

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
CERTIFICATION TO FCC PART 15 REQUIREMENTS**

*for*

**UNINTENTIONAL RADIATOR**

**433.92 MHz CAR ALARM RECEIVER**

**MODEL: RST520**

**FCC ID NO: H5OR37**

**REPORT NO: 02T1705-1**

**ISSUE DATE: JUNE 17, 2003**

*Prepared for*

**ADVANCE SECURITY INC.  
3F, 48, TA AN STREET, HSI CHIH CITY  
TAIPEI 114  
TAIWAN**

*Prepared by*

**COMPLIANCE ENGINEERING SERVICES, INC.**

*d.b.a.*

**COMPLIANCE CERTIFICATION SERVICES**

**1366 BORDEAUX DRIVE  
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## 1. VERIFICATION OF COMPLIANCE

COMPANY NAME : ADVANCE SECURITY INC.  
3F, 48, TA AN STREET, HSI CHIH CITY  
TAIPEI 114 TAIWAN

EUT DESCRIPTION : 433.92 MHz CAR ALARM RECEIVER

MODEL NAME/NUMBER : RST520

DATE TESTED : 06/17/2003

TYPE OF EQUIPMENT	SECURITY EQUIPMENT (UNINTENTIONAL RADIATOR)
EQUIPMENT TYPE	433.92 MHz SUPERREGENERATE RECEIVER
MEASUREMENT PROCEDURE	ANSI 63.4 / 2001
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.

Tested By:



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CHIN PANG  
EMC TECHNICIAN  
COMPLIANCE CERTIFICATION SERVICES

Approved & Released By:



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THU CHAN  
SENIOR EMC ENGINEER  
COMPLIANCE CERTIFICATION SERVICES

## 2. PRODUCT DESCRIPTION

The radio frequency car-alarm is a system that it controllers locking(arm) and unlocking(disarm) the door of vehicle by wireless remote controller. This system consists of transmitter and receiver. Model RX50-P60 is the receiving portion of the system. It is designed to operate on a single fixed frequency 433.92 MHz by frequency modulation.

## 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

TEST EQUIPMENTS LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
Quasi-Peak Detector	HP9K - 1GHz	85650A	2521A01038	4/15/03
Spectrum Analyzer	HP100Hz - 1.5GHz	8568A	101236	4/15/03
Spectrum Display	HP	8560A	2314A020604	4/15/03
Pre-Amplifier,25 dB	HP0.1 - 1300MHz	8447D (P5)	2944A06550	8/22/03
Antenna, LP	EMCO200 - 2000MHz	3146	9107-3163	3/30/03
Signal Generator	Rohde & Schwarz	SMY01	DE12311	2/25/05
Spectrum Analyzer	HP	8591A	3009A00791	11/6/03

## 5. TEST CONFIGURATION

Set frequency generator to 434.11 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
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## 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

