

TEST NUMBER - 327-04

TEST REPORT TO

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

Low Power License-Exempt Radio communication Devices  
Intentional Radiators

for

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

of

900Mhz Baby's quiet sounds monitor with night light

Model 02120

FCC ID: PZK-02120T

on

9/20/2004

Tested by

Andrew J. Mertinooke

Reviewed by

Clifton P. Brick

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TEST DESCRIPTION

1. TEST OBJECTIVE

To test the 900Mhz FM baby Monitor Model 02120 to RSS 210 / Part 15 Subpart C Rules and write a report.

2. E.U.T. DESCRIPTION

GENERAL

The Model 02120 is a 900Mhz FM baby Monitor with night light.

SERIAL NUMBERS:

production prototype

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### TEST RESULTS AND CONCLUSIONS

PRODUCT TESTED - 900Mhz Monitor with temperature/humidity monitoring

MODEL NUMBER - 02120

### 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 1-16-2004, calibrated annually.
- B. HP 8593E (9 kHz - 26.5 GHz) Spectrum Analyzer, S/N 3829A03887. Calibration Date 11-21-2004, calibrated annually.
- C. Com-Power Biconilog Antenna, Model AC220, S/N 25509. Calibration Date 7-16-2004, calibrated annually.
- D. Electro-Metrics Double Ridged Guide Antenna, Model EM-6961, S/N 6337. Calibration Date: 7-30-2004, calibrated annually.
- E. HP 1 - 26.5 GHz Preamplifier, Model 08449B, S/N 3008A01323. Calibration Date: 1-7-2004, calibrated annually.
- F. EMCO LISN, Model EM 3825/2, S/N 9109-1860. Calibration Date: 3-10-2004, 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 150 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 dBμV/m	Limit μV/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	Quasi-Peak Limit dBμV	Average Limit dBμV
0.150 - 0.500	66 to 56	56 to 46
0.500 - 5.0	56	46
5.0 - 30.0	60	50

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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.

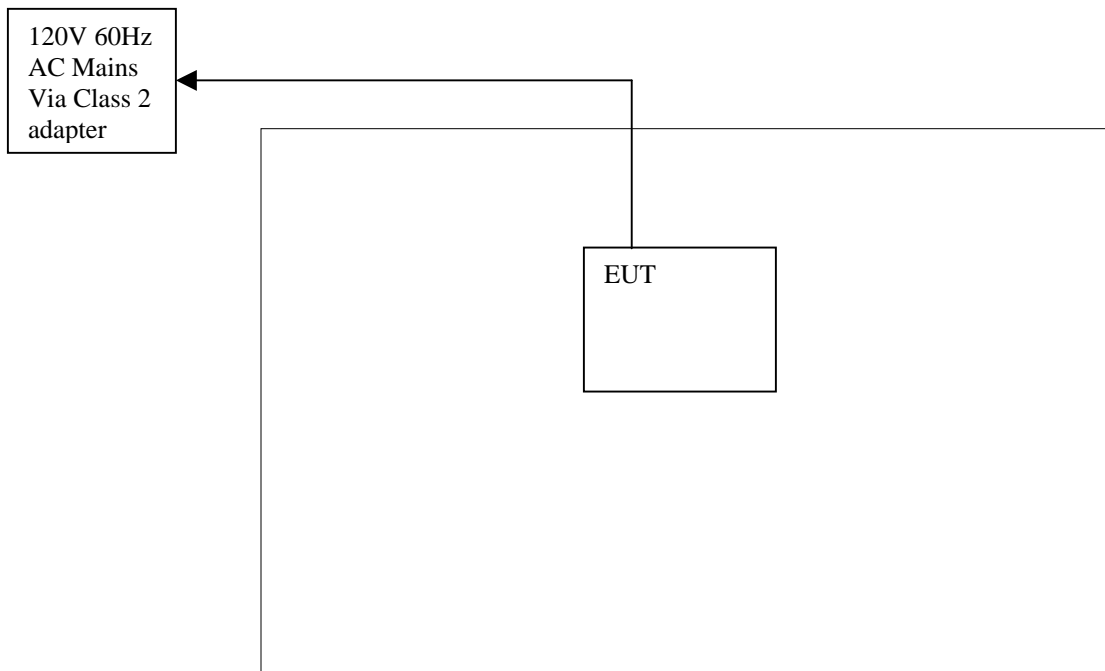
The conducted site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical metal wall required by EN 55022.

