Application for FCC Identifier

On Behalf of

Jiangsu Yinhe Electronics Co., Ltd.

(Product: Digital Satellite Receiver)
(FCC ID QOLYINHESTB02)

Summary

The equipment comply with the requirements according to the following standard(s):

47CFR Part 15 (1999): Radio Frequency Device

ANSI C63.4 (2000): Interim Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz.

Description

The appliances were tested by *Shanghai Institute of Standards and Metrology* and found compliance with relevant requirements described in FCC Part 15 Radio frequency Device.

Test results are contained in this test report and Intertek Testing Services ETL SEMKO Shanghai Limited is assumed full responsibility for the accuracy and completeness of these measurements.

Date of Test: October 24, 2002

Date of Issue: October 31, 2002

Prepared by:

Steve li *(Engineer)*

Report Approved by:

Ole Stiling *(Chief Engineer)*

Description of Test Facility

Name of Firm	:	Shanghai Institute of Standards and Metrology
Site Location	:	627 Yong Jia Road Shanghai, P.R. China
Name of contact	:	Mr. Zhiqing (first name) Li (last name)
Phone	:	86-21-64335275
Fax	:	86-21-64317195
E-mail address	:	stiep@stiep.com

CONTENTS

1.Applicant Information

Manufacturer: (FCC ID holder)	Jiangsu Yinhe Electronics Co., Ltd. 9 East Renmin Road, TangQiao, Zhangjiagang, Jiangsu Province, P.R. China
Country of origin:	P.R. China
Name of contact:	Mr. Xinglong (first name) Chen (last name)
Telephone:	86-512-58449190
Telefax:	86-512-58442480

2.Information of Equipment Under Test (EUT)

2.1 Identification of the EUT

Equipment:	Digital Satellite Receiver
Type of EUT:	☑ Production ☐ Pre-product ☐ Pro-type
Type/model:	GS-3000
Date of sample receipt	2002-10-10
Date of test	2002-10-22 ~ 2002-10-24
Rating:	AC120V, 60Hz, max 20W

2.2 Additional information about the EUT

Frequency range :	60MHz - 72MHz
FCC Rule part(s):	Part 15 subpart B section 15.115
Test procedure:	ANSI C63.4 – 2000
FCC classification:	TV interface device (HID)
RF channels:	Ch.3 / Ch.4
Chassis type:	Metal
List of Each OSC, or X-tal. Freq.:	OSC-27MHz
RF modulator frequency:	470-860MHz
LNB tuner input frequency range:	950MHz – 2150MHz
LNB input signal level:	-65dBm - -25dBm
LNB Tuner input supply:	14/18V, max 400mA
LNB tuner input switch control:	22kHz
LNB tuner input DiSEqC	Ver 1.2 Compatible
Demodulator front end:	QPSK
Demodulator symbol rate:	2Msps – 45Msps
System resource (Processor):	32bit processor (83MHz)
System resource (SDRAM):	8Mbyte
System resource (Flash):	4Mbyte
System resource (EPROM):	8kbyte
Demodulator spectral inversion:	Auto conversion
Video Decoder Type:	MPEG 2
Video decoder data rate:	up to 15M bits/s
Video decoder video format:	NTSC, PAL
Video decoder resolution:	720×576, 720×480
MPEG Audio type:	Mono, Dualmono, Stereo
MPEG Audio sampling rates:	32,44.1,48kHz
Power consumption:	AC 120V, 60Hz, max 20W

2.3 Peripheral equipment

Color TV Model: 2196 Manufacturer: KONKA FCC ID: None.

Output cable connected to TV: 1.0m shielded

Cable connected to satellite antenna: 30m shielded

3. Conducted Powerline Measurement

3.1 Conduction Limit

FCC Part 15 Subpart B section 15.107

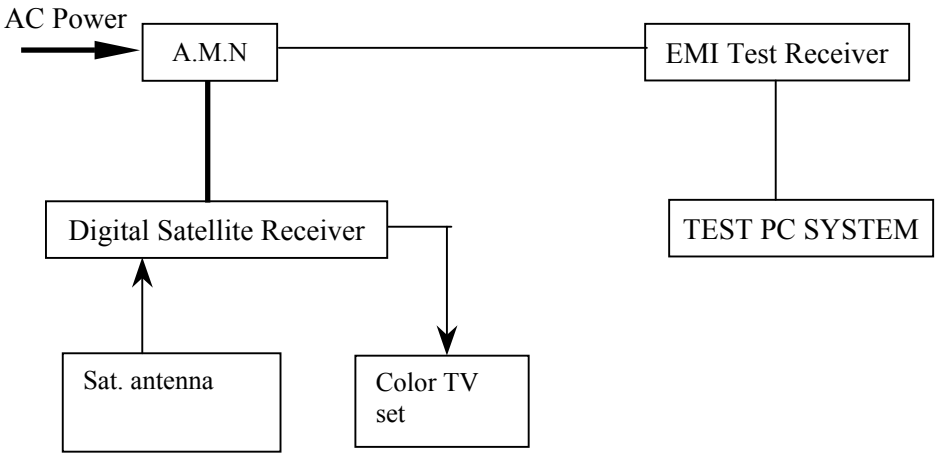
Frequency (MHz)	**Maximum RF line voltage measured with a 50uH/50 ohm LISN**	
	(μV)	**dB(μV)**
0.45-30MHz	250	48.0
RF Line Voltage dB(μV) = 20 lg RF Line Voltage (μV)		