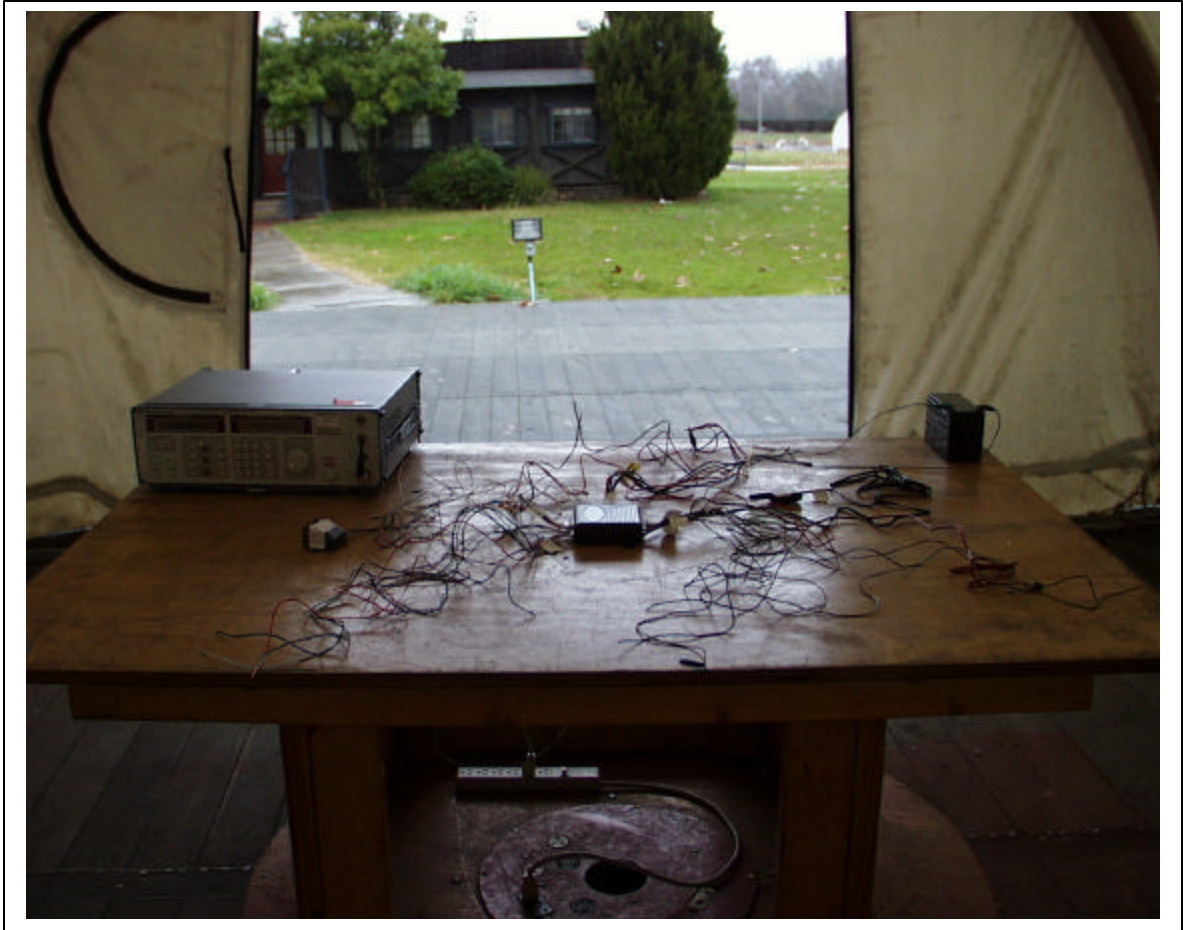
During Radiated Emission Tests, R&S. signal generator model no: SMY01 (0.9-1024MHz ) was used to radiate unmodulated CW signal to EUT at 434.11 MHz. Please refer to radiated emission data no: 030110C2.

