



EMC TEST REPORT

Report No. : TS08110027-EME(R2)
Model No. : TTD-61R, TTD-61RS(A),
TTD-61RS(B)
Issued Date: Apr. 27, 2012

Applicant: Tranwo Technology Corp.
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Test Method/Standard: FCC Part 15 Subpart C Section §15.205 、 §15.207 、 §15.209 、
§15.247, DA 00-705 and ANSI C63.4/2003.

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Summary of Tests

Digital Wireless Video Baby Monitor -Model: TTD-61R
FCC ID: O6LTTD-61R

Test	Reference	Results
Radiated Spurious Emission test	15.205, 15.209	Pass



1. General information

1.1 Identification of the EUT

Product: Digital Wireless Video Baby Monitor
Model No.: TTD-61R
FCC ID.: O6LTTD-61R
Frequency Range: 2408.63 MHz ~ 2469.38 MHz
Channel Number: 18 channels
Type of Modulation: FSK
Rated Power: DC 6 V from Adapter
Power Cord: N/A
Data Cable: N/A
Sample Received: Mar. 23, 2012
Test Date(s): Mar. 29, 2012
Note 1:

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Note 2: When determining the test conclusion, the Measurement Uncertainty of test has been considered.

1.2 Adapter information

The EUT will be supplied with a power supply from below list:

No.	Brand	Model no.	Specification
Adapter	SALOM	SSW-2256US	I/P: 100-240 Vac, 50-60 Hz, 0.2 A O/P: 6.0 Vdc, 800 mA



1.3 Additional information about the EUT

The customer confirmed the models listed as below were series model to model and TTD-61R (EUT), the difference between main model and series model are listed as below.

Model Number	Type	Difference
TTD-61RS(A)	Monitor	Different appearance with TTD-61RS(B)
TTD-61RS(B)		Different appearance with TTD-61RS(A)

The EUT is Digital Wireless Video Baby Monitor, and was defined as information technology equipment.

For more detail features, please refer to User's manual as file name "Installation guide.pdf"

Modification (R1) to test report No. TS08110027-EME (Verification No.: TS08110027-EME)

The original Test Report Ref. No. TS08110027-EME, dated November 11, 2008 was modified on July 29, 2010 to include the following changes and/or additions, which were considered technical modifications:

1. Add one adapter model No.: CS5B060080FU
2. Add one battery.
3. Change components.

After engineer judgment, the difference does not affect the RF characteristic; the model was evaluated and deemed as meet the standards requirement, no additional tests were considered necessary.

Modification (R2) to test report No. TS08110027-EME (Verification No.: TS08110027-EME)

The original Test Report Ref. No. TS08110027-EME, dated November 11, 2008 was modified on Nov. 03, 2010 to include the following changes and/or additions, which were considered technical modifications:

Change the PCBA grounding of TTD-61R

After engineer judgment, the difference does not affect the RF characteristic; the model was evaluated and deemed as meet the standards requirement, no additional tests were considered necessary.



Modification (R3) to test report No.: TS08110027-EME(R2)

The original Test Report Ref. No.: TS08110027-EME(R2), dated Nov. 03, 2010 was modified on Apr. 29, 2012 to include the following changes and/or additions, which were considered technical modifications:

Add two series models, the difference between main model and series model are listed as below

Model Number	Type	Difference
TTD-61RS(A)	Camera	Different appearance with TTD-61RS(B)
TTD-61RS(B)		Different appearance with TTD-61RS(A)

Change main chip, Mic. type and circuit

After engineer judgment, the test was considered necessary. See the “Test summary”.

1.4 Antenna description

The antenna is affixed to the EUT using a unique connector, which allows for replacement of a broken antenna, but DOES NOT use a standard antenna jack or electrical connector.

Antenna Gain 1.5 dBi max
Antenna Type Monopole antenna
Connector Type N/A

2. Test specifications

2.1 Test standard

The EUT was performed according to the procedures in FCC Part 15 Subpart C Section § 15.205 、§15.207 、 §15.209 、 §15.247, DA 00-705 and ANSI C63.4/2003.

The test of radiated measurements according to FCC Part15 Section 15.33(a) had been conducted and the field strength of this frequency band was all meet limit requirement, thus we evaluate the EUT pass the specified test.

2.2 Operation mode

The EUT was supplied with DC 6 V from adapter (Test voltage: 120Vac, 60Hz) and it was run in TX mode that was controlled by “ENG Mode” program.