3.2 Instruments List

The following instruments were used during the measurement of RF voltage conducted back into the power lines.

Item	Equipment	Manu.	Type	Serials no.	Last Cal.	Cal. Interval
1	EMI Test Receiver	Rohde & Schwarz	ESCS 30	828985/026	2002-2-8	1 Year
4	A.M.N.	Rohde & Schwarz	ESH3-Z5	835.5518.52	2002-4-10	1 Year
2	A.M.N.	Rohde & Schwarz	ESH2-Z5	825640/018	2002-3-5	1 Year

3.3 Test Setup



Note: ——— means "power line"
——— means "signal line"

3.4 Test Configuration

The Conducted Powerline Measurement was proceeded in a shielded room.

The EUT was connected to AC power source through an Artificial Mains Network (A.M.N.). which provides a 50 ohm, standardized RF impedance for the measured equipment. Other support equipment was powered by another AMN.

The EUT was placed on a 1m×1.5m×0.8m wooden table and keep 40 centimeters from the wall of the earthed shielded room, which was considered as Ground Reference Plane(GRP), and kept at least 80 centimeters from any other earthed conducting surface. The EUT was placed at a distance of 80 centimeters from the AMN's, and connected thereto by a unshielded lead of 1 meter in length.

The satellite TV signal was lead to the digital satellite receiver by the sat. antenna, through the noise filter of the shielded room. The satellite receiver was set at "TV" mode.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

The frequency range from 450 kHz to 30 MHz was checked.

The bandwidth of Test Receiver ESCS 30 was set at 9 kHz,

After scanned by automatic peak mode, the frequency producing the max. level was reexamined using the detector function set to the CISPR Quasi-peak mode by manual.

The EUT, support equipment and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was maximized by switching power lines, varying the mode of operation or resolution, clock or data exchange speed, if applicable, whichever determined the worst-case emission.

During measurement, EUT was set at “Receiving and play TV” mode.

Test Results were listed in sec. 3.6.

3.5 Test Procedure

3.5.1 Establish the test setup as sec. 3.3.
3.5.2 Set the digital satellite receiver to “receiving and play TV” mode.
3.5.3 Proceed the measurement

3.6 Test Results

■ Pass □ Fail

3.6.1 Measurement environment

Temperature : 22.7 °C Relative Humidity : 47 %

3.6.2 Test Personnel

Name: Li Zhiqing Title: Senior Engineer
Tel: 86-21-64335275
Fax: 86-21-64317195
E-mail address: stiep@stiep.com

3.6.3 Data table

Both CH.3 and CH.4 were tested, and CH.4 was the worse case operation mode. The test mode was set on" Receive and play TV"

Test Line	Frequency (MHz)	Reading level dB(μV)	Insertion loss dB	Cable loss dB	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.46646	33.45	1.10	0.10	34.65	48.00	13.35
	2.65897	***44.03***	***0.90***	***0.10***	***45.03***	***48.00***	***2.97***
	2.85707	41.49	0.90	0.10	42.49	48.00	5.51
	4.37954	42.27	0.85	0.10	43.22	48.00	4.78
	5.56482	42.39	0.80	0.10	43.29	48.00	4.71
VB	0.46646	34.62	1.10	0.10	35.82	48.00	12.18
	2.08429	41.41	0.90	0.10	42.41	48.00	5.59
	2.47461	43.01	0.90	0.10	44.01	48.00	3.99
	2.71258	43.13	0.90	0.10	44.13	48.00	3.87
	2.85707	39.71	0.90	0.10	40.71	48.00	7.29
	4.45003	37.57	0.80	0.10	38.47	48.00	9.53
	5.58708	40.79	0.80	0.10	41.69	48.00	6.31