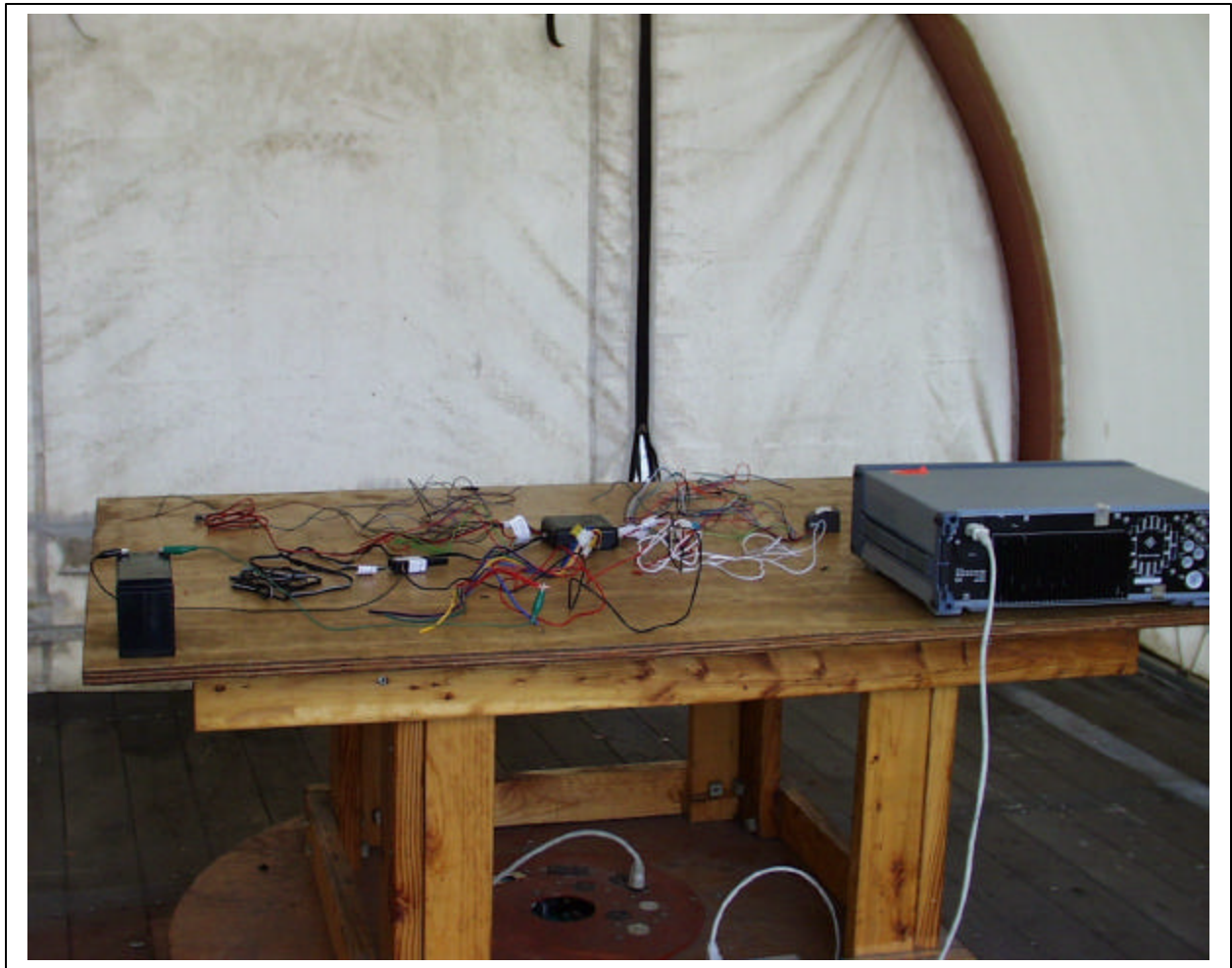
## 9. EQUIPMENT MODIFICATIONS

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)









