FCC Part 15 & RSS-GEN/210

TEST REPORT

For

TX-92 Patrol Record Transmitter

Model Name: TX-92

Brand Name: HYT

FCC ID: R74TX-92, IC: 5465A-TX92

Report No.: SZAGC003080703E6

Date of Issue: Jul.22, 2008

Prepared For

SHENZHEN HYT SCIENCE & TECHNOLOGY CO., LTD.

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VERIFICATION OF COMPLIANCE

Applicant:	SHENZHEN HYT SCIENCE & TECHNOLOGY CO., LTD. HYT TOWER, SHENZHEN HI-TECH INDUSTRIAL PARK NORTH, BEIHUAN RD., NANSHAN DISTRICT, SHENZHEN, P.R.C.
Manufacturer:	SHENZHEN HYT SCIENCE & TECHNOLOGY CO., LTD. HYT TOWER, SHENZHEN HI-TECH INDUSTRIAL PARK NORTH, BEIHUAN RD., NANSHAN DISTRICT, SHENZHEN, P.R.C.
Product Description:	TX-92 Patrol Record Transmitter
Brand Name:	HYT
Model Number:	TX-92
Serial Number:	N/A
File Number:	SZAGC003080703E6
Date of Test:	Jul.15, 2007 ~ Jul.22, 2008

We hereby certify that:

The above equipment was tested by Shenzhen Attestation of Global Compliance Science & Technology Co., Ltd. The data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C 63.4:2003 and RSS-GEN. The sample tested as described in this report is in compliance with the FCC Rules Part 15 and RSS-GEN

The test results of this report relate only to the tested sample identified in this report.

Prepared By: Tony Tian

Tony Tian Jul.22, 2008

Checked By: Randy He

Randy He Jul.22, 2008

Authorized By King Zhang

King Zhang Jul.22, 2008

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

The EUT is a short range, lower power, TX-92 Patrol Record Transmitter. It is designed by way of utilizing the MSK modulation achieves the system operating.

A major technical description of EUT is described as following:

Power Supply	DC 4.5V by battery or DC 4.5V by adaptor.
Transmitter Frequency	433.901MHz.
Transmit Power	0.76 mW
Modulation Technique	MSK
Bandwidth of Channels	931 KHz
Duration of each transmission	578.3 us
Antenna Type	A permanent fixed antenna, which is built-In, designed as an indispensable part of the EUT.

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: R74TX-92** and **IC: 5465A-TX92** filing to comply with the FCC Part 15 requirements and RSS-GEN requirements.

1.3 TEST METHODOLOGY

The radiated emission testing was performed according to the procedures of ANSI C63.4: 2003 and FCC CFR 47 Rules of 15.207, 15.209, 15.240, 2.1057

1.4 TEST FACILITY

The test site used to collect the radiated data is located on the address of F1, Bldg A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park, Nanshan District, 518057, Shenzhen, P.R.China. (Accurate Technology Co., Ltd.)

The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003 and IC requirements in documents RS212
FCC register No.: 253065

1.5 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

1.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT EXERCISE

The Transmitter was operated in the normal operating mode. the TX frequency was fixed which was for the purpose of the measurements.

2.3 GENERAL TECHNICAL REQUIREMENTS

(1). Section 15.207: Conducted Limits
(2). Section 15.209: Radiated Emission Limits
(3). Section 15.240: The Duration of Each Transmission
(4). Section 15.240: The Silent Period between transmissions

2.4 CONFIGURATION OF TESTED SYSTEM

Fig. 2-1 Configuration of Tested System

Table 2-1 Equipment Used in Tested System

Item	Equipment	Model No.	Identifier	Series No.	Note
1	TX-92 Patrol Record Transmitter	TX-92	FCC ID: R74TX-92 IC:5465A-TX92	--	EUT
--	--	--	--	--	--
--	--	--	--	--	--

3. SUMMARY OF TEST RESULTS

FCC Rules	RSS-210 RSS-GEN	Description Of Test	Result
§15.207	RSS-GEN §7.2.2	Conducted Emission	Compliant
§15.209	RSS-210 §2.2 RSS-210 Annex 5	Radiated Emission Limits	Compliant
§15.240	RSS-210 Annex 5	The Duration of Each Transmission	Compliant
§15.240	RSS-210 Annex 5	The Silent Period between transmissions	Compliant

4. DESCRIPTION OF TEST MODES

The EUT (TX-92 Patrol Record Transmitter) has been tested under normal operating condition.

5. CONDUCTED LIMITS

5.1 PROVISIONS APPLICABLE

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the, the radio frequency voltage that is conducted back onto the AC power line on any frequencies within the band 150 KHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50uH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit(dBuV)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 – 30	60	50

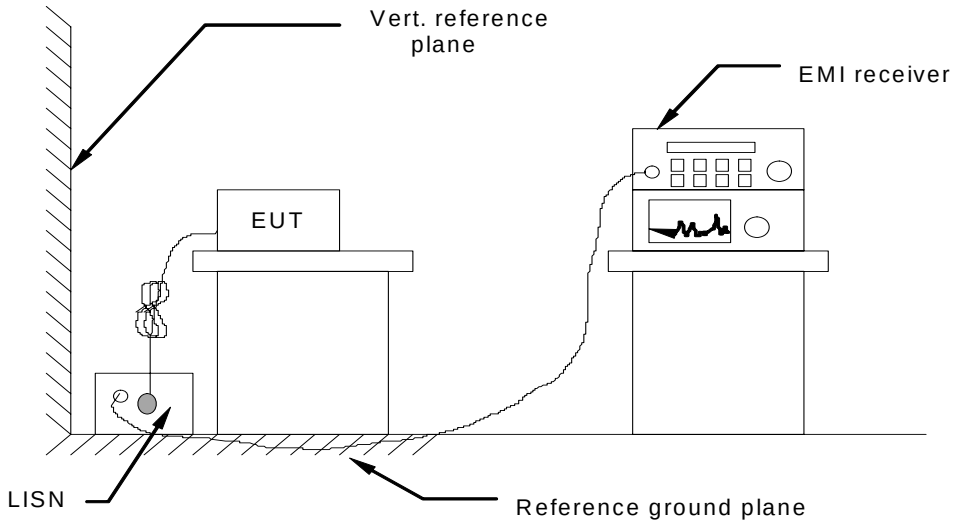
* Decreases with the logarithm of the frequency.

5.2 MEASUREMENT PROCEDURE

(1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
(2) Support equipment, if needed, was placed as per ANSI C63.4.
(3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
(4) The EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
(5) All support equipments received AC power from a second LISN, if any.
(6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
(7) Analyzer / Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

5.3 TEST SETUP BLOCK DIAGRAM

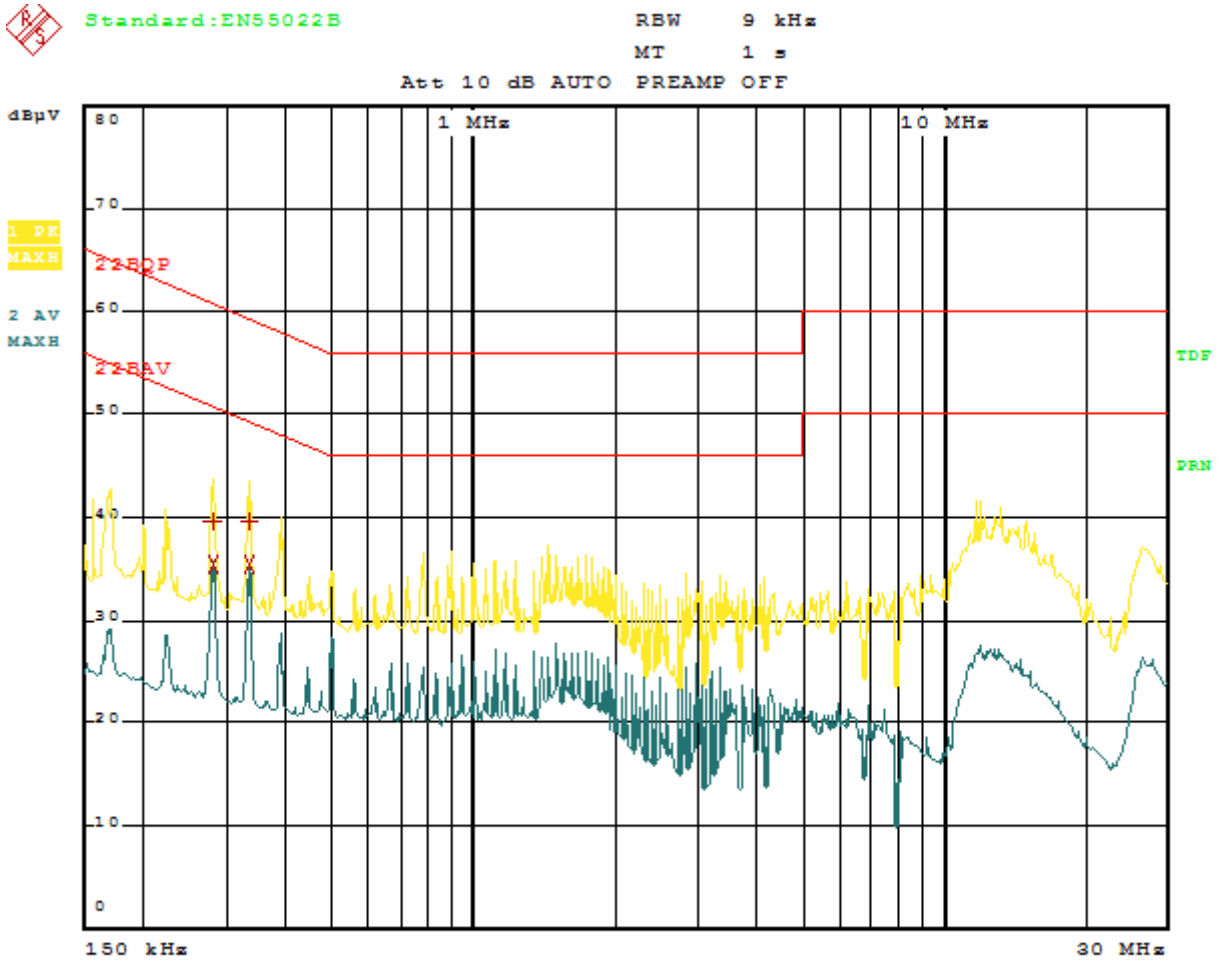


5.4 TEST EQUIPMENT USED

Conducted Emission Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESPI3	100396	2009-07-13
LISN	R&S	ESH3-Z6	100132	2009-07-13

