



Measurement of RF Emissions from an Aspire Corded Handset Transmitter

For	Telefonix, Inc. 2340 Ernie Krueger Circle Waukegan, IL 60087
P.O. Number	21890
Date Tested	August 20 – 21, 2012
Test Personnel	Richard King
Test Specification	FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.247 for Digital Modulation Intentional Radiators Operating within the bands 2400-2483.5MHz Industry Canada RSS-GEN Industry Canada RSS-210

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THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE
WRITTEN APPROVAL OF ELITE ELECTRONIC ENGINEERING INCORPORATED.



REVISION HISTORY

Revision	Date	Description
—	18 September 2012	Initial release
A	12 November 2012	Added OEM module information



Measurement of RF Emissions from a Corded Handset, Model No. Aspire Transmitter

1. INTRODUCTION

1.1. Scope of Tests

This report represents the results of the series of radio interference measurements performed on a Telefonix, Inc. Corded Handset, Model No. Aspire, no serial number was assigned, transmitter (hereinafter referred to as the test item). The transmitter was designed to transmit in the 2400-2483.5 MHz band using an internal antenna. The test item was manufactured and submitted for testing by Telefonix, Inc. located in Waukegan, IL.

1.2. Purpose

The test series was performed to determine if the test item's harmonics meets the radiated RF emission requirements for the restricted bands of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, 15.247 for Intentional Radiators in the restricted bands of operation with a USB cable attached and again without a USB cable attached. The EUT included the LS Research TiWi Module, FCC ID: TFB-TIWI1-01. The protocol data can be found in LS Research, LLC Test Report number 311258.

The test series was also performed to determine if the test item's harmonics meets the radiated RF emission requirements for the restricted bands of the Industry Canada Radio Standards Specification, RSS-210, Annex 8 for transmitters. Testing was performed in accordance with ANSI C63.4-2009.

1.3. Deviations, Additions and Exclusions

There were no deviations, additions to, or exclusions from the test specification during this test series.

1.4. EMC Laboratory Identification

This series of tests was performed by Elite Electronic Engineering Incorporated of Downers Grove, Illinois. The laboratory is accredited by The American Association for Laboratory Accreditation (A2LA). A2LA Certificate Number: 1786.01.

1.5. Laboratory Conditions

The temperature at the time of the test was 22°C and the relative humidity was 36%.

2. APPLICABLE DOCUMENTS

The following documents of the exact issue designated form part of this document to the extent specified herein:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15, Subpart C, dated 1 October 2011
- ANSI C63.4-2009, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"
- Industry Canada Radio Standards Specification, RSS-Gen, "General Requirements and Information for the Certification of Radiocommunication Equipment", Issue 3, December 2010
- Industry Canada Radio Standards Specification, RSS-210, "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment", Issue 8, December 2010



3. EUT SETUP AND OPERATION

3.1. General Description

The EUT is a Telefonix, Inc., Corded Handset, Model No. Aspire . A block diagram of the EUT setup is shown as Figure 1.

3.1.1.Power Input

The EUT obtained 19.5V 60Hz power through 2 leads from the Universal AC Adaptor, Part No.XST-70W-002. The primary of this transformer received 115V 60Hz power through lowpass powerline filters on the wall of the shielded enclosure. The 19.5 VAC power from the secondary of the transformer was provided to the EUT through a 2 wire, 6 foot long unshielded cord. Each primary lead was connected through a line impedance stabilization network (LISN) which was located on the ground plane. The network complies with the requirements of Paragraph 4.1.2 of ANSI C63.4-2009.

3.1.2.Peripheral Equipment

No peripheral equipment was required for the EUT to operate properly.

3.1.3.Signal Input/Output Leads

The following interconnect cables were submitted with the EUT:

Item	Description
USB Cable	1 4 foot long USB cable

3.1.4.Grounding

Since only two wires were used to provide the input power, the EUT was ungrounded during the tests. The third primary input terminal of the transformer was not used.

3.2. Operational Mode

For all tests, the test item was placed on an 80cm high non-conductive stand. The test item was energized. The unit was programmed to operate in one of the following modes:

- Transmit at 2402MHz
- Transmit at 2442MHz
- Transmit at 2480MHz

3.3. EUT Modifications

No modifications were required for compliance to the FCC Part 15C requirements.

4. TEST FACILITY AND TEST INSTRUMENTATION

4.1. Shielded Enclosure

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. With the exception of the floor, the reflective surfaces of the shielded chamber are lined with ferrite tiles on the walls and ceiling. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2009 for site attenuation.

4.2. Test Instrumentation

The test instrumentation and auxiliary equipment used during the tests are listed in Table 9-1. All equipment was calibrated per the instruction manuals supplied by the manufacturer.

Conducted and radiated emission measurements were performed with a spectrum analyzer. This receiver allows measurements with the bandwidths and detector functions specified in the requirements.



4.3. Calibration Traceability

Test equipment is maintained and calibrