB, or if another emission appears that is greater by 1 dB, return to azimuth where maximum occurred and perform additional cable manipulation to further maximize received emission.

Move antenna up and down to further maximize suspected highest amplitude signal. If emission increased by 1 dB or more, or if another emission appears that is greater by 1dB or more, return to antenna height where maximum signal was observed and manipulate cables to produce highest emissions, noting frequency and amplitude.

8.   COHERENT TESTS

During Radiated Emission Tests, R&S signal generator model no: SMY 02 (9K – 2.08G Hz) was used to radiate unmodulated CW signal to EUT at 433 MHz. Please refer to radiated radiate emission plots and data for the highest readings.

9.   EQUIPMENT MODIFICATIONS

To achieve compliance to FCC section 15.109, the following   change(s) were made during compliance testing:

NOT APPLICABLE

10. TEST CONFIGURATION PHOTOS (Radiated Emission Test)

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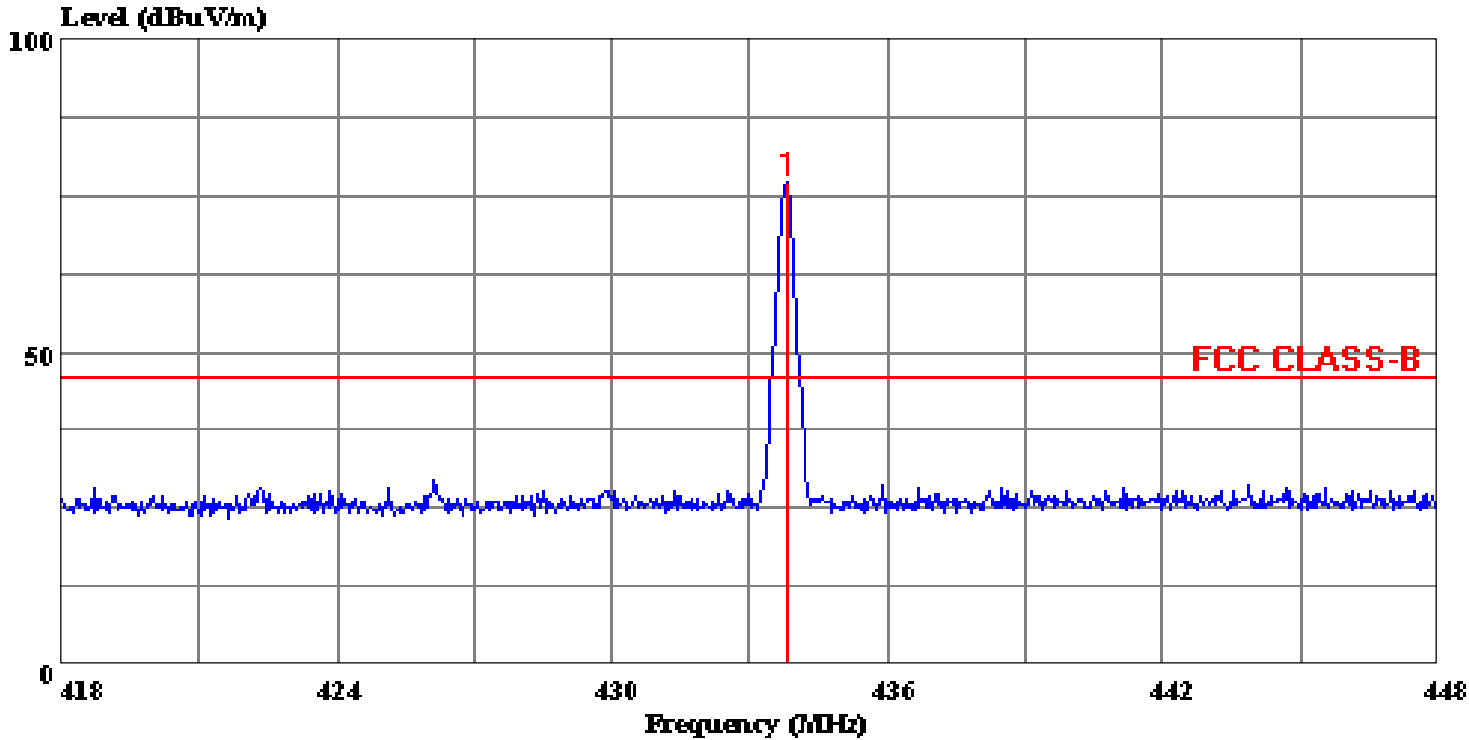
(CCS D-Site)