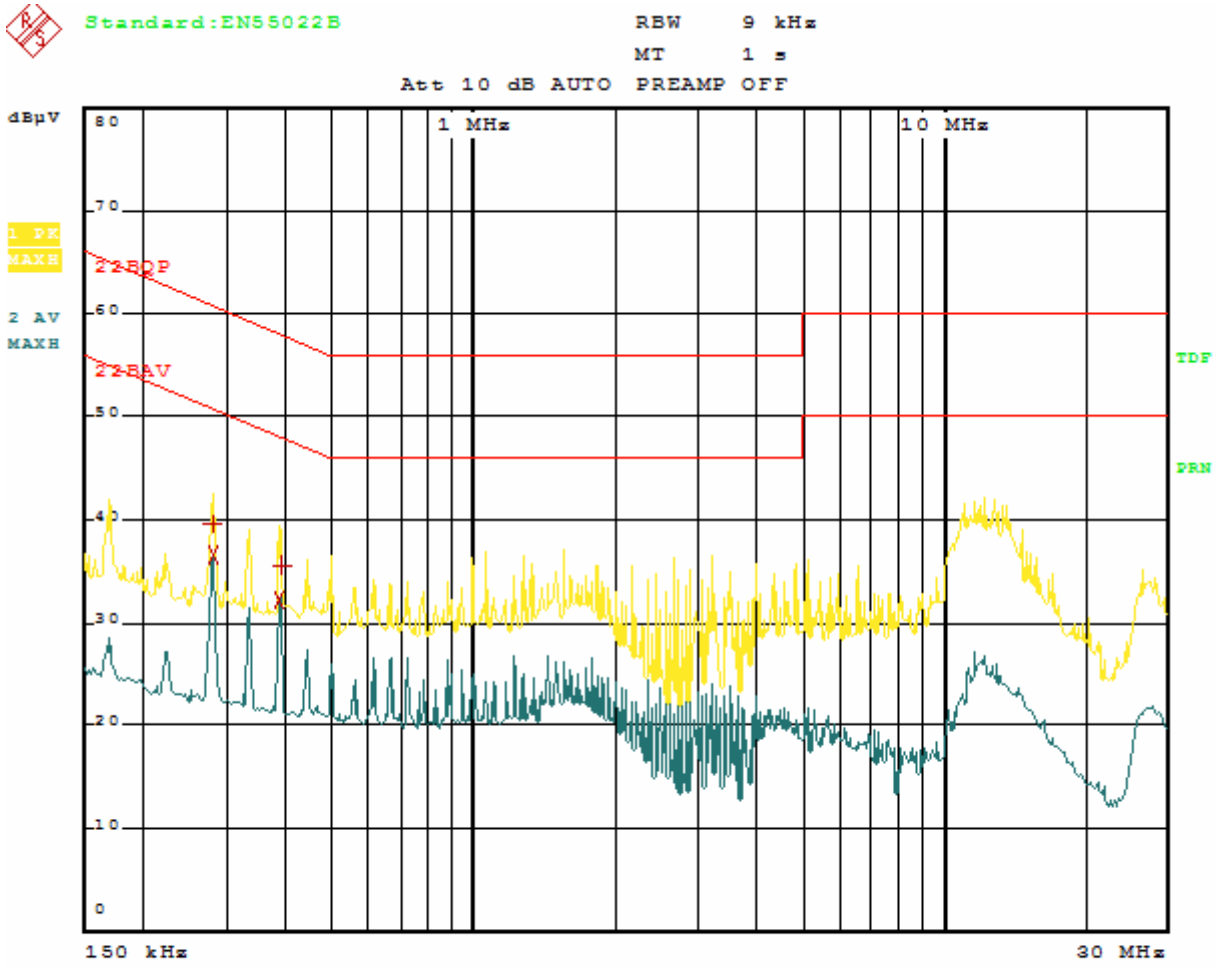
5.5 TEST RESULT

LINE CONDUCTED EMISSION TEST-NEUTRAL LINE



Comment B: Manuf:AGC EUT:SPS M/N:TC700 Memo:Charging Power:Va 120 V/60Hz
Date: 15.JUL.2008 13:53:59

LINE CONDUCTED EMISSION TEST-LINE LINE



Comment B: Manuf:AGC EUT:SPS M/N:TC518 Memo:Charging Power:Vb 120 V/60Hz
Date: 15.JUL.2008 14:03:23

6. EMISSION BANDWIDTH

6.1 Provisions Applicable

Frequency operated±(emission bandwidth)/2 is within the 433.5 MHz to 434.5 MHz.

6.2 Measurement Procedure

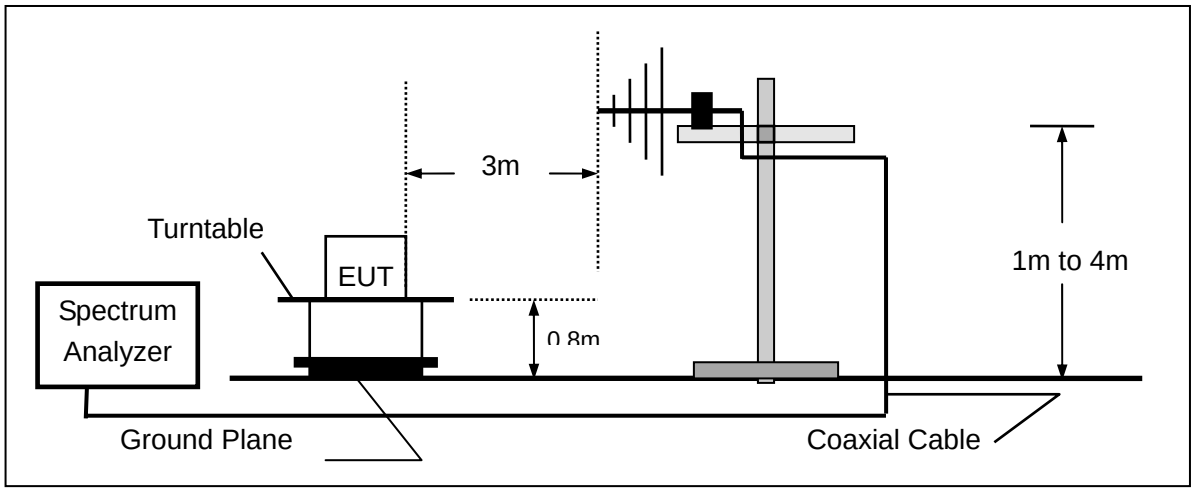
1). The EUT was placed on a turn table which is 0.8m above ground plane.

2). The EUT was operated with signal modulated.

3). Set SPA Center Frequency = fundamental frequency, RBW=VBW= 100 KHz, Span =1.5 MHz.

4). Set SPA Max hold. Mark peak, -20 dB.

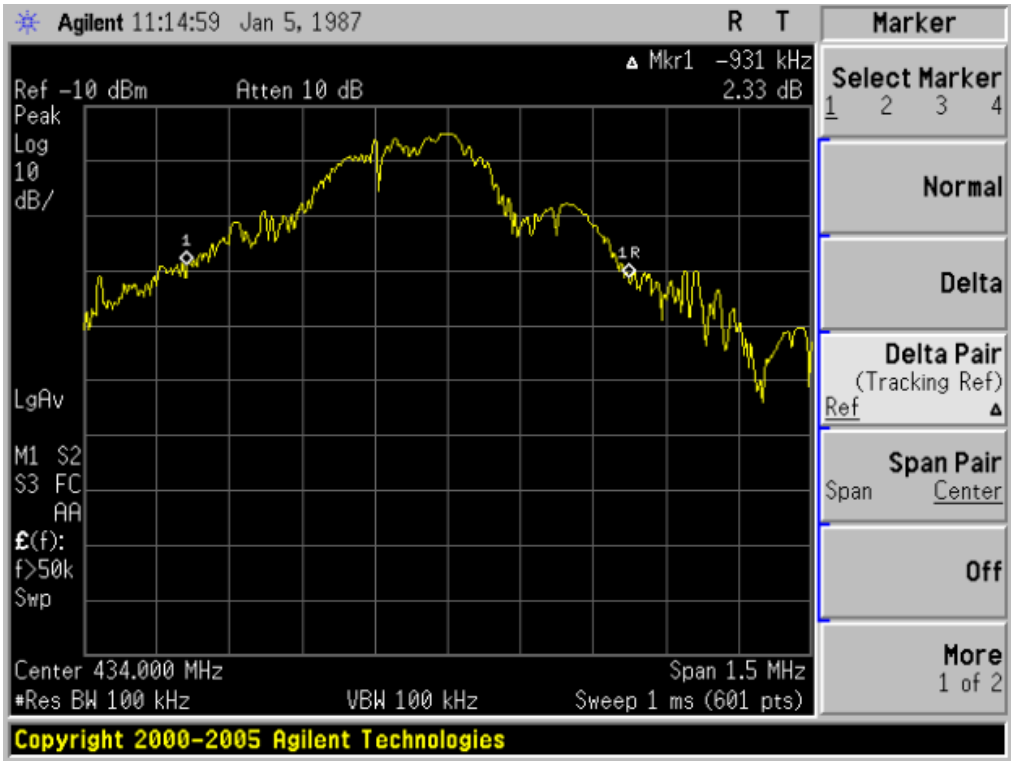
6.3 Test Setup Block Diagram



6.4 Measurement Equipment Used

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
EMI TEST RECEIVER	R&S	ESCS30	100307	2009-07-13
AMPLIFIER	HP	HP8447D	2944A10419	2009-07-13
ANTENNA	R&S	VULB9163	9163-194	2009-07-13

6.5 MEASUREMENT RESULT



7. RADIATED EMISSTION

7.1 Provisions Applicable

According to Section 15.240 (b), the field strength of any emissions radiated within the specified frequency band shall not exceed 11,000 microvolts per meter measured at a distance of 3 meters. The emissions limit in this paragraph is based on measurement instrumentation employing an average detector. The peak level of any emissions within the specified frequency band shall not exceeding 55,000 microvolts per meter at a distance of 3 meters.

7.2 Measurement Procedure

(1). On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.

(2). The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.

(3). The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.

(4). The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.

(5). The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.

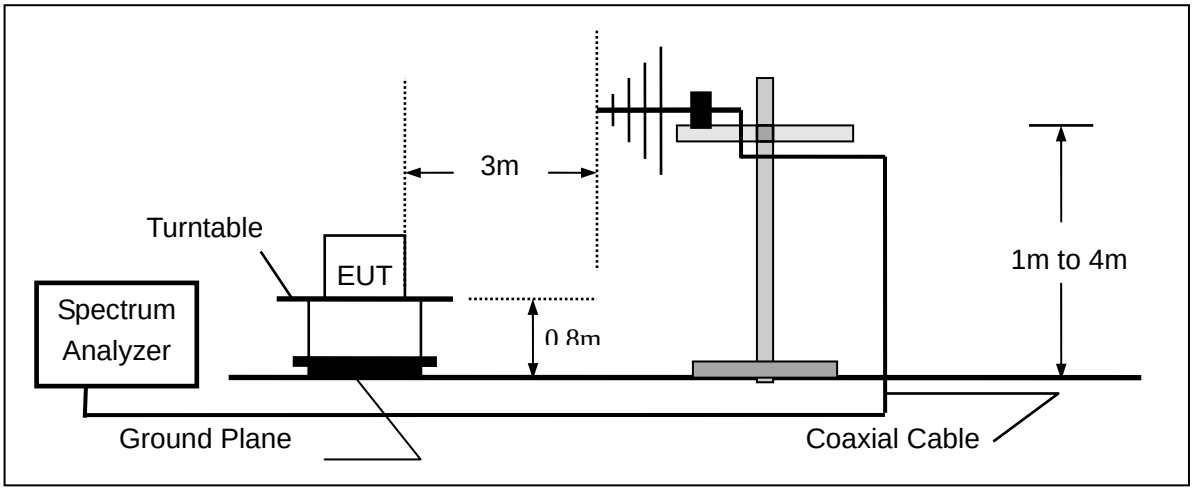
(6). The transmitter shall than be rotated through 360°in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

(7). The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.

