

TEST NUMBER - 332-02

TEST REPORT TO

INDUSTRY CANADA RSS 210 SECTION 6.2.2
FEDERAL COMMUNICATIONS COMMISSION CFR47 PART15.249

Low Power License-Exempt Radiocommunication Devices
Intentional Radiators

for

Summer Infant Products
6 Blackstone Valley Place
Lincoln, RI 02865
(401) 334 9966

of

3 channel video baby monitor

02080

FCC ID#: PZK-02080T

on

12/12/02

Tested by

Clifton P. Brick

Reviewed by

Larry K. Stillings

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TEST DESCRIPTION

1. TEST OBJECTIVE

To test the 3 channel video baby monitor 02080 to RSS 210 / Part 15 Subpart C Rules and write a report.

2. E.U.T. DESCRIPTION

GENERAL

The 02080 is a 3 channel video baby monitor that operates in the 902-928 MHz Frequency Band. Its 3 channels are centered on 906, 915 and 924 MHz, with Audio carrier 3 MHz spacing from the center video channel. The Audio is frequency modulated and the video is amplitude modulated.

SERIAL NUMBERS:

production prototype

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TEST RESULTS AND CONCLUSIONS

PRODUCT TESTED - 3 channel video baby monitor

MODEL NUMBER - 02080

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

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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 10-25-2002, calibrated annually.
- B. HP 8593E (9 kHz - 26.5 GHz) Spectrum Analyzer, S/N 3829A03887. Calibration Date 9-12-2002, calibrated annually.
- C. Com-Power Biconilog Antenna, Model AC220, S/N 25509. Calibration Date 12-14-2001, calibrated annually.
- D. Electro-Metrics Double Ridged Guide Antenna, Model EM-6961, S/N 6337. Calibration Date: 7-17-2002, calibrated annually.
- E. HP 1 - 26.5 GHz Preamplifier, Model 08449B, S/N 3008A01323. Calibration Date: 9-12-2002, calibrated annually.
- F. EMCO LISN, Model EM 3825/2, S/N 9109-1860. Calibration Date: 3-11-2002, calibrated annually.

2. FREQUENCY RANGE TO BE SCANNED.

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

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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, examined at 85 and 115 percent of input voltage or if battery operated new batteries were used. 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).

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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 μ V/m	Limit μ 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 μ V/m	Limit μ V/m
0.450 - 30.0	48.0	250

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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.

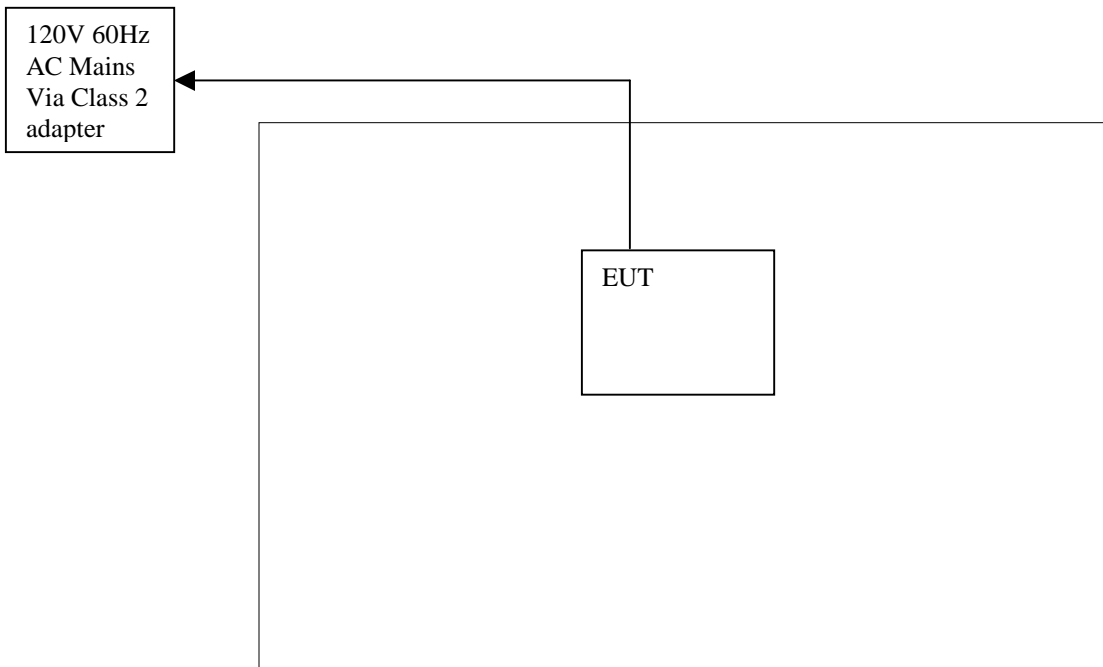
Both sites are designed to test products or systems 1.5 meter x 1.0 meter, floor standing or table top.