Note:
1. All data listed are Quasi-Peak value.
2. The spectrum was checked in each test mode and operation mode, and the maximum measured data were reported.
3. The worst emission was founded at 2.65897 MHz with emission level 45.03 dBμV, at line VA.
4. Emission level = Reading level + Insertion Loss + Cable loss

Test Engineer: Zhiqing Li (Li Zhiqing) Date of test: 2002-10-24

3.7 Measurement Uncertainty

Measurement uncertainty of conducted power line test is 3.34dB
The measurement uncertainty is given with a confidence of 95%

4. Radiated emission measurement

4.1 Radiated emission limit

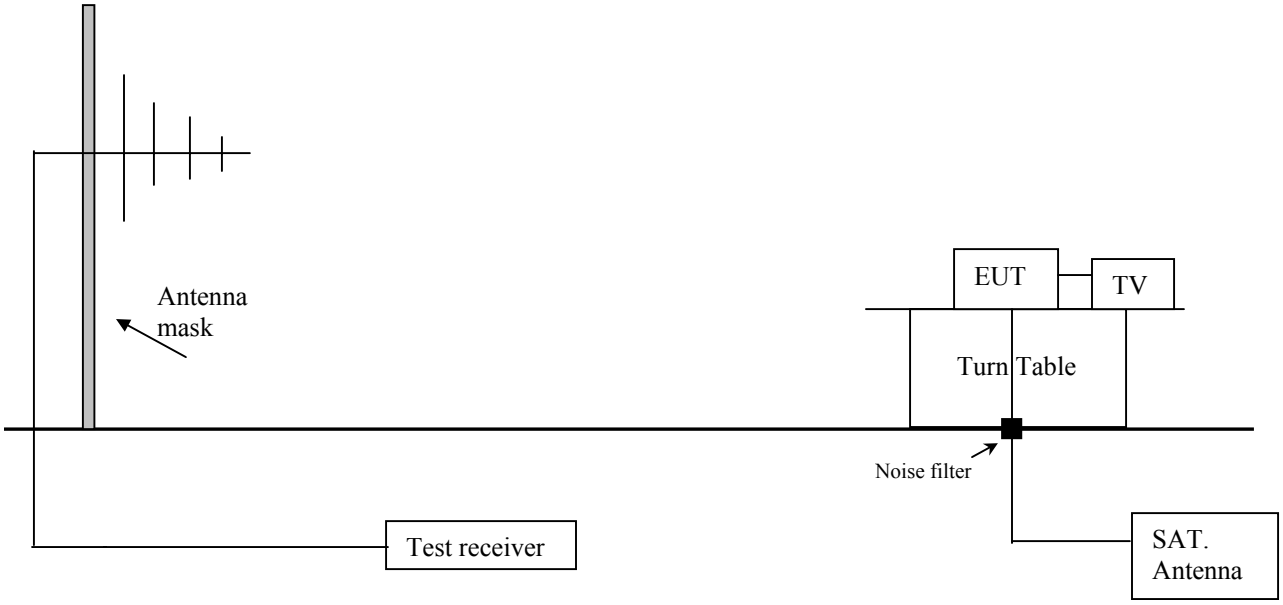
FCC Part 15 Subpart B section 15.109

Frequency of emission (MHz)	Field strength (mircovolts/meter)	Field strength (dBμV/m)
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0
Radiated emission in dBμv/m = 20lg (mircovolts/meter)		

4.2 Instruments list

Instrument	Type/model	Manufacturer	Series no.	Last Cal.	Cal Interval
Broadband antenna	CBL 6112	SCHAFFNER	2587	2002-4-24	1 year
EMI test receiver	8542E	HEWLETT PACKARD	3705A00251	2002-4-26	1 year

4.3 Test setup



4.4 Test configuration

The radiated emission measurement was conducted in a 3 meters semi-anechoic chamber.

The EUT, support equipment and interconnecting cables were configured to the set-up producing the maximum emission for the frequency and were placed on top of a 0.8 meter high wooden 1m×1.5m table.
The satellite TV signal was lead to the digital satellite receiver by sat. antenna through the noise filter of the anechoic chamber. The receiver RF output was connected to the TV RF input terminal.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

During the test, the turntable containing the system was rotated and the antenna height was varied from 1 to 4 meters and stopped at the azimuth or height producing the maximum emission.

The EUT, support equipment and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was maximized by switching power lines, varying the mode of operation or resolution, clock or data exchange speed, if applicable, whichever determined the worst-case emission.

The frequency from 30MHz to 1000MHz was checked and the bandwidth of the test receiver was set to 120kHz.

Also the measurements were conducted with three frequencies which were selected as bottom, middle, and top frequency in the receiver tune band.

The digital satellite receiver was set as “receiving and play TV” mode and both Ch.3 and Ch.4 were measured.

4.5 Test procedure

4.5.1 Establish the test setup as sec. 4.3.
4.5.2 Set the digital satellite receiver to “receiving and play TV” mode.
4.5.3 Proceed the measurement

4.6 Test Results

■ Pass ☐ Fail

4.6.1 Measurement environment

Temperature : 25.2 °C Relative Humidity : 41 %

4.6.2 Test Personnel

Name: Li Zhiqing Title: Senior Engineer
Tel: 86-21-64335275
Fax: 86-21-64317195
E-mail address: stiep@stiep.com

4.6.3 Data table

Both Ch.3 and Ch.4 were tested, the test mode was set on " Receiving and play TV"
Ch.4 was the worse operation mode.

Ch. 3

Frequency (MHz)	Reading (dBμV)	Polarization (H/V)	Ant. Factor (dB)	Cable Loss (dB)	Emission Level (dBμv/m)	Limit (dBμV/m)	Margin (dB)
215.6	30.9	H	8.3	1.0	40.2	43.5	3.2
483.1	22.9	H	17.0	1.3	41.2	46.0	4.8
704.2	22.3	H	19.2	1.7	43.2	46.0	2.8
755.4	20.3	H	19.7	1.8	41.8	46.0	4.2
803.2	20.2	H	19.8	1.8	41.8	46.0	4.2
861.5	18.5	H	20.4	1.8	40.7	46.0	5.3
300.9	28.6	V	13.0	1.1	42.7	46.0	3.3
322.8	25.4	V	13.3	1.2	39.7	46.0	6.3
704.2	***23.1***	***V***	***19.1***	***1.7***	***43.9***	***46.0***	***2.1***
755.4	21.8	V	19.7	1.8	43.4	46.0	2.7
861.5	19.4	V	20.4	1.8	41.6	46.0	4.4

Note:
1. all data listed above are the Quasi-peak value.
2. "H" means Horizontal polarization, "V" means Vertical polarization
3. Emission level = Reading level + Antenna factor + Cable loss
4. Margin = Limit – Emission level

Test Engineer: Zhiqing Li (Li Zhiqing) Date of test: 2002-10-24

Ch. 4

Frequency (MHz)	Reading (dBμV)	Polarization (H/V)	Ant. Factor (dB)	Cable Loss (dB)	Emission Level (dBμv/m)	Limit (dBμV/m)	Margin (dB)
215.6	30.3	H	8.3	1.0	39.6	43.5	4.1
483.1	20.7	H	17.0	1.3	39.0	46.0	7.0
704.2	***23.0***	***H***	***19.1***	***1.7***	***43.8***	***46.0***	***2.2***
861.5	21.1	H	20.4	1.8	43.3	46.0	2.3
311.6	26.7	V	13.5	1.1	41.3	46.0	4.7
591.0	19.0	V	18.6	1.6	39.2	46.0	6.8
704.2	22.6	V	19.1	1.7	43.4	46.0	2.6
762.0	***22.3***	***V***	***19.8***	***1.7***	***43.8***	***46.0***	***2.2***
861.5	18.8	V	20.4	1.8	41.0	46.0	5.0

Note:
1. all data listed above are the Quasi-peak value.
2 ".H" means Horizontal polarization, "V" means Vertical polarization
3. Emission level = Reading level + Antenna factor + Cable loss
4. Margin = Limit – Emission level

Test Engineer: Zhiqing Li (Li Zhiqing) Date of test: 2002-10-24

Radiated emission (Harmonics) Test data

The fundamental harmonics frequency of the local oscillator of the satellite receiver part was tested on a near top, middle and bottom tuning frequencies of the EUT according to section 15.31(m) and 15.33(b)(3).

Freq. Tuned (MHz)	Reading (dBμV/m)	Ant. Polarization (H/V)	Antenna factor (dB)	Cable Loss (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
950	-	H	-	-	-	54.0	-
955	-	H	-	-		54.0	-
960	-	H	-	-	-	54.0	-

Harmonic RF Radiation (Second Harmonics)

Freq. Tuned (MHz)	Reading (dBμV/m)	Ant. Polarization (H/V)	Antenna factor (dB)	Cable Loss (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
950	-	H	-	-	-	54.0	-
955	-	H	-	-		54.0	-
960	-	H	-	-	-	54.0	-

Note: no emission was observed during the test.