Trace: 2   Ref Trace:

Condition: HORIZONTAL
Report No. : 00E8948
Test Engr. : VINCE CHIANG
Company   : NUTEK
EUT   : 434MHz CAR ALARM RX
Test Config : EUT/POWER SUPPLY/SIGNAL GENERATOR
Type of Test: FCC CLASS B
Mode of Op. : RX

                                                        Page: 1

          Freq Level
        ──────── ──────
          MHz   dBuV/m

  1 * 433.810 77.04

COMPLIANCE
Engineering Service, Inc.
FCC,VCCI,CISPR,CC
UL,CSA,TUV

No. 199, Chung Sheng Road,
Hsin Tien City, Taipei,
Taiwan, R.O.C.
Tel:02-2217-0894 Fax:02-2217-1254

Data#: 3   File#: 8948d.emi   Date: 2000-09-16 Time: 11:57:30

(CCS D-Site)

Trace: 2   Ref Trace:

Condition: HORIZONTAL
Report No. : 00E8948
Test Engr. : VINCE CHIANG
Company   : NUTEK
EUT   : 434MHz CAR ALARM RX
Test Config : EUT/POWER SUPPLY/SIGNAL GENERATOR
Type of Test: FCC CLASS B
Mode of Op. : RX

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	Freq	Read Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	419.980	28.41	17.35	2.45	21.31	26.90	46.00	-19.10	Peak
2	422.320	29.58	17.37	2.45	21.31	28.09	46.00	-17.91	Peak
3	426.130	30.82	17.42	2.45	21.31	29.38	46.00	-16.62	Peak
4	429.850	29.22	17.46	2.52	21.30	27.91	46.00	-18.09	Peak
5	435.910	29.66	17.54	2.64	21.27	28.56	46.00	-17.44	Peak
6	438.220	28.74	17.56	2.68	21.26	27.73	46.00	-18.27	Peak

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Engineering Service, Inc.
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No. 199, Chung Sheng Road,
Hsin Tien City, Taipei,
Taiwan, R.O.C.
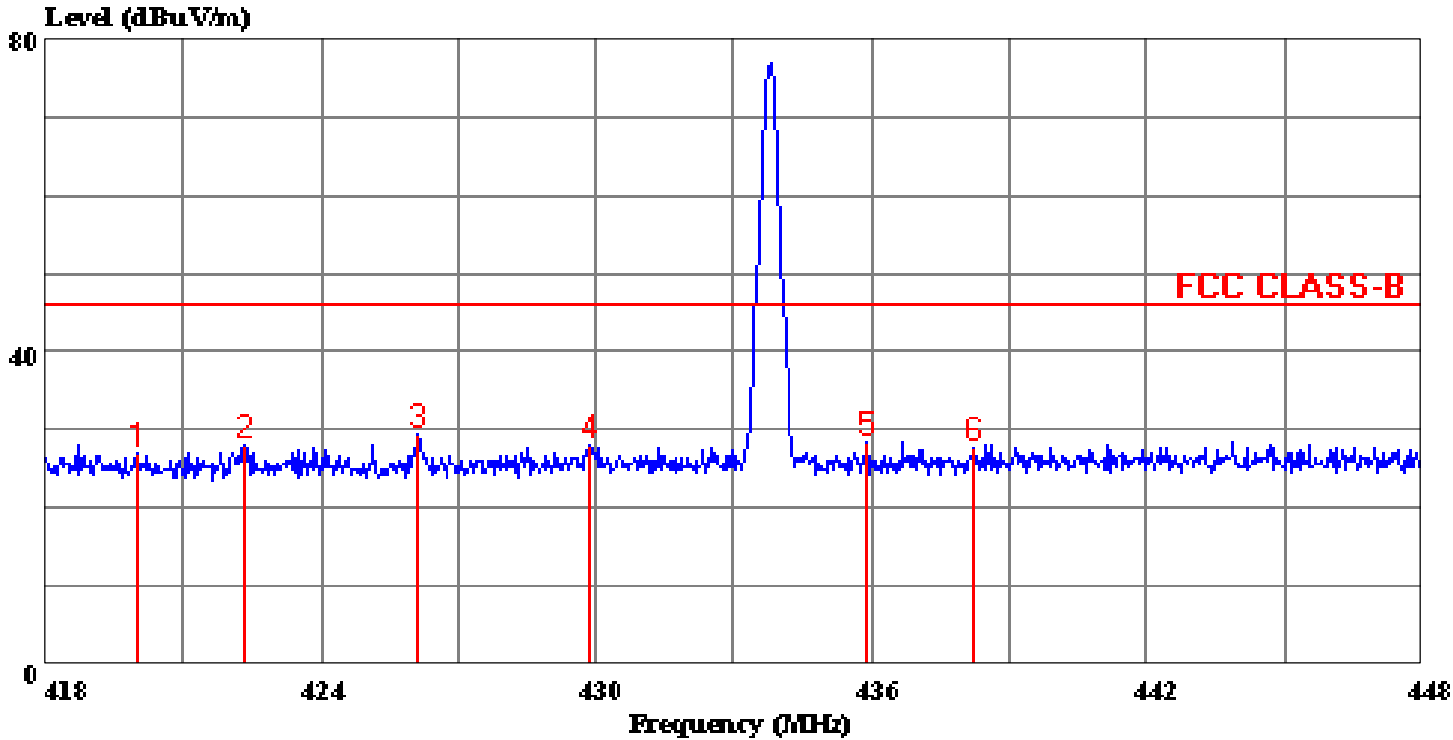Tel:02-2217-0894   Fax:02-2217-1254

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(CCS D-Site)