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



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TEST SET UP  
AND  
PERIPHERAL CONNECTION INFORMATION



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PLEASE NOTE - EUT (equipment under test) is 02120 900Mhz FM baby Monitor and night light.

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: 1.0 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)	Peak Amplitude (dBuV/m)	Avg Limit (dBuV/m)	Pk Margin (dBuV/m)
H	1808	53.4	64	-10.6
H	2712	45.6	64	-8.4
H	3616	39.3	64	-24.7

5<sup>th</sup> Through the 10<sup>th</sup> harmonic, all are greater than 15 dB below limit.

**Radiated Channel B Tabular Data**

Pol. (H/V)	Frequency (MHz)	Avg Amplitude (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dBuV/m)
H	1832	58.5	64	-5.5
H	2748	44.1	64	-19.9
H	3664	38.2	64	-25.8
H	4580	40.0	64	-24.0

6<sup>th</sup> Through the 10<sup>th</sup> harmonic, all are greater than 15 dB below limit.

❖ Measurements taken at 1 meter, limit adjusted by 10 dB from the 3M limit.

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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.

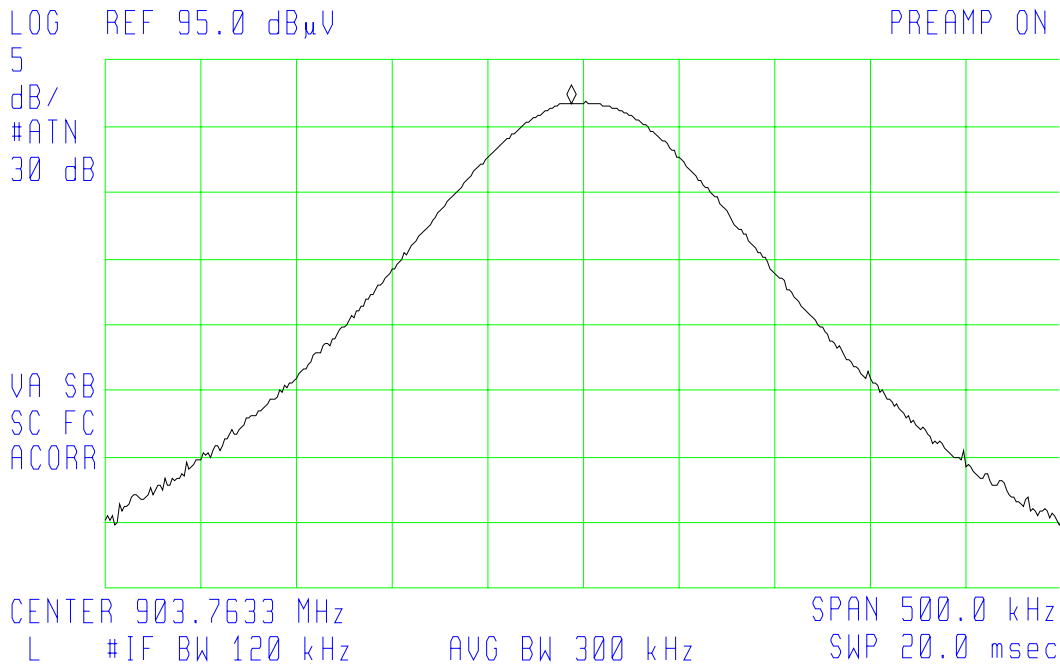
**PLEASE SEE NEXT PAGE(S) FOR OCCUPIED BANDWIDTH RADIATED TEST DATA**

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Lower Channel Output Power Plot