Test Engineer Zhiqing Li (Li Zhiqing) Date of test: 2002-10-24

4.7 Measurement Uncertainty

Measurement uncertainty of conducted power line test is 3.92dB
The measurement uncertainty is given with a confidence of 95%

5. Antenna Conducted power Measurement

5.1 Antenna Conducted power limit

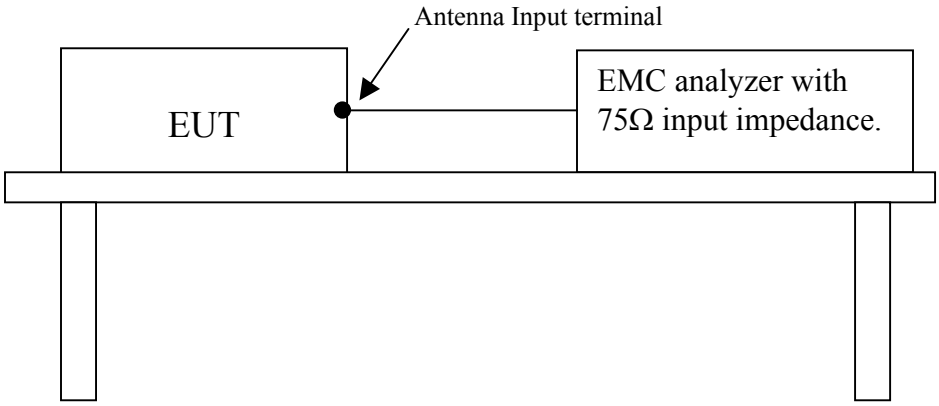
FCC Part 15 Subpart B section 15.111

Frequency (MHz)	Limit in power (narowatt)	Limit in dBμV
30-960	2.0	50.0

5.2 Instruments List

Instrument	Manufacturer	Type/model	Series no.	Last Cal.	Cal. Interval
EMC Analyzer	Agilent	E7402A	US40240228	2002-4-13	1 Year

5.3 Test setup



5.4 Test configuration

Power on the receive antenna terminals was to be determined by measurement of the voltage present at these terminals.
Antenna-conducted power measurements is performed with the EUT antenna terminals connected directly to a spectrum with 75Ω input impedance.
With the EUT tuned to one of the frequency over which device operated, measure both the frequency and voltage present at the antenna input terminals over the frequency range specified in the individual equipment requirements. Repeat this measurement with the receiver tuned to another frequency until the number of frequencies specified have been measured. Power on the receive antenna terminals is the ratio of V^2/R, where V is the measured voltage at the antenna input terminals, and R is the impedance of the measuring instrument.

5.5 Test procedure

5.5.1. connect the antenna input terminals to the spectrum directly, and set the spectrum input impedance to 75Ω.
5.5.2. Turn on the receiver for a warm up time period
5.5.3. Tune the frequency to the desired measured frequency 1
5.5.4. Do the measurement
5.5.5. Tune the frequency to frequency 2, repeat 5.5.4

5.6 Test protocol

Temperature : 24.0°C Relative Humidity : 44%

Test mode: " Receiving and play TV"

Tuned frequency (MHz)	Reading level (dBμV)	Cable loss (dB)	Emission level (dBμV)	Limit (dBμV)	Margin (dB)
950	25.4	1.0	26.4	50.0	23.6
1550	25.4	1.7	27.1	50.0	22.9
2150	25.9	2.3	29.2	50.0	20.8

Notes:
1. All data listed are Quasi-peak value.
2. Emission level = Reading level + Cable loss / Margin = Limit – Emission level.
3. No values higher than 10dB below the limit was observed during the test.

Test Engineer  (Li Zhiqing) Date of test: 2002-10-24

5.7 Measurement uncertainty

Measurement uncertainty of antenna power conduction measurement is 2.82dB
The measurement uncertainty is given with a confidence of 95%

6. Output signal conducted level measurement

6.1 Output signal conducted limit

FCC Part 15 Subpart B section 15.115(b)(1)