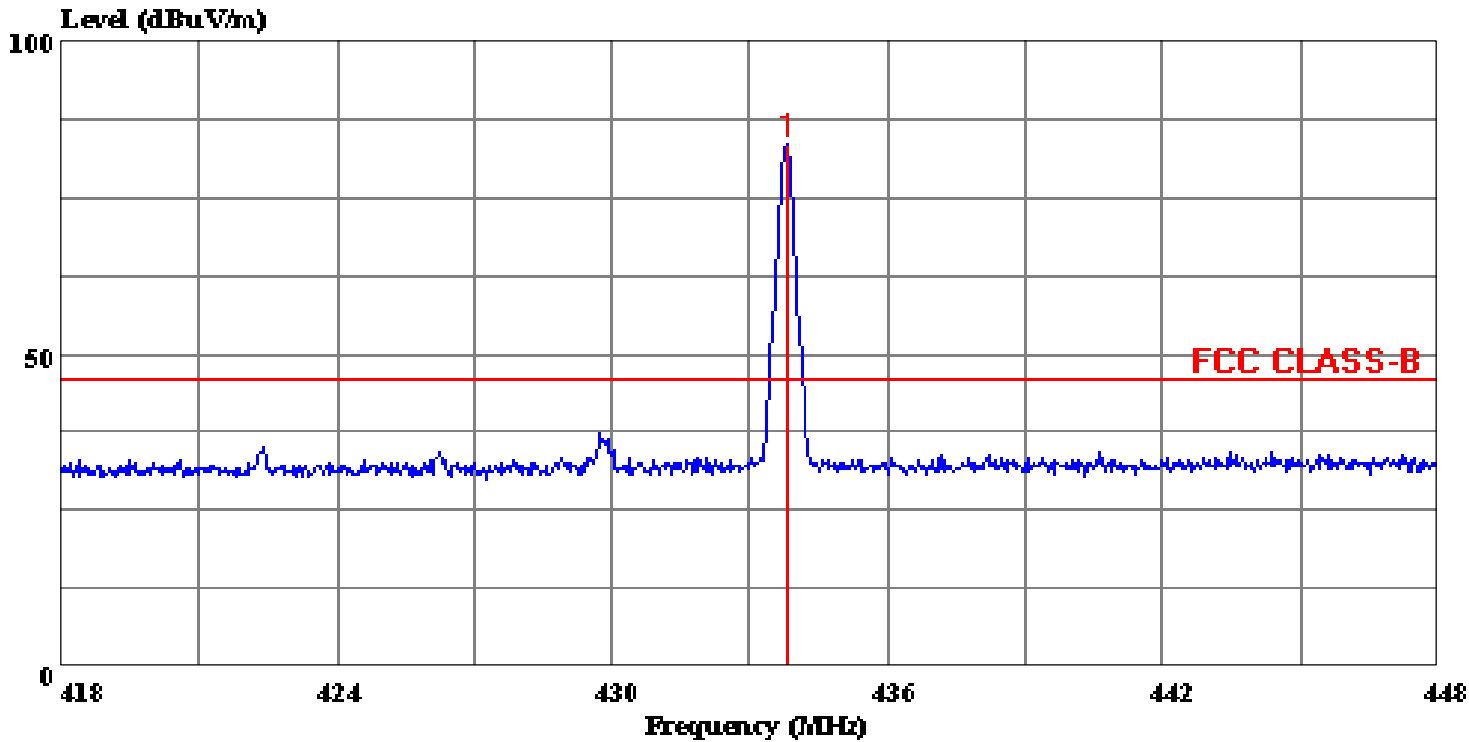Trace: 1   Ref Trace:

```
Condition: VERTICAL
Report No.  : 00E8948
Test Engr.  : VINCE CHIANG
Company     : NUTEK
EUT         : 434MHz CAR ALARM  RX
Test Config : EUT/POWER SUPPLY/SIGNAL GENERATOR
Type of Test: FCC CLASS B
Mode of Op. : RX
```

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Freq	Level
MHz	dBuV/m
1 * 433.810	83.34

Data#: 5   File#: 8948d.emi   Date: 2000-09-16 Time: 12:04:43

(CCS D-Site)