10:48:09 06 OCT 2004 CHB FEILD STRENGTH  
327-04 SUMMER INFANT 212 TRANSMITTER REV

FREQ 903.8 MHz  
PEAK 92.1 dB $\mu$ V  
QP 91.8 dB $\mu$ V  
AVG 91.7 dB $\mu$ V



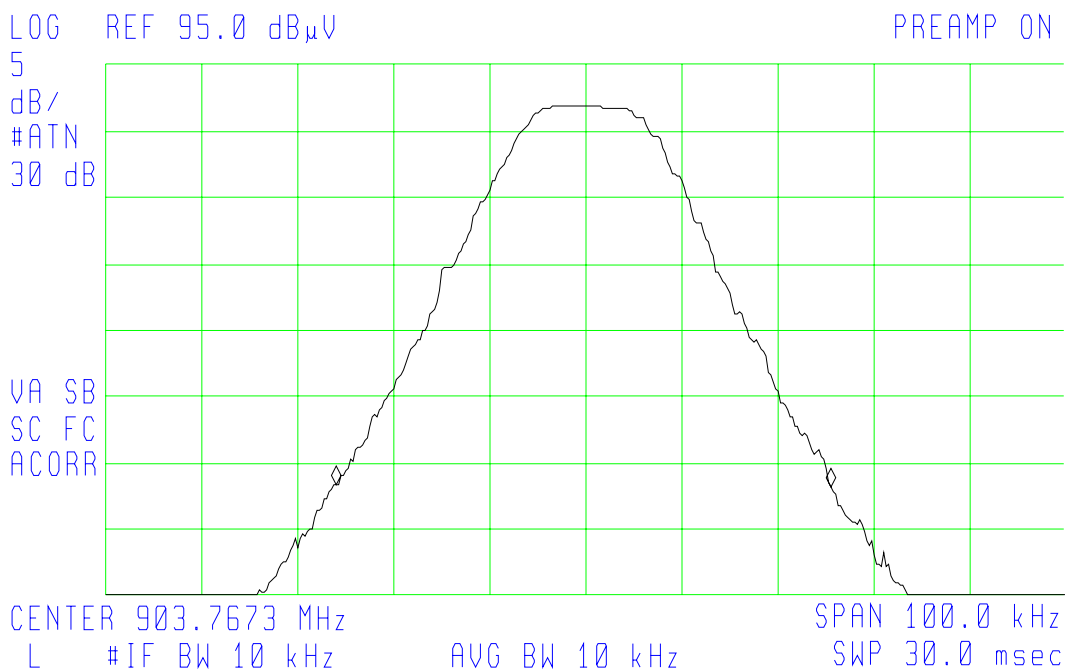
Frequency (MHz)	Polarization (H/V)	QP Amplitude (dB $\mu$ V/m)	QP Limit (dB $\mu$ V/m)	QPeak Margin (dB $\mu$ V/m)
903.76	H	91.8	94.0	-2.2

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Lower Channel Bandwidth Plot

(h) 10:52:30 06 OCT 2004 CHB -26dB BANDWIDTH  
327-04 SUMMER INFANT 212 TRANSMITTER REV

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR $\Delta$  51.5 kHz  
-.12 dB



Frequency (MHz)	26 dB BW
903.76	51.5 kHz

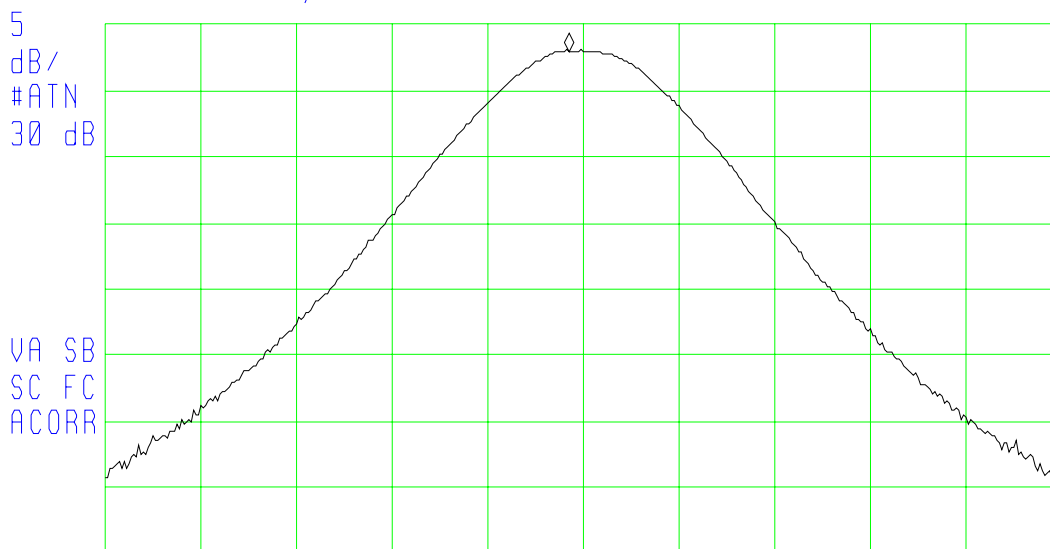
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Upper Channel Output Power Plot

