

TEST NUMBER - 284-01

TESTING TO

INDUSTRY CANADA RSS 210 SECTION 6.2.2  
FEDERAL COMMUNICATIONS COMMISSION CFR47 PART 15.249

Low Power License-Exempt Radiocommunication Devices  
Intentional Radiators

for

Summer Infant, Inc.  
6 Blackstone Valley Place  
Lincoln, RI 02865  
(401) 334 9966 x11

of

900 MHz Video Baby Monitor

Model 02010

FCC ID#: PZK02010T

on

10/25/2001

Tested by

Andrew Mertinooke

Reviewed by

Clifton P. Brick

This report may not be duplicated, except in full without written permission from Compliance Worldwide, Inc.

TEST NUMBER - 284-01

## TABLE OF CONTENTS

- Test Description
- Test Results and Conclusions
- Test Procedures
- RSS 210 /Part 15 Subpart C Test Limits
- Test Facility Description
- Test Setup and Connection Information
- Test Measurements and Results
  - Radiated Measurements
  - Radiated Output Power & Occupied Bandwidth
  - Conducted Measurements
- Notes and Comments

TEST NUMBER - 284-01

TEST DESCRIPTION

1. TEST OBJECTIVE

To test the 900 MHz Video Baby Monitor model 02010 to RSS 210 / Part 15 Subpart C Rules and write a report.

2. E.U.T. DESCRIPTION

GENERAL

The 900 MHz Video Baby Monitor model 02010 is a baby monitor that transmits audio and video in the 902-928 MHz frequency band. The transmitter has a moveable video camera with IR LEDs for night vision.

SERIAL NUMBERS:

Pre Production Prototype

TEST NUMBER - 284-01

### TEST RESULTS AND CONCLUSIONS

PRODUCT TESTED - 900 MHz Video Baby Monitor

MODEL NUMBER - 02010

#### RADIATED TEST RESULTS

The test results show that the emissions radiated from this equipment are in compliance with IC Rules RSS 210 / FCC Rules Part 15 Subpart C.

#### OCCUPIED BANDWIDTH & OUTPUT POWER

The test results show that the occupied bandwidth and output power of this equipment are in compliance with IC Rules RSS 210 / FCC Rules Part 15 Subpart C .

#### CONDUCTED TEST RESULTS

The test results show that the emissions conducted through the power line from this equipment are in compliance with IC Rules RSS 210 / FCC Rules Part 15 Subpart C.

#### ANALYSIS AND CONCLUSIONS

Based upon the radiated and conducted measurements we find that this equipment is within the limits of the IC Rules RSS 210 / FCC Rules Part 15 Subpart C. All results are based on a test of one sample, and represent other production units, only in as much as a sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required.

**NOTES** (Special conditions unique to this test)

None

TEST NUMBER - 284-01

## TEST PROCEDURES

### 1. TEST EQUIPMENT

- A. HP 8546A (9 kHz - 6.5 GHz) EMI Receiver w/ RF Filter Section, S/N 3704A00323 / 3650A00360. Calibration Date 10-17-2001, calibrated annually.
- B. HP 8593E (9 kHz - 26.5 GHz) Spectrum Analyzer, S/N 3829A03887. Calibration Date 7-25-2001, calibrated annually.
- C. Electro-Metrics BiConical Antenna, Model EM6912A, S/N 149. Calibration Date 1-2-2001, calibrated annually.
- D. Electro-Metrics Log Periodic Antenna, Model EM-6950, S/N 1017. Calibration Date: 1-2-2001, calibrated annually.
- E. Electro-Metrics Double Ridged Guide Antenna, Model EM-6961, S/N 6337. Calibration Date: 7-27-2001, calibrated annually.
- F. HP 1 - 26.5 GHz Preamplifier, Model 08449B, S/N 3008A01323. Calibration Date: 7-25-2001, calibrated annually.
- G. EMCO LISN, Model EM 3825/2, S/N 9109-1860. Calibration Date: 2-22-2001, calibrated annually.