Frequency (MHz)	Channel
2408.63	0
2412.00	6
2415.38	12
2418.75	1
2423.25	7
2426.63	13
2430.00	2
2433.38	8
2436.75	14
2440.13	3
2444.63	9
2448.00	15
2451.38	4
2454.75	10
2458.13	16
2462.63	5
2466.00	11
2469.38	17

2.3 Test equipment

Equipment	Brand	Model No.	Serial No.	Calibration Date	Next Calibration Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100018	2011/12/6	2012/12/4
Spectrum Analyzer	Rohde&schwarz	FSP30	100137	2011/6/29	2012/6/28
Spectrum Analyzer	Rohde&schwarz	FSEK30	100186	2012/2/6	2013/2/5
Horn Antenna (1-18G)	Schwarzbeck	BBHA 9120 D	9120D-456	2010/8/31	2012/8/30
Horn Antenna (14-42G)	SHWARZBECK	BBHA 9170	BBHA9170159	2010/9/3	2012/9/2
Broadband Antenna	SCHWARZBEC K	VULB 9168	9168-172	2011/7/26	2013/7/25
Pre-Amplifier	MITEQ	AFS44-001026 50--42-10P-44	1495287	2011/10/27	2013/10/26
Pre-Amplifier	MITEQ	JS4-26004000-- 27-8A	828825	2010/9/8	2012/9/7
Power Meter	Anritsu	ML2495A	0844001	2011/10/13	2012/10/12
Power Sensor	Anritsu	MA2411B	0738452	2011/10/13	2012/10/12
Temperature&Humidity Test Chamber	TERCHY	MHU-225LRU(SA)	950838	2011/6/17	2012/6/16
Two-Line V-Network	Rohde&schwarz	ESH3-Z5	838979/014	2011/10/19	2012/10/18

Note: The above equipments are within the valid calibration period.

3. Radiated Emission test

3.1 Operating environment

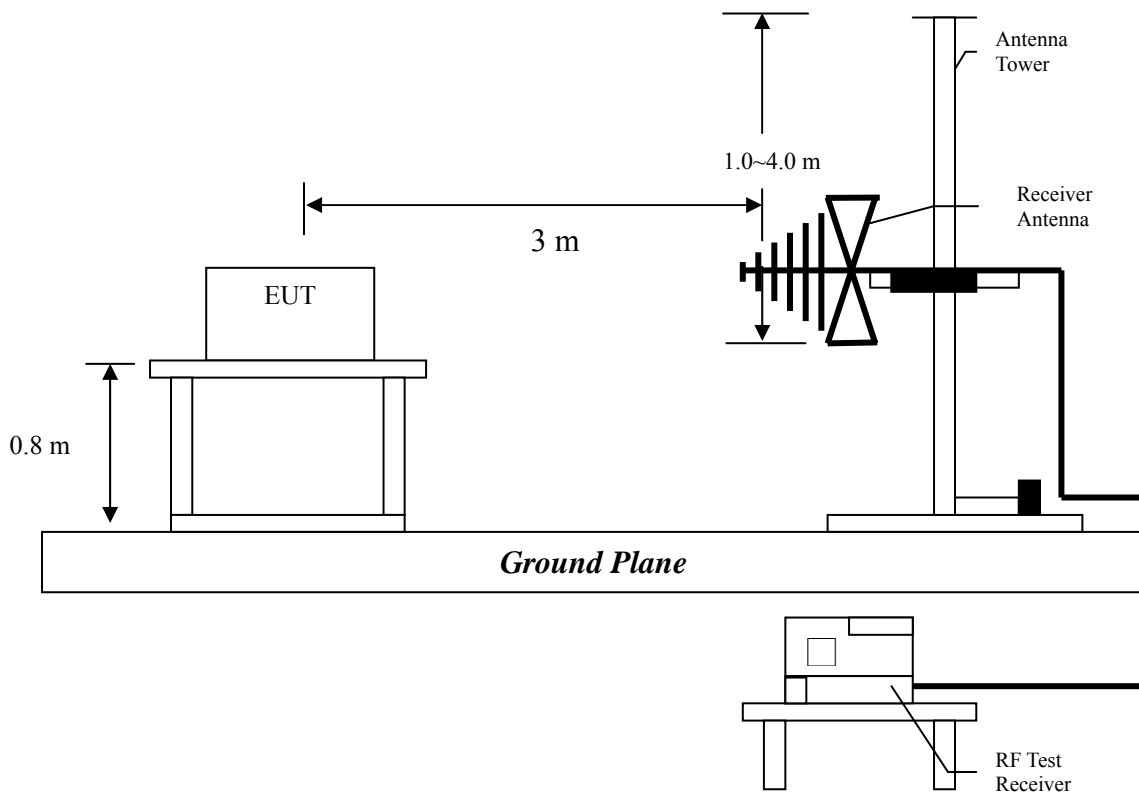
Temperature: 22 °C
Relative Humidity: 56 %
Atmospheric Pressure: 1008 hPa