(8). The maximum signal level detected by the measuring receiver shall be recorded.

(9). The measurement shall be repeated with the test antenna set to horizontal polarization.

7.3 Test Setup Block Diagram



7.4 Measurement Equipment Used

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL. DATE
EMI TEST RECEIVER	R&S	ESCS30	100307	2009-07-13
AMPLIFIER	HP	HP8449B	2944A10419	2009-07-13
ANTENNA	R&S	VULB9163	9163-194	2009-07-13

7.5 MEASUREMENT RESULTS

Radiated Emission - Horizontal							
Frequency	Antenna Pol.	Field Strength	Field Strength	Limit (PK)	Limit (QP)	Limit (AV)	Memo Duty Cycle =0.000058
GHz	H/V	dBuV/m (PK)	dBuV/m (AV)	dBuV/m	dBuV/m	dBuV/m	
433.900	H	94.03	51.65	--	--	80.83	F
433.500	H	40.13	--	--	46	--	E
434.500	H	39.87	--	--	46	--	E
867.800	H	37.11	--	--	46	--	H
1201.700	H	52.19	--	74	--	54	H
--	H	--	--	74	--	54	H

Radiated Emission – Vertical							
Frequency	Antenna Pol.	Field Strength	Field Strength	Limit (PK)	Limit (QP)	Limit (AV)	Memo Duty Cycle =0.000058
GHz	H/V	dBuV/m (PK)	dBuV/m (AV)	dBuV/m	dBuV/m	dBuV/m	
433.900	V	80.82	38.44	--	--	80.83	F
433.500	V	36.19	--	--	46	--	E
434.500	V	35.33	--	--	46	--	E
867.800	V	33.71	--	--	46	--	H
1201.700	V	49.29	--	74	--	54	H
--	V	--	--	74	--	54	H

“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency.

“--” indicate the test value is much lower to limit

8. THE DURATION OF EACH TRANSMISSION & THE SILENT PERIOD BETWEEN TRANSMISSIONS

8.1 Provisions Applicable

According to 15.240 (b),devices authorized under these provisions shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than 60 seconds and be only permitted to reinitiate an interrogation in the case of a transmission error. Absent such a transmission error, the silent period between transmissions shall not be less than 10 seconds.