### 2. FREQUENCY RANGE TO BE SCANNED.

- A. Radiated Test from 30 MHz to 40 GHz (or the 10<sup>th</sup> harmonic of the highest frequency whichever is lower).
- B. Conducted Test from 450 kHz to 30 MHz.

TEST NUMBER - 284-01

### 3. TEST PROCEDURES.

#### **Radiated test procedure:**

The EUT, associated cables and peripheral devices are placed on the supporting table and any support equipment is placed off the site. The EUT is turned on and any necessary operating or test software installed and allowed to warm up. The EUT is pre-scanned in our ferrite tile lined chamber where it is rotated 360 degrees and examined in both horizontal and vertical polarization, the equipment was examined in three orthogonal planes, all emission frequencies are identified and recorded. The EUT is then moved to the OATS and the frequency band from 30 MHz to 40 GHz is scanned, all frequencies identified in the chamber are investigated, as well as harmonic frequencies of the EUT. When an emission is found the emission is maximized by varying the bundle position of the connecting cables, the antenna height, the antenna polarization (vertical and horizontal) and the table orientation (360 degrees). The maximum reading is recorded and the next signal is searched for.

#### **Conducted test procedure:**

The power line of the EUT is connected to the LISN (Line Impedance Stabilization Network). A measurement of the emissions are made from the power line for both phase and neutral on the analyzer in the frequency range from 450 kHz to 30 MHz. The maximum readings are recorded for each phase.

All measurements are made according to the procedures defined in: "ANSI C63.4-1992 Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz, American National Standard for (ISBN 1-55937-215-5).

TEST NUMBER - 284-01

**RSS 210 TEST LIMITS**

1. RSS 210 Section 6.2.2, Table 3 Radiation Limits (Quasi-Peak):  
FCC Part 15.209, 15.235, 15.249 Radiation Limits (Quasi-Peak):

Frequency MHz	Distance meters	Limit dB $\mu$ V/m	Limit $\mu$ V/m
1.705 - 30	30	29.5*	30*
30 - 88	3	40.0	100
49.82 - 49.90	3	80.0*	10,000*
88 - 216	3	43.5	150
216 - 960	3	46.0	200
902 - 928	3	94.0	50,000
960 - 1000	3	54.0	500
1000 - 40000	3	54.0*	500*

\*NOTE: Average Limits

2. RSS 210 Section 6.6a Conduction Limits (Quasi-Peak):  
FCC Part 15.207 Conduction Limits (Quasi-Peak)

Frequency MHz	Limit dB $\mu$ V/m	Limit $\mu$ V/m
0.450 - 30.0	48.0	250

TEST NUMBER - 284-01

### TEST FACILITY DESCRIPTION

Compliance Worldwide is located on 357 Main Street in Sandown, New Hampshire. The conducted and radiated test sites, located at C.W. are used for Federal Communications Commission (FCC) testing and Industry Canada Testing. A site description is on file with the FCC in Columbia, MD USA. Site information is also on file with Industry Canada, anyone wishing to review this Test Facility Description is referred to file number **IC 3023**. This is currently on file at Industry Canada, 1241 Clyde Avenue, Ottawa, ON K2C 1Y3.

The radiated site is a 3/10 meter indoor site with an enclosure for the product and a basement for the personnel, support equipment and test equipment.

The conducted site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical metal wall required by EN 55022.

Both sites are designed to test products or systems 1.5 meter x 1.0 meter, floor standing or table top.