10:08:43 06 OCT 2004 CHANNEL A FIELD STRENGTH  
327-04 SUMMER INFANT 212 TRANSMITTER REV

FREQ	915.9 MHz
PEAK	93.4 dB $\mu$ V
QP	93.2 dB $\mu$ V
AVG	93.1 dB $\mu$ V

LOG REF 95.0 dB $\mu$ V PREAMP ON



CENTER 915.9550 MHz SPAN 500.0 kHz  
RL #IF BW 120 kHz AVG BW 300 kHz SWP 20.0 msec

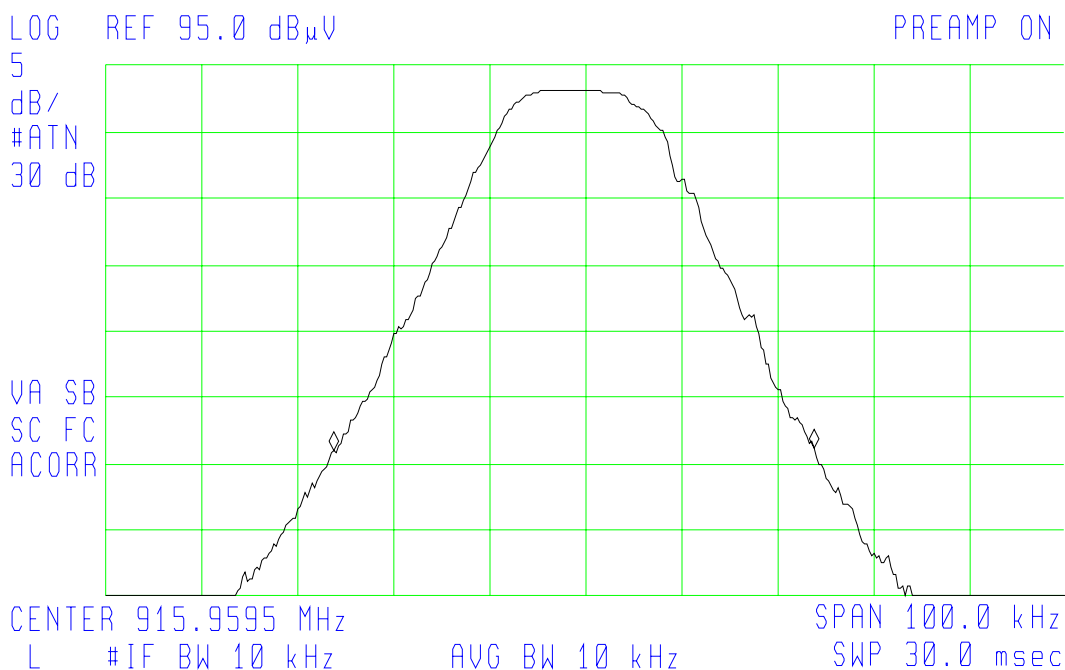
Frequency (MHz)	Polarization (H/V)	QP Amplitude (dBuV/m)	QP Limit (dBuV/m)	QPeak Margin (dBuV/m)
945.96	H	93.2	94.0	-0.8



**Channel B Bandwidth Plot**

(h) 10:20:52 06 OCT 2004 CHA -26dB BANDWIDTH  
327-04 SUMMER INFANT 212 TRANSMITTER REV

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR $\Delta$  50.0 kHz  
.21 dB