3.2 Test setup & procedure

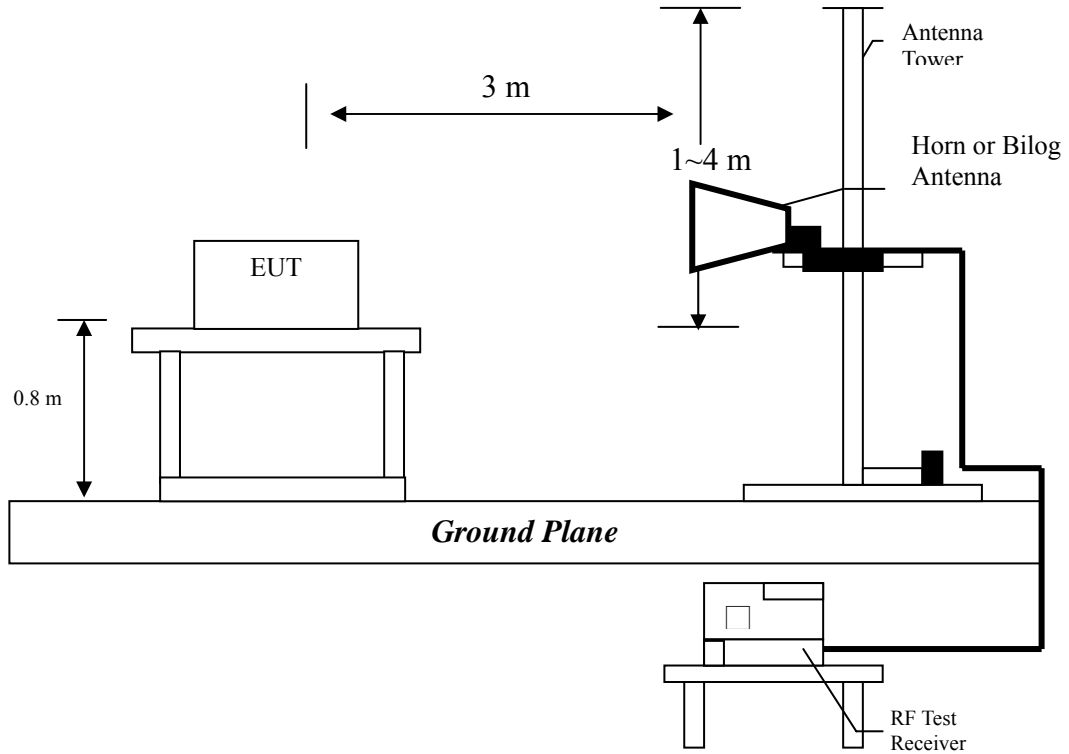
The test procedure was according to FCC measurement guidelines DA 00-705 and ANSI C63.4/2003.

The Diagram below shows the test setup, which is utilized to make these measurements.

The frequency spectrum from 30MHz to 1000MHz was investigated.



The frequency spectrum from over 1GHz was investigated.



Radiated emission measurements were performed from 30MHz to 25GHz. Spectrum Analyzer Resolution Bandwidth is 100kHz or greater for frequencies 30MHz to 1GHz, 1MHz – for frequencies above 1GHz.

The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter.

The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent 3 meter reading using inverse scaling with distance.

The EUT configuration please refer to the “Spurious set-up photo.pdf”.

3.3 Emission limits

The spurious Emission shall test through the 10th harmonic. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

Frequency (MHz)	Limits (dB μ V/m@3m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Remark:

1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

Measurement uncertainty was calculated in accordance with TR 100 028-1.

Parameter	Uncertainty
Radiated Emission	± 5.10 dB

3.4 Radiated spurious emission test data

3.4.1 Measurement results: frequencies equal to or less than 1 GHz

The test was performed on EUT under 2408.625 MHz, 2436.750 MHz and 2469.375 MHz continuously transmitting mode. The worst case occurred at 2408.625 MHz.

EUT : TTD-61R
 Worst Case : TX at 2408.625 MHz

Antenna Polariz. (V/H)	Freq. (MHz)	Receiver Detector	Corr. Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
V	53.28	QP	12.90	20.95	33.84	40.00	-6.16
V	83.35	QP	8.50	26.19	34.68	40.00	-5.32
V	168.71	QP	15.70	15.82	31.52	43.50	-11.98
V	335.55	QP	14.98	16.69	31.67	46.00	-14.33
V	431.58	QP	17.64	18.47	36.11	46.00	-9.89
V	527.61	QP	19.46	14.95	34.41	46.00	-11.59
V	623.64	QP	20.75	13.84	34.59	46.00	-11.41
H	84.32	QP	9.45	13.00	22.44	40.00	-17.56
H	168.71	QP	13.84	9.84	23.67	43.50	-19.83
H	335.55	QP	14.40	12.70	27.09	46.00	-18.91
H	431.58	QP	18.12	12.25	30.37	46.00	-15.63
H	527.61	QP	19.65	14.02	33.67	46.00	-12.33
H	623.64	QP	20.88	11.55	32.42	46.00	-13.58

Remark:

1. Corr. Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Corr. Factor



3.4.2 Measurement results: frequency above 1GHz

EUT : TTD-61R
Worst Case : TX at 2408.625 MHz

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
3210.00	PK	V	33.8	36.24	38.12	40.56	74	-33.44
4816.00	PK	V	35.1	38.54	41.55	44.99	74	-29.01
7224.00	PK	V	33.0	44.60	48.40	60.00	74	-14.00
4816.00	PK	H	35.1	38.54	43.26	46.70	74	-27.30
7224.00	PK	H	33.0	44.60	49.80	61.40	74	-12.60