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

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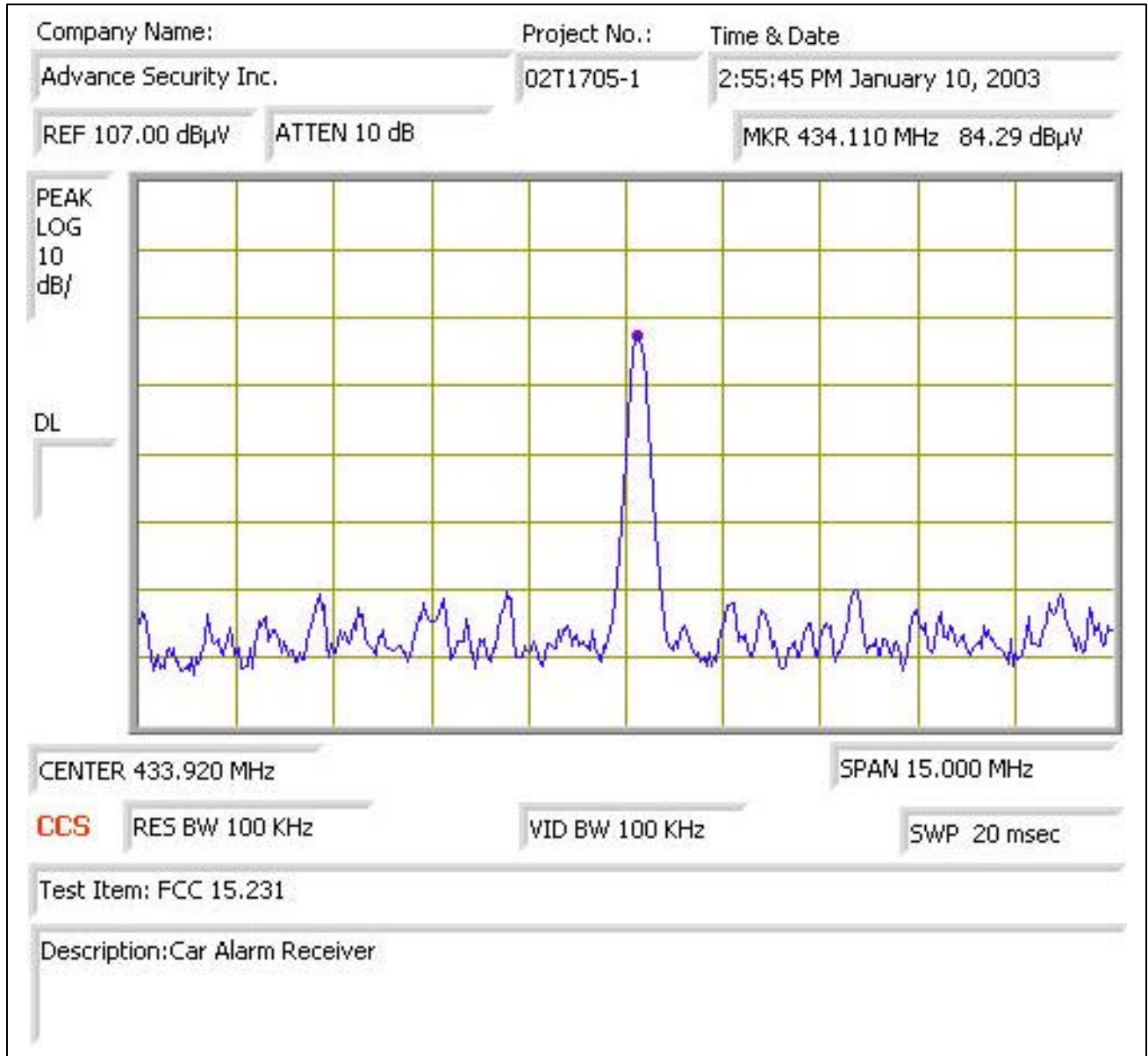
**Project #:** 02T1705-1  
**Report #:** 030110C1  
**Date & Time:** 01/10/03 1:15 PM  
**Test Engr:** Chin Pang