DATE ON FILE FCC: August 10, 2000

DATE ON FILE IC: August 11, 2000

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TEST SET UP
AND
PERIPHERAL CONNECTION INFORMATION



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PLEASE NOTE - EUT (equipment under test) is 02080 3 channel video baby monitor.

The cables directly connected to this equipment are listed below.

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 _____

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RADIATED TEST RESULTS

Frequency Range: 30 - 10,000 MHz.
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.

*Measurement Bandwidth is 1 MHz above 1 GHz

PLEASE SEE NEXT PAGE FOR RADIATED TEST DATA

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Radiated Channel A Tabular Data

Pol. (H/V)	Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	QP/Avg Amplitude (dBuV/m)	QP/Avg Limit (dBuV/m)	QP/Avg Margin (dBuV/m)
V	899.8	200	1.1	45.3	46	-0.7
V	896.8	200	1.2	40.3	46	-5.7
V	893.6	98	1.1	29.8	46	-16.2
V	890.8	4	1.2	31.1	46	-14.9
V	1.812 GHz	338	1.1	51.3*	54	-2.7
V	2.718 GHz	264	2.3	53.4*	54	-0.6
V	3.624 GHz	244	2.0	45.9*	54	-8.1
V	4.530 GHz	274	2.3	51.9*	54	-2.1
V	5.436 GHz	208	2.2	43.7*	54	-10.3
V	6.342 GHz	354	1.7	43.6*	54	-10.4

8th Through the 10th 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)	QP/Avg Amplitude (dBuV/m)	QP/Avg Limit (dBuV/m)	QP/Avg Margin (dBuV/m)
V	1.830 GHz	50	1.0	51.3*	54	-2.7
V	2.745 GHz	40	2.3	53.5*	54	-0.5
V	3.660 GHz	288	1.6	43.6*	54	-10.4
V	4.575 GHz	254	1.4	51.4*	54	-2.6
V	5.490 GHz	218	1.6	41.4*	54	-12.6
V	6.405 GHz	4	1.7	43.9*	54	-10.1

8th Through the 10th harmonic, all are greater than 15 dB below limit.

* Denotes an average detector value.

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Radiated channel C Tabular Data

Pol. (H/V)	Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	QP/Avg Amplitude (dBuV/m)	QP/Avg Limit (dBuV/m)	QP/Avg Margin (dBuV/m)
V	929.9	200	1.2	41.5	46	-4.5
V	933.2	188	1.0	40.5	46	-5.5
V	936.3	174	1.0	29.9	46	-16.1
V	939.2	180	1.0	28.7	46	-17.3
V	1.848 GHz	344	1.1	49.4*	54	-4.6
V	2.772 GHz	164	1.6	53.0*	54	-1.0
V	3.696 GHz	244	2.0	38.9*	54	-15.1
V	4.620 GHz	168	1.9	51.2*	54	-2.8
V	5.544 GHz	218	2.8	40.8*	54	-13.2
V	6.468 GHz	354	2.0	42.6*	54	-11.4

8th Through the 10th harmonic, all are greater than 15 dB below limit.

* Denotes an average detector value.

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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.