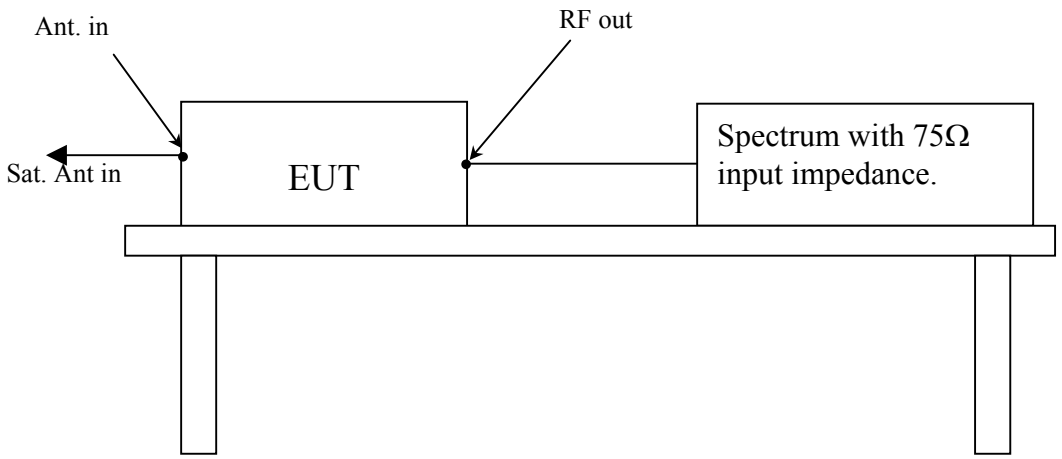
Frequency (MHz)	Limit	Limit in dBμV
Video Carrier	$346.4R^{1/2}$	69.5
Audio Carrier	$77.5R^{1/2}$	56.5

Note: R=75Ω

6.2 Instruments List

Instrument	Manufacturer	Type/model	Series no.	Last Cal.	Cal. Interval
EMC Aanlyzer	Agilent	E7402A	US40240228	2002-4-13	1 Year

6.3 Test Setup



6.4 Test Configuration

The output signal level is the maximum voltage level present at the output terminals of the EUT on a particular frequency during normal use.
The signal level was measured by direct connection to the spectrum analyzer with 75Ω input impedance. The RF output signal level measured was the highest RF level present at the output terminals during normal use of the device. Measurements were made of the levels of both the visual(61.25MHz), and audio (71.75MHz) carrier for each TV channel (3 and 4 channel) on which the device operates. The cable was supported between the EUT and the measuring instrument in a straight horizontal line so it had at least 75cm clearance from any conducting surface.
The EUT is provided with a typical signal consistent with normal operation. For each channel on which the EUT operates and in each mode in which the device operates, the video and audio carrier level is measured and recorded accordingly.

The voltage corresponding to the peak envelope power of the video modulated signal during maximum amplitude peaks across a resistance matching the rated output impedance of the device, must not exceed $346.4R^{1/2}$ μV for all other TV interface device. The voltage corresponding to peak envelope power of the terminal device of TV interface device used with a master antenna, and $77.2R^{½}$ μV for all other TV interface device.

6.5 Test procedure

6.5.1 connected the EUT as seen in 6.3
6.5.2 turn on the EUT for a warm up time period
6.5.3 tuned the EUT to the desired frequency, both video and audio
6.5.4 conduct the measurement
6.5.5 repeat 6.5.3, and 6.5.4, until all the frequency has been measured and recorded.

6.6 Test protocol

Temperature : 23.5°C Relative Humidity : 45%

Test mode : "Receiving and play TV"

Test RF channel	Emission frequency (MHz)	Reading level (dBμV)	Cable loss (dB)	Emission level (dBμV)	Limit (dBμV)	Margin (dB)
3	61.25	66.94	0.2	67.14	69.5	2.36
	65.75	52.39	0.2	52.59	56.5	3.91
4	67.25	64.76	0.2	64.96	69.5	4.54
	71.25	50.84	0.2	51.04	56.5	5.46

Notes:
1. All data recorded are Quasi-peak value
2. The spectrum was checked in each test mode and operation mode, and the maximum measured data were reported.
3. Emission level = Reading level + Cable loss / Margin = Limit – Emission level

Test Engineer: Zhiqing Li (Li Zhiqing) Date of test: 2002-10-24

6.7 Measurement uncertainty

Measurement uncertainty of antenna power conduction measurement is 2.82dB
The measurement uncertainty is given with a confidence of 95%

7. Output Terminal Conducted Spurious Emission Measurement

7.1 Applicable limit

FCC Part 15 Subpart B section 15.115(b)(2)