Frequency (MHz)	26 dB BW
915.96	50.0 kHz

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#### CONDUCTED TEST RESULTS

Frequency Range:	150 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**

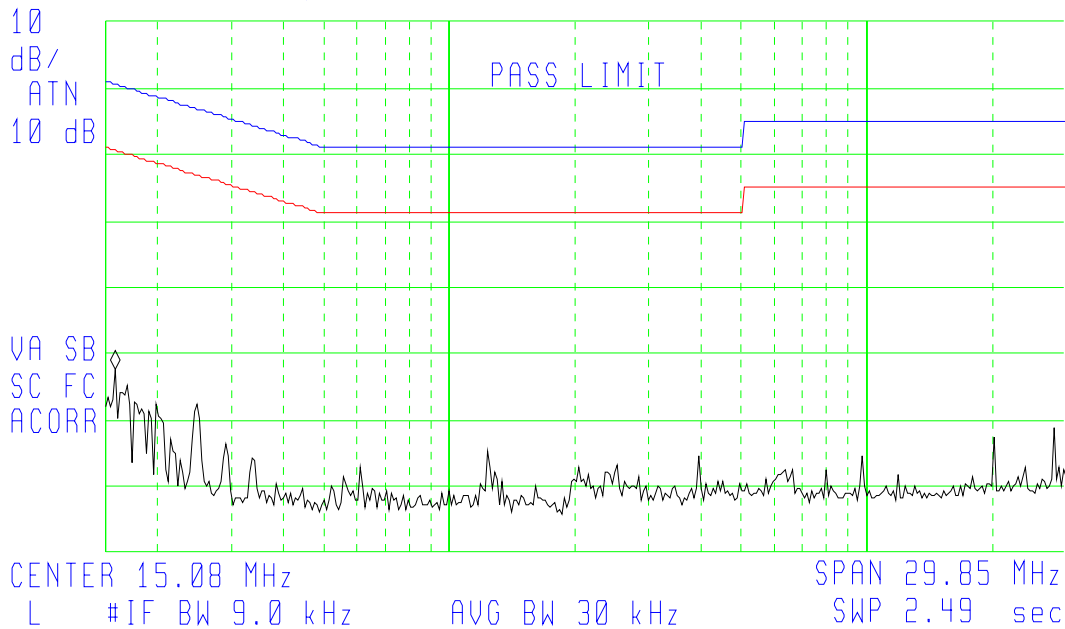
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Conducted 120V 60Hz Neutral Data Log Plot

(h) 15:50:42 05 OCT 2004 120VAC 60HZ CON NEUTRAL CHB  
327-04 SUMMER INFANT 212TX REV

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR 160 kHz  
22.37 dB $\mu$ V

LOG REF 75.0 dB $\mu$ V



Peak Detector Used, Max Held. Start Freq 150 kHz Stop 30 MHz.

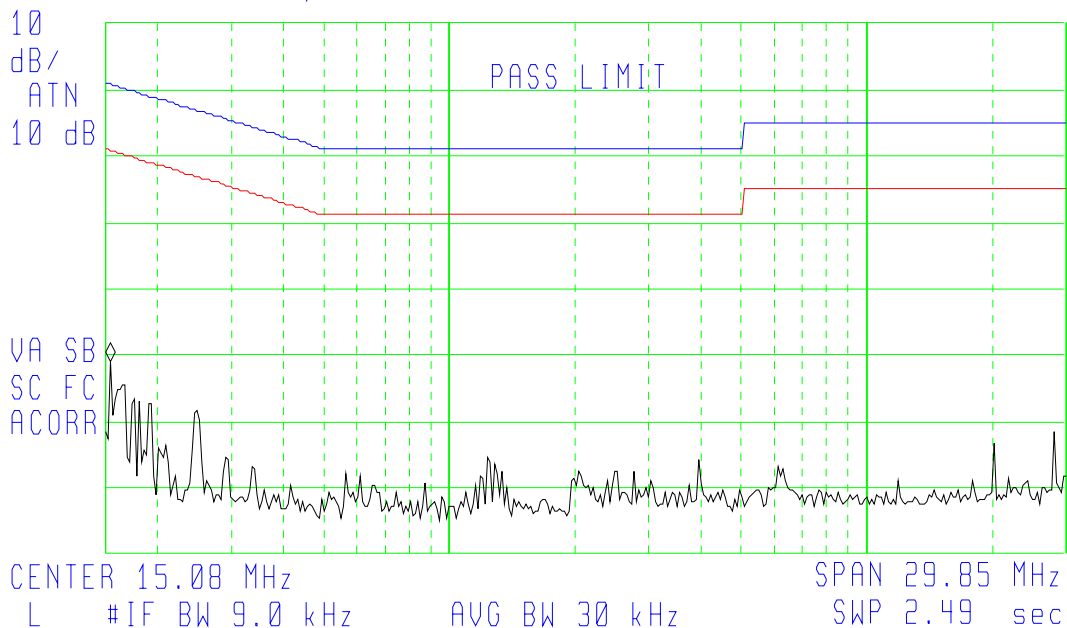
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Conducted 120V 60Hz Phase Data Log Plot

(7) 15:46:10 05 OCT 2004 120VAC 60HZ CON PHASE CHB  
327-04 SUMMER INFANT 212TX REV

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR 150 kHz  
23.89 dB $\mu$ V

LOG REF 75.0 dB $\mu$ V



Peak Detector Used, Max held. Start Freq 150 kHz Stop 30 MHz.

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**NOTES AND COMMENTS**

(Special conditions unique to this test)

None