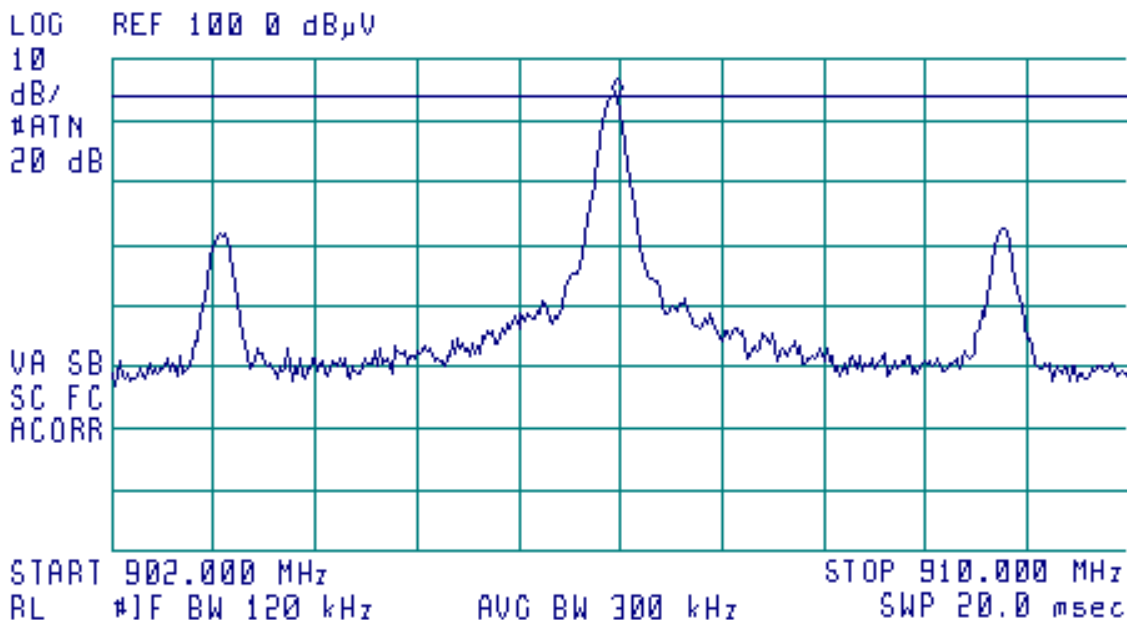
PLEASE SEE NEXT PAGE(S) FOR OCCUPIED BANDWIDTH RADIATED TEST DATA

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

15:51:09 DEC 12, 2002 CH.A OCC.BW&OUTPUT POWER
TEST#332-02 SUMMER INFANT 900MHZ VIDEO 3CH 02000T

FREQ 906.0 MHz
PEAK 94.9 dBμV
QP 93.1 dBμV
AVG NOT SELECTED



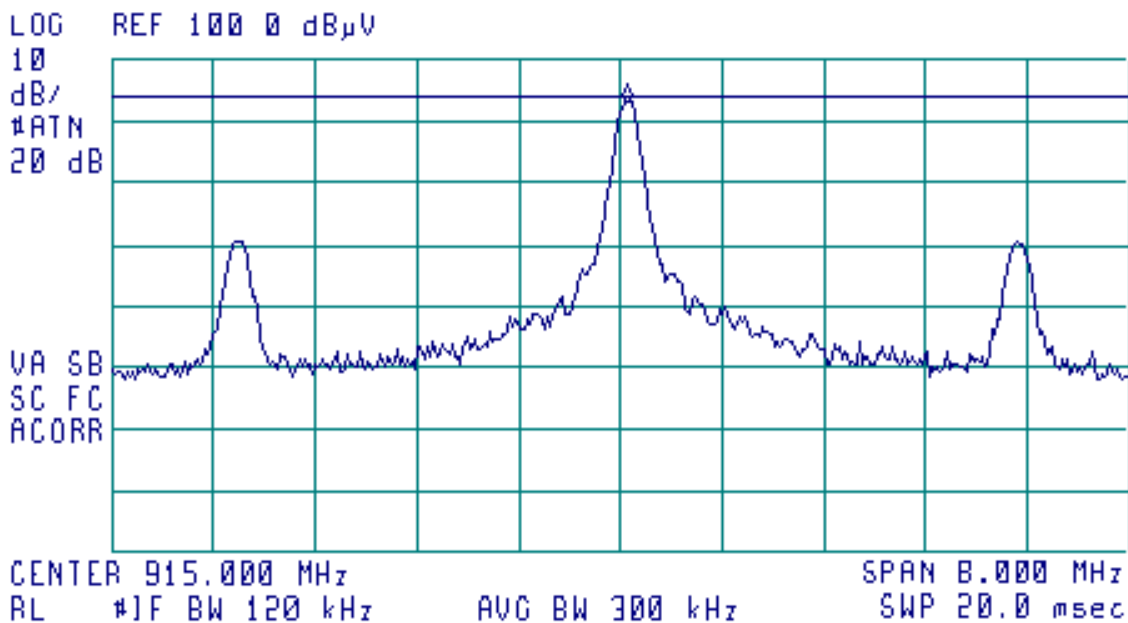
Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	QP Amplitude (dBuV/m)	QP Limit (dBuV/m)	QPeak Margin (dBuV/m)
906.0	214	1.1	93.1	94.0	-0.9
902.9	214	1.1	70.9	94.0	-23.1
909.0	214	1.1	71.1	94.0	-22.9