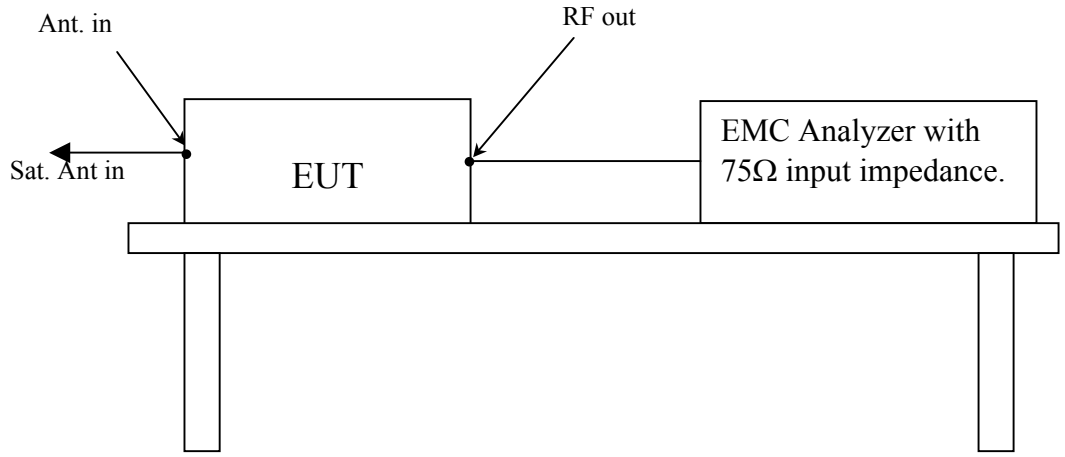
Frequency (MHz)	Limit	Limit in dBμV
4.6MHz below or 7.4MHz above the video carrier frequency	$10.95R^{1/2}$	39.5

Note: R = 75Ω

7.2 Instrument list

Instrument	Manufacturer	Type/model	Series no.	Last Cal.	Cal. Interval
EMC Analyzer	Agilent	E7402A	US40270228	2002-4-13	1 Year

7.3 Test setup



7.4 Test procedure

The RF output signal was fed to the TV receiver via coaxial cable. Measurements were made by direct connection to the spectrum analyzer and TV interface device. The frequency range from 30MHz to 1000MHz was checked for significant emission.
The maximum RMS voltage of any emission appearing on frequencies removed by more than 4.6MHz below and 7.4MHz above the video carrier frequency on which the TV interface device is operated must not exceed $692.8\ R^{½}$ μV for cable system terminal device or TV interface device used with a master antenna and $10.95R^{1/2}$ μV for all other TV interface device when terminated with a resistance matching the rated output impedance of the TV interface device.

7.5 Test procedure

7.5.1 connected the EUT as seen in 7.3
7.5.2 turn on the EUT for a warm up time period
7.5.3 conduct the measurement from 30MHz to 1000MHz

7.6 Test protocol

Temperature : 23.5°C Relative Humidity : 45%

Test mode : " Receiving and play TV"

Test channel	Emission frequency (MHz)	Reading level (dBuV)	Cable loss (dB)	Emission level (dBuV)	Limit (dBuV)	Margin (dB)
3	46.3	33.61	0.2	33.81	39.5	5.69
	50.83	32.48	0.2	32.68	39.5	6.82
	54.0	***38.25***	***0.2***	***38.45***	***39.5***	***1.05***
	73.8	35.49	0.2	35.69	39.5	3.81
	79.81	36.46	0.2	36.66	39.5	2.84
	113.1	32.23	0.25	32.48	39.5	7.02
4	37.0	35.50	0.2	35.70	39.5	3.80
	46.0	35.98	0.2	36.18	39.5	3.32
	50.8	36.58	0.2	36.78	39.5	2.72
	54.0	35.81	0.2	36.01	39.5	3.49
	59.4	***37.18***	***0.2***	***37.38***	***39.5***	***2.12***
	78.3	32.37	0.2	32.57	39.5	6.93
	89.6	33.22	0.2	33.42	39.5	6.07
	112.4	29.89	0.25	30.14	39.5	9.36

Note:
1. All data recorded are Quasi-peak value
2. The spectrum was checked in each test mode and operation mode, and the maximum measured data were recorded.
3. Emission level = Reading level + Cable loss / Margin = Limit – Emission level

Test Engineer: Zhiqing Li (Li Zhiqing) Date of test: 2002-10-24

7.7 Measurement uncertainty

Measurement uncertainty of antenna power conduction measurement is 2.82dB
The measurement uncertainty is given with a confidence of 95%

8. Antenna transfer switch measurement

8.1 Applicable limit

FCC Part 15 Subpart B section 15.115 (c)(1)