8.2 Test Setup

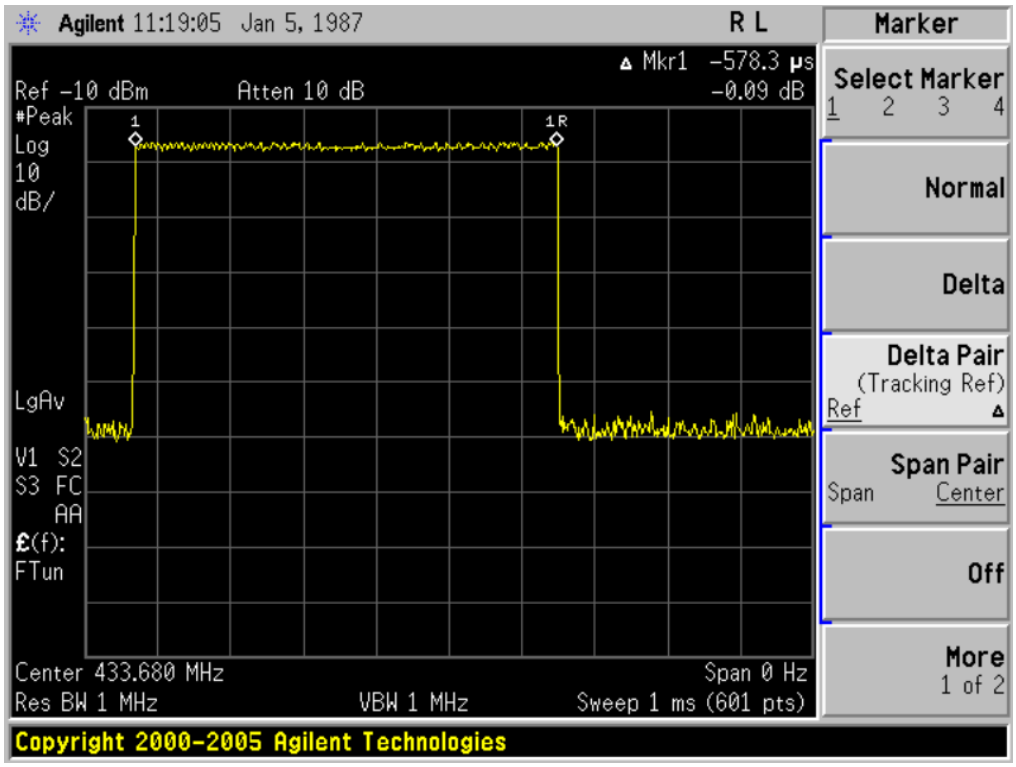
The same as 6.3

8.3 Measurement Instruments

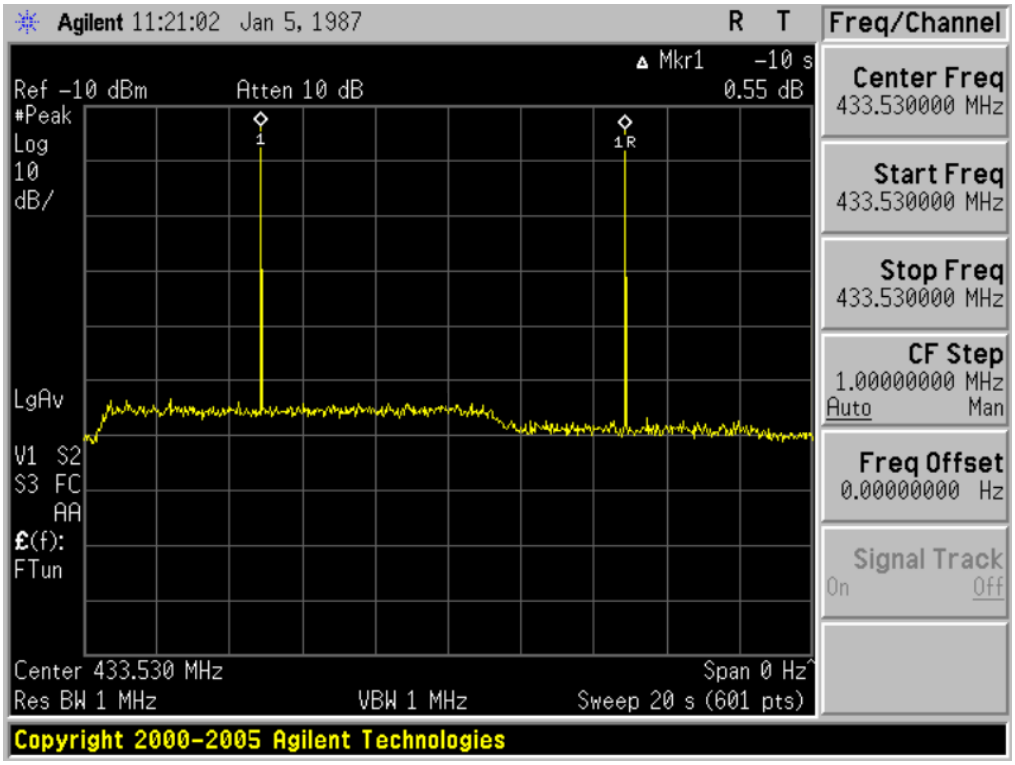
The same as 6.4

8.4 Measurement Result

THE DURATION OF EACH TRANSMISSION



THE SILENT PERIOD BETWEEN TRANSMISSIONS



APPENDIX I
PHOTOGRAPHS OF SETUP

RADIATED TEST SETUP

CONDUCTED EMISSION TEST SETUP

APPENDIX II
EXTERNAL VIEW OF EUT

TOP VIEW OF EUT

BOTTOM VIEW OF EUT

LEFT VIEW OF EUT

RIGHT VIEW OF EUT

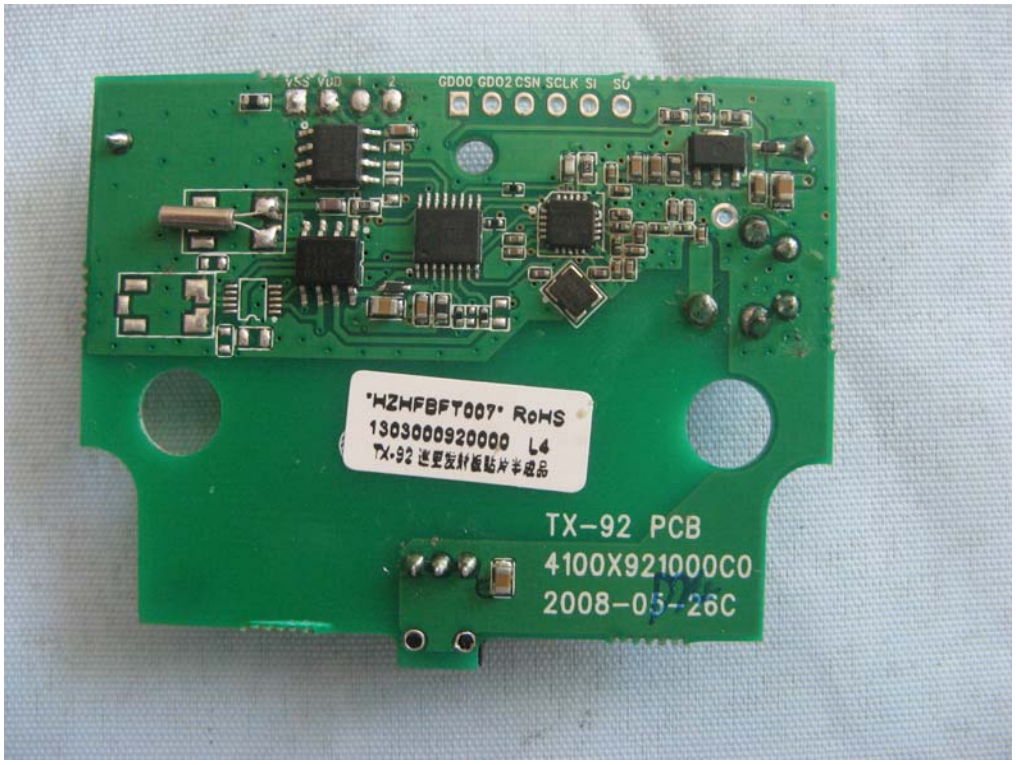
FRONT VIEW OF EUT

BACK VIEW OF EUT

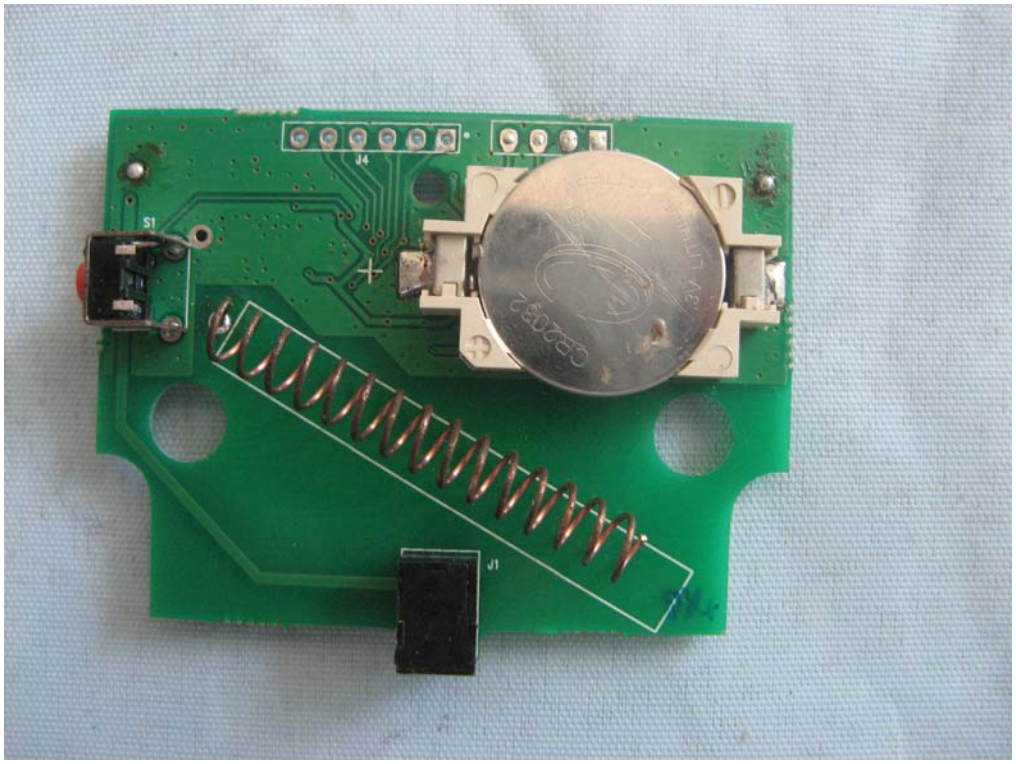
ACCESSORY

APPENDIX III
INTERNAL VIEW OF EUT

INTERNAL VIEW-1 OF EUT



INTERNAL VIEW-2 OF EUT



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