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

15:43:54 DEC 12, 2002 CH.B OCC.BW&OUTPUT POWER
TEST#332-02 SUMMER INFANT 900MHZ VIDEO 3CH 02000T

FREQ 915.1 MHz
PEAK 93.9 dB μ V
QP 92.7 dB μ V
AVG NOT SELECTED



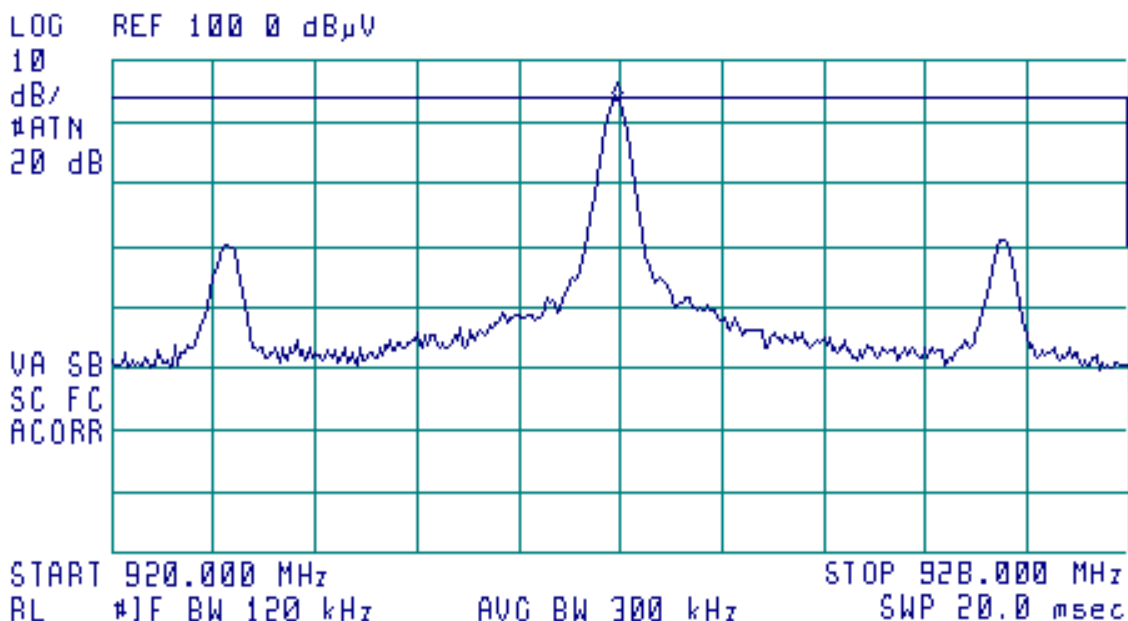
Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	QP Amplitude (dB μ V/m)	QP Limit (dB μ V/m)	QPeak Margin (dB μ V/m)
915.1	224	1.1	92.7	94.0	-1.3
912.1	224	1.1	70.1	94.0	-23.9
918.1	224	1.1	69.7	94.0	-24.3

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**Channel C Occupied Bandwidth and Output Power Plot
(at max. modulation EUT transmission is within the band)**

15:36:50 DEC 12, 2002 CH.C OCC.BW&OUTPUT POWER
TEST#332-02 SUMMER INFANT 900MHZ VIDEO 3CH 02000T

FREQ 924.0 MHz
PEAK 92.9 dBμV
QP 91.7 dBμV
AVG NOT SELECTED



Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	QP Amplitude (dBuV/m)	QP Limit (dBuV/m)	QPeak Margin (dBuV/m)
924.0	240	1.1	91.7	94.0	-2.3
921.0	240	1.1	69.7	94.0	-24.3
927.0	240	1.1	70.2	94.0	-23.8

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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