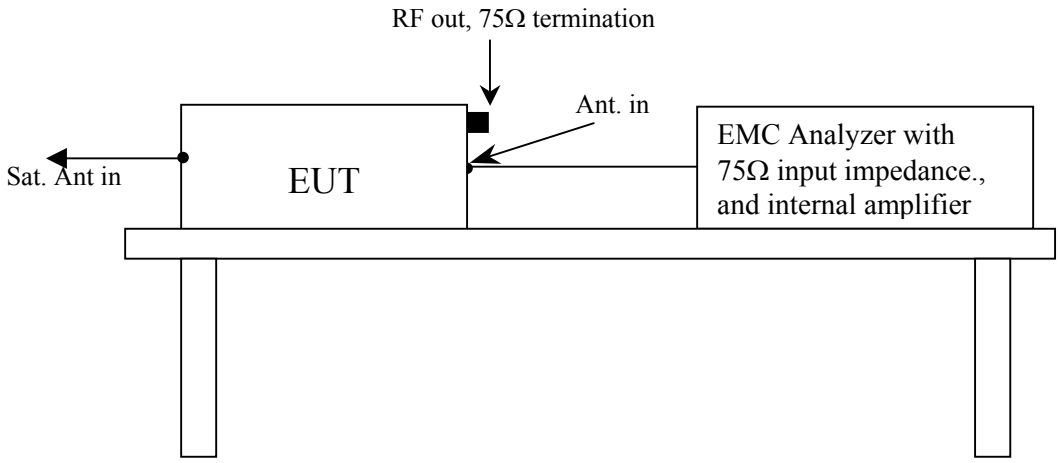
Frequency (MHz)	Limit	Limit in dBμV
Video Carrier	$0.346R^{1/2}$	9.5

Note: R = 75Ω

8.2 Instrument list

Instrument	Manufacturer	Type/model	Series no.	Last Cal.	Cal. Interval
EMC Analyzer (with internal amplifier)	Agilent	E7402A	US40240228	2002-4-13	1 Year

8.3 Test setup



8.4 Test Configuration

Isolation was measured for all positions of an antenna transfer switch on all output channels of the EUT. TV interface device transfer switch isolation is the difference the levels of a signal going into one antenna input terminal of the switch and that of the same signal coming out of another antenna terminal of transfer switch. The isolation of an antenna transfer switch equipped with coaxial connectors performed by measuring the maximum voltage of the visual carrier. Measurements were made of the maximum RMS voltage at the antenna input terminals of the switch for all positions of the switch for all positions of the transfer switch. The maximum voltage corresponds to the peak envelope power of the video signal during maximum amplitude peaks. In either position of the receiver transfer switch, the maximum voltage at the receiving antenna input terminals of the switch when terminated with a resistance matching the rated impedance of the antenna input of the switch, must not exceed $0.346R^{½}$ μV.
The maximum voltage corresponds to the peak envelope power of the video modulated signal during maximum amplitude.
The unused RF input/output terminals are terminated in a proper impedance. The antenna input terminals is connected to the input of preamplifier through the matching transformer coaxial cable.

8.5 Test procedure

8.5.1 connected the EUT as seen in 8.3
8.5.2 turn on the EUT for a warm up time period
8.5.3 tune the EUT to the desire frequency
8.5.4 conduct the measurement
8.5.5 repeat 8.5.3, 8.5.4, until all the frequency has been measured.

8.6 Test protocol

Temperature : 24.0°C Relative Humidity : 46%

Test mode: " Receiving and play TV"

Test channel	Emission frequency (MHz)	Meter reading (dBuV)	Correction factor (dB)	Emission level (dBuV)	Limit (dBuV)	Margin (dB)
3	61.25	-	0.2	-	9.5	-
4	67.25	-	0.2	-	9.5	-

Note:
1. No emission was observed during the test.
2. Spectrum analyzer setting : Frequency span: MHz, Resolution bandwidth 100kHz, Video bandwidth 3MHz, Detector function Peak mode.

Test Engineer: Zhiqing Li (Li Zhiqing) Date of test: 2002-10-23

8.7 Measurement uncertainty

Measurement uncertainty of antenna power conduction measurement is 2.82dB
The measurement uncertainty is given with a confidence of 95%

9. Sample field strength calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor.

The basic equation with a sample calculation is as follows:

FS = RA + AF + CL + (IL)

Where FS = Field strength
RA= Receiver Amplitude
AF = Antenna factor
CL = Cable loss
IL = Insertion loss where applicable

dB(μV/m) = 20lg(μV/m)
dBμV = dBm + 107

Example 1: @ 2.65897 MHz

Class B limit = 250 μV = 48.0 dBμV
Reading level = 44.03 dB
Cable loss = 0.10 dB
Insertion loss = 0.90 dB

So FS (Emission level) = 44.03+0.10+0.90 = 45.03 dBμV
Margin = 48.0 – 45.03 = 2.97 dB

Emission level 2.97dB below the limit.

Example 2: @ 704.2 MHz

Class B limit = 200 μV = 46.0 dBμV/m
Reading level = 23.1 dBμV/m
Antenna factor + Cable loss = 20.8 dB
FS (emission level) = 43.9 dBμV/m
Margin = 46.0 – 43.9 = 2.1 dB

Emission level 2.1dB below the limit.