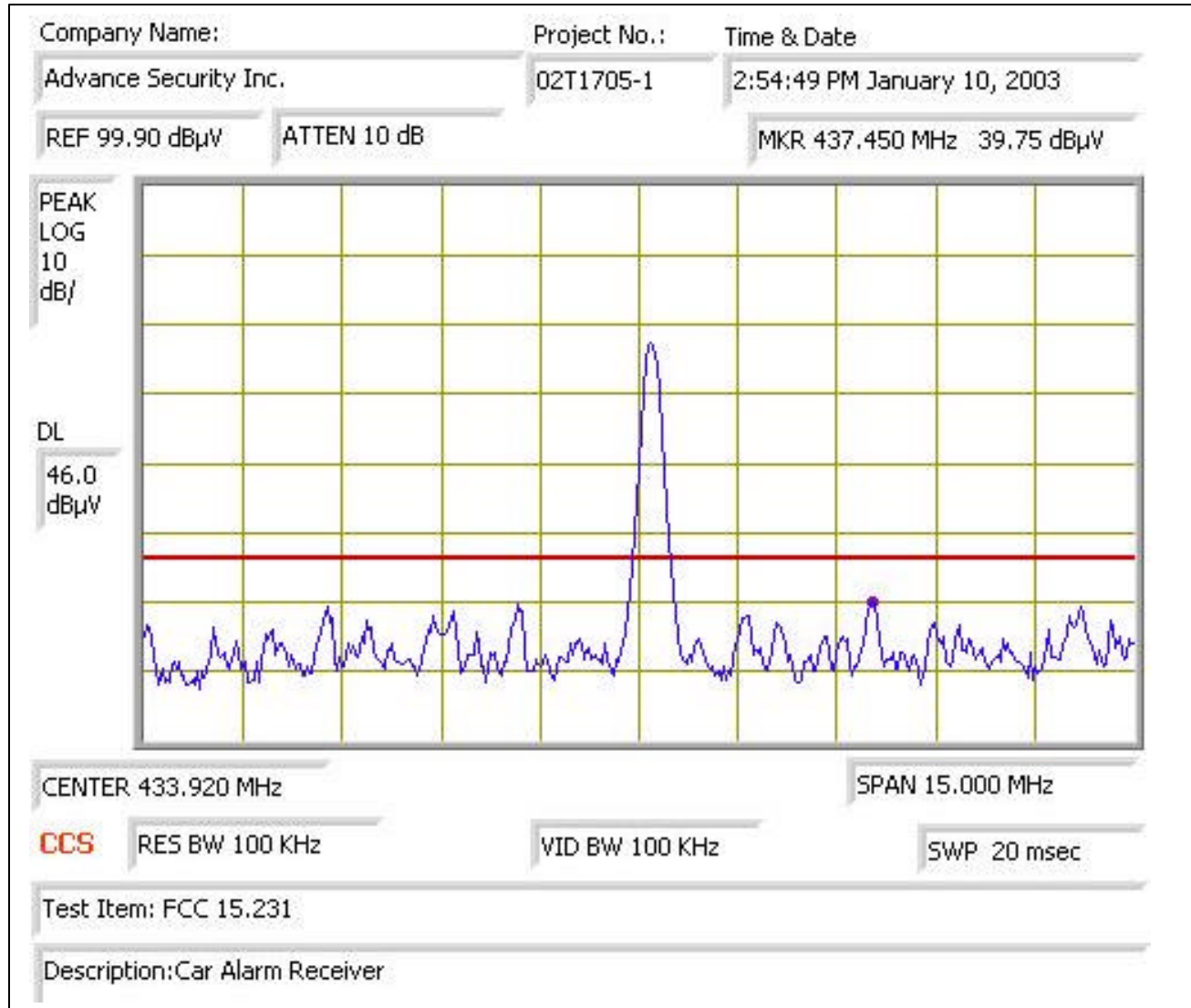
**Company:** Advance Security  
**EUT Description:** Car Alarm Receiver  
**Test Configuration:** EUT Only ( M/N: RST520, FCCID: H5OR37)  
**Type of Test:** FCC 15.109  
**Mode of Operation:** Receiving

A-Site   
  B-Site   
  C-Site   
  F-Site   
 6 Worst Data   
 Descending

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)
433.32	39.28	16.33	3.72	27.27	32.07	46.00	-13.93	3mH	0.00	1.00	P
432.53	39.25	16.31	3.72	27.26	32.02	46.00	-13.98	3mH	0.00	1.00	P
431.78	39.10	16.29	3.71	27.26	31.85	46.00	-14.15	3mH	0.00	1.00	P
434.93	39.30	16.37	3.73	27.27	32.13	46.00	-13.87	3mH	0.00	1.00	P
435.60	39.10	16.39	3.73	27.28	31.95	46.00	-14.05	3mH	0.00	1.00	P
436.47	39.10	16.41	3.74	27.28	31.97	46.00	-14.03	3mH	0.00	1.00	P
432.50	45.60	16.31	3.72	27.26	38.37	46.00	-7.64	3mV	0.00	1.20	P
431.15	44.80	16.28	3.71	27.26	37.53	46.00	-8.47	3mV	0.00	1.20	P
429.50	45.80	16.24	3.70	27.25	38.49	46.00	-7.51	3mV	0.00	1.20	P
435.31	44.23	16.38	3.73	27.28	37.07	46.00	-8.93	3mV	0.00	1.20	P
435.98	43.60	16.40	3.73	27.28	36.46	46.00	-9.54	3mV	0.00	1.20	P
437.45	46.86	16.44	3.74	27.28	39.75	46.00	-6.25	3mV	0.00	1.20	P
Total data #: 12											
V.2c											
No other emissions found upto 2 GHz											

COHERENCE TEST  
HORIZONTAL





**ATTACHMENT**

**EUT PHOTOGRAPHS**