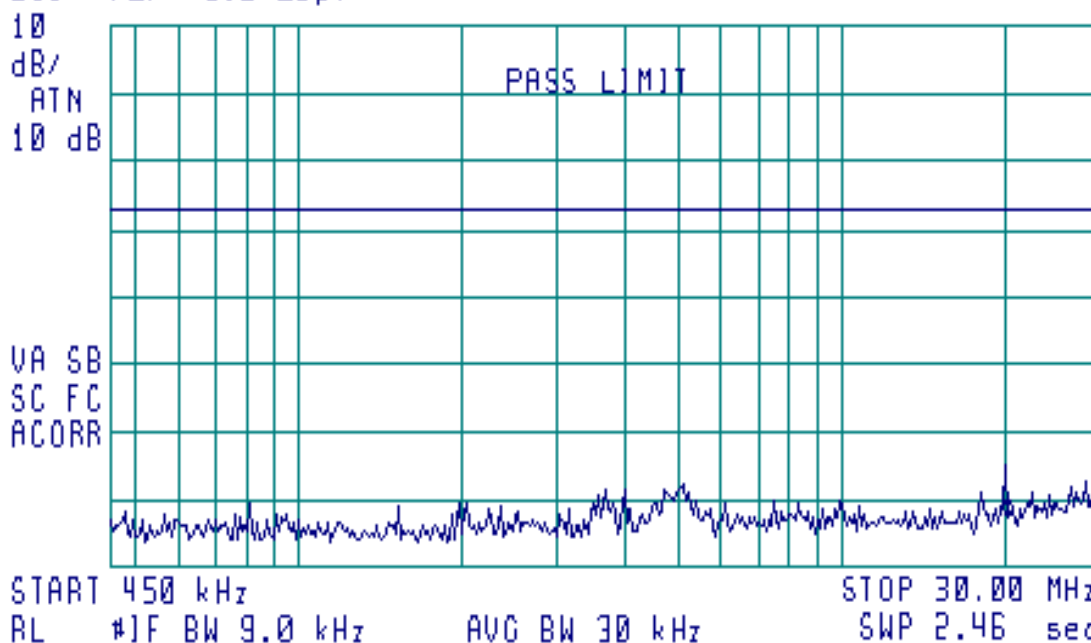
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Conducted 120V 60Hz Neutral Data Log Plot

TEST#332-02 SUMMER INFANT 02000 TX

FREQ	20.00 MHz
PEAK	11.3 dB μ V
QP	8.3 dB μ V
AVG	5.1 dB μ V

LOG REF 75.0 dB μ V



Peak Detector Used, Max Held.

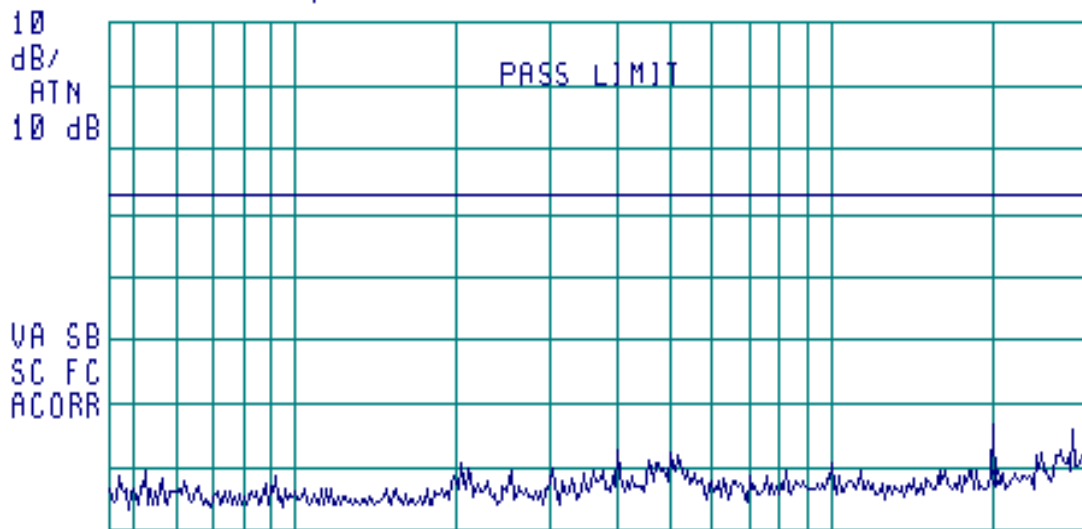
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Conducted 120V 60Hz Phase Data Log Plot

TEST#332-02 SUMMER INFANT 02080 TX

FREQ	20.00 MHz
PEAK	11.7 dB μ V
QP	8.2 dB μ V
AVG	5.0 dB μ V

LOG REF 75.0 dB μ V



START 450 kHz STOP 30.00 MHz
RL #1F BW 9.0 kHz AVG BW 30 kHz SWP 2.46 sec

Peak Detector Used, Max held.

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NOTES AND COMMENTS

(Special conditions unique to this test)

None