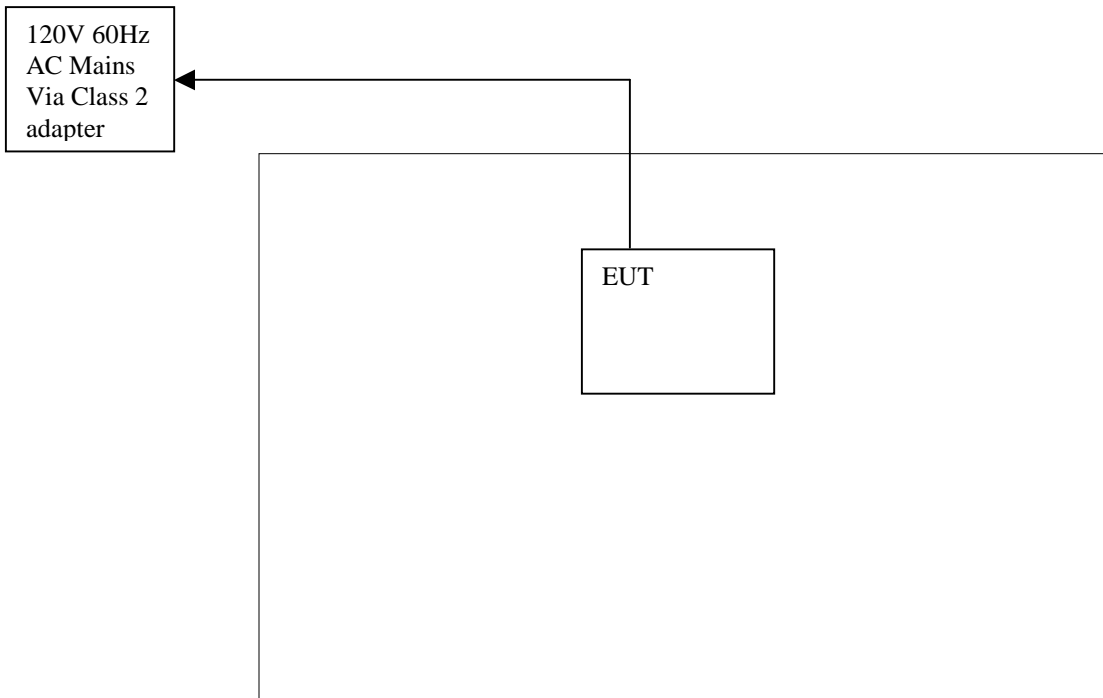
**DATE ON FILE FCC: August 10, 2000**

**DATE ON FILE IC: August 11, 2000**



TEST NUMBER - 284-01

**TEST SET UP  
AND  
PERIPHERAL CONNECTION INFORMATION**



TEST NUMBER - 284-01

PLEASE NOTE - EUT (equipment under test) is 900 MHz Video Baby Monitor.

The cables directly connected to this equipment are listed below. Please see below for a complete list of FCC ID's etc. on the supporting equipment.

### Connection Descriptions

1. Power Cable  
\_\_\_\_\_  
(description)  
  
EUT  
\_\_\_\_\_  
(from device)  
  
AC Mains via class 2 adapter power supply  
\_\_\_\_\_  
(to device)  
  
CABLE LENGTH 2m (S) SHIELDED or (U) UNSHIELDED U
  
2. N/A  
\_\_\_\_\_  
(description)  
  
\_\_\_\_\_  
(from device)  
  
\_\_\_\_\_  
(to device)  
  
CABLE LENGTH \_\_\_\_\_ (S) SHIELDED or (U) UNSHIELDED \_\_\_\_\_
  
3. N/A  
\_\_\_\_\_  
(description)  
  
\_\_\_\_\_  
(from device)  
  
\_\_\_\_\_  
(to device)  
  
CABLE LENGTH \_\_\_\_\_ (S) SHIELDED or (U) UNSHIELDED \_\_\_\_\_

TEST NUMBER - 284-01

### RADIATED TEST RESULTS

Frequency Range: 30 MHz - 10 GHz  
Measurement Distance: 3.0 Meters.  
Bandwidth: 120 kHz, Per ANSI C63.4-1992.\*  
Detector Functions: Peak, Quasi Peak, Average  
Video Filter: 300 kHz  
Table Height: 0.8 meters  
Antenna Height Variation: 1 - 4 Meters.  
Horizontal and Vertical Polarization Measurements Taken, worst case reported.

\*Measurement Bandwidth is 1 MHz above 1 GHz

**PLEASE SEE NEXT PAGE FOR RADIATED TEST DATA**

TEST NUMBER - 284-01

**Radiated Channel A Tabular Data**

Pol. (H/V)	Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	Peak Amplitude (dBuV/m)	QP/Avg Amplitude (dBuV/m)	QP/Avg Limit (dBuV/m)	QP/Avg Margin (dBuV/m)
V	900.1	148	1.7	43.4	40.2	46	-5.8
V	895.5	138	1.7	40.6	37.6	46	-8.4
V	891.2	94	1.2	36.6	32.7	46	-13.3
V	1818	190	1.8	50.5	46.2*	54.0*	-7.8
V	2727	180	2.2	54.3	49.6*	54.0*	-4.4
H&V	3636	Greater than 15 dB below limit.					
H&V	4545	Greater than 15 dB below limit.					
6 <sup>th</sup> Through the 10 <sup>th</sup> harmonic, all are greater than 15 dB below limit.							

\* Denotes an average detector value.

**Radiated channel B Tabular Data**

Pol. (H/V)	Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	Peak Amplitude (dBuV/m)	QP/Avg Amplitude (dBuV/m)	QP/Avg Limit (dBuV/m)	QP/Avg Margin (dBuV/m)
H&V	899.7	Greater than 20 dB below limit.					
H&V	895.2	Greater than 20 dB below limit.					
V	931.1	248	1.7	44.9	41.6	46.0	-4.4
V	935.8	234	1.7	47.4	44.4	46.0	-1.6
V	1844	254	1.9	46.6	40.5*	54.0*	-13.5*
V	2766	180	2.3	55.3	47.6*	54.0*	-6.4*
H&V	3688	Greater than 15 dB below limit.					
H&V	4611	Greater than 15 dB below limit.					
6 <sup>th</sup> Through the 10 <sup>th</sup> harmonic, all are greater than 15 dB below limit.							

\* Denotes an average detector value.

TEST NUMBER - 284-01

**RADIATED OUTPUT POWER & OCCUPIED BANDWIDTH TEST RESULTS**

Frequency Range: 902 - 928 MHz.  
Measurement Distance: 3.0 Meters.  
Bandwidth: As Noted, Per ANSI C63.4-1992.  
Detector Functions: Peak, Quasi Peak, Average.  
Video Filter: 300 kHz  
Table Height: 0.8 meters  
Antenna Height Variation: 1 - 4 Meters.  
Horizontal and Vertical Polarization Measurements Taken, Worst Case Reported.

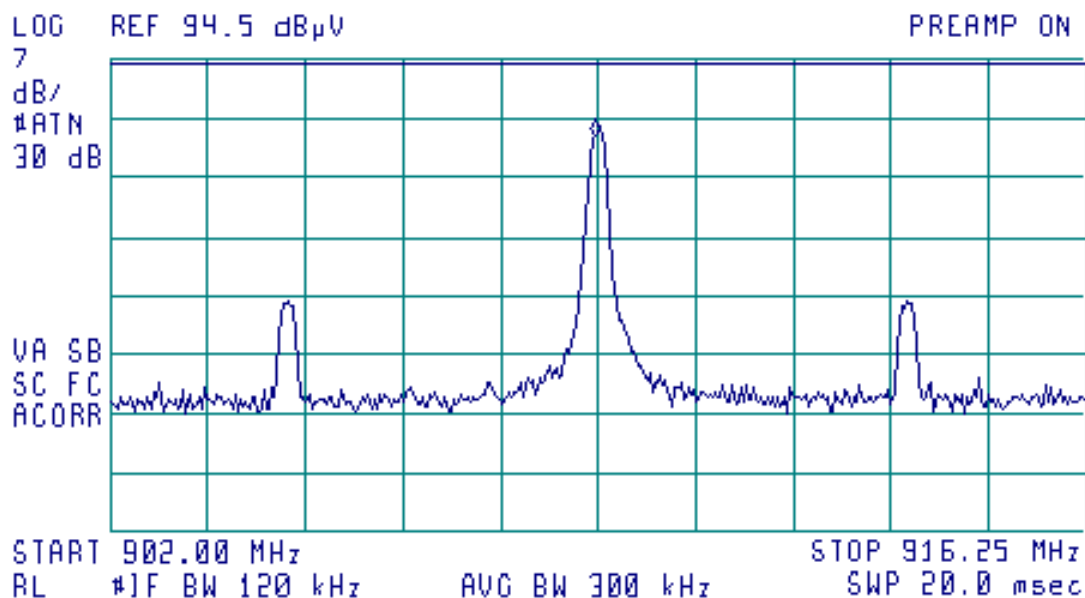
**PLEASE SEE NEXT PAGE(S) FOR OCCUPIED BANDWIDTH RADIATED TEST DATA**