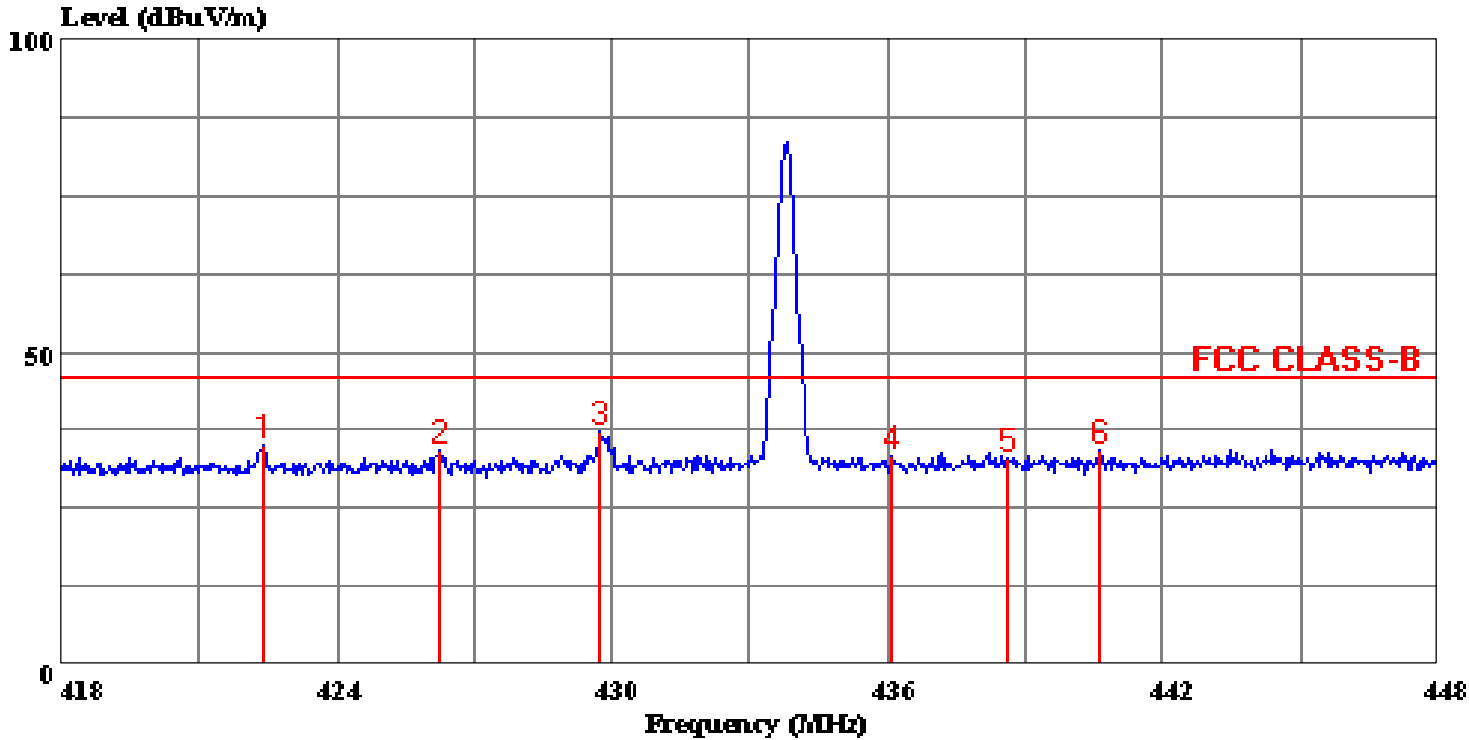Trace: 1   Ref Trace:

Condition: VERTICAL
Report No. : 00E8948
Test Engr. : VINCE CHIANG
Company   : NUTEK
EUT   : 434MHz CAR ALARM RX
Test Config : EUT/POWER SUPPLY/SIGNAL GENERATOR
Type of Test: FCC CLASS B
Mode of Op. : RX/6 Worst Data Readings

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	Freq	Read Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	422.410	36.57	17.37	2.45	21.31	35.08	46.00	-10.92	Peak
2	426.250	35.70	17.42	2.45	21.31	34.26	46.00	-11.74	Peak
3	429.760	38.37	17.46	2.52	21.30	37.05	46.00	-8.95	Peak
4	436.090	34.28	17.54	2.64	21.27	33.19	46.00	-12.81	Peak
5	438.610	34.08	17.57	2.69	21.26	33.08	46.00	-12.92	Peak
6	440.590	34.92	17.59	2.72	21.25	33.98	46.00	-12.02	Peak

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Certification Services

FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

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PHONE: 02-2217-0894   FAX: 02-2217-1254

Project #:	8948D7
Report #:	00E8948
Date& Time:	9/16/2000
Test Engr:	Vince Chiang

Company:	NUTEK
EUT Description:	434MHz CAR ALARM RX
Test Configuration :	EUT/POWER SUPPLY/S. G.
Type of Test:	FCC CLASS B
Mode of Operation:	RX

◉ D-Site   ○ E-Site   6 Worst   Des...

Freq. (MHz)	Reading (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Level (dBuV/m)	Limit FCC_B	Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)	Mark (P/Q/A)
Except the reading fundamental graph, no other emissions were found between 30-2000MHz.											
Total data #: 0											
V.2d											