TEST NUMBER - 284-01

Channel A Output Power and occupied bandwidth Plot  
(at max. modulation EUT transmission is within the band)

16:38:27 OCT 25, 2001 OUTPUT POWER AND OCC.BW  
TEST 284-01 SUMMER INFANT 900MHZ VIDEO TX

FREQ 909.1 MHz  
PEAK 87.3 dBμV  
QP NOT SELECTED  
AVG 79.9 dBμV



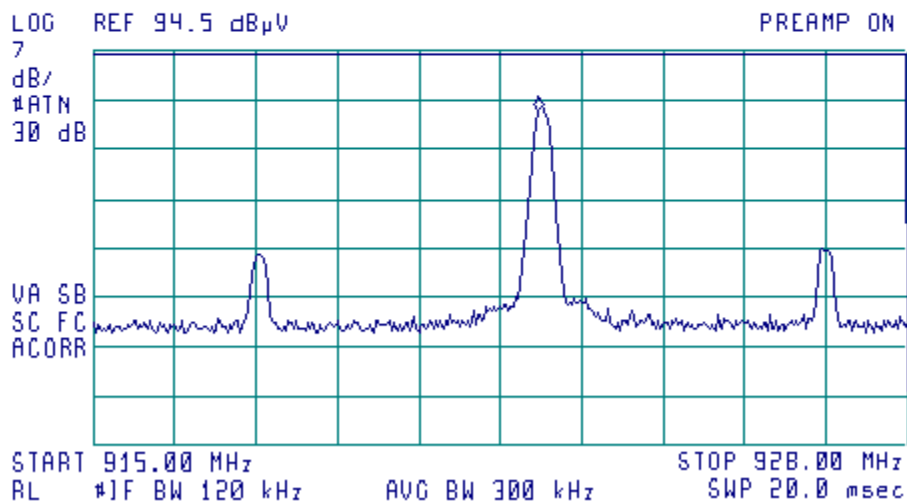
Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	Peak Amplitude (dBuV/m)	Avg Amplitude (dBuV/m)	QP Limit (dBuV/m)	Peak Margin (dBuV/m)
909.1	54	1.8	87.3	79.9	94.0	-6.7
904.6	54	1.8	67.3	62.0	94.0	-26.7
913.6	54	1.8	66.5	60.7	94.0	-27.5

TEST NUMBER - 284-01

**Channel B Output Power and occupied bandwidth Plot  
(at max. modulation EUT transmission is within the band)**

16:52:11 OCT 25, 2001 OUTPUT POWER AND OCC.BW  
TEST 284-01 SUMMER INFANT 900MHZ VIDEO TX

FREQ 922.1 MHz  
PEAK 87.1 dBμV  
QP NOT SELECTED  
AVG 79.7 dBμV



Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	Peak Amplitude (dBuV/m)	Avg Amplitude (dBuV/m)	QP Limit (dBuV/m)	Peak Margin (dBuV/m)
922.1	60	1.7	87.1	79.7	94.0	-6.9
917.7	60	1.7	66.0	57.9	94.0	-28.0
926.6	60	1.7	67.4	61.0	94.0	-26.6

TEST NUMBER - 284-01

### CONDUCTED TEST RESULTS

Frequency Range: 450 kHz to 30.0 MHz.  
Bandwidth: 9 kHz per ANSI C63.4-1992.  
Detector Functions: Peak, Quasi-Peak, Average  
Table Height: 0.8 meters  
Video Bandwidth: 30 kHz.

Phase and Neutral Measurements Taken.

**PLEASE SEE NEXT PAGE FOR CONDUCTED TEST DATA**

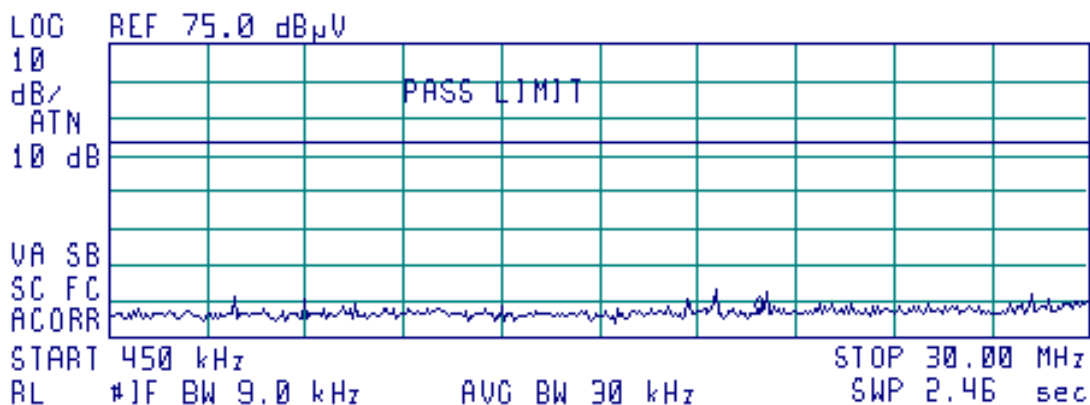


TEST NUMBER - 284-01

Conducted 120V 60Hz Neutral Data Log Plot

15:10:05 OCT 01 2001 120V 60HZ CONDUCTED NEUTRAL  
TEST # 283-01 SUMMER INFANT PRODUCTS TX  
Signal Freq (MHz) PK Amp QP Amp AV Amp

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR 20.03 MHz  
1.64 dB $\mu$ V



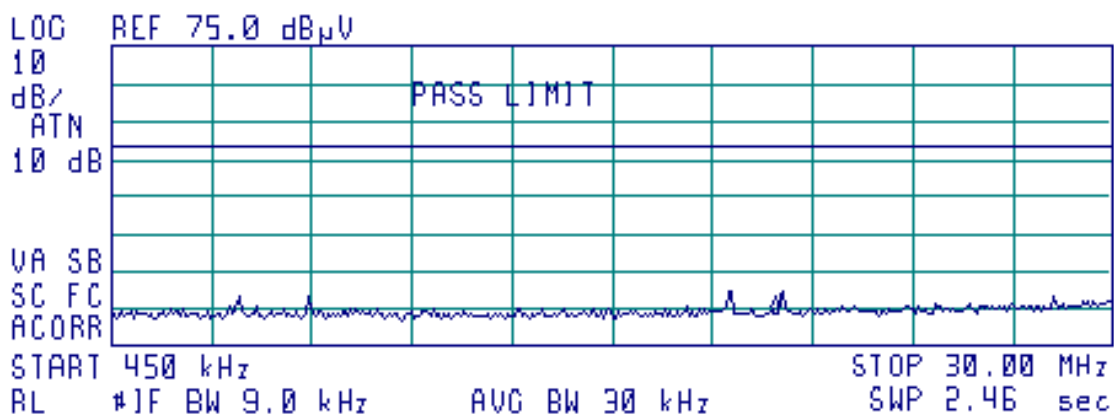
(Peak detector used, max held)

TEST NUMBER - 284-01

Conducted 120V 60Hz Phase Data Log Plot

15:03:54 OCT 01 2001 120V 60HZ CONDUCTED PHASE  
TEST # 283-01 SUMMER INFANT PRODUCTS TX  
Signal Freq (MHz) PK Amp QP Amp AV Amp

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR 20.03 MHz  
3.73 dBµV



(Peak detector used, max held)

TEST NUMBER - 284-01

**NOTES AND COMMENTS**

(Special conditions unique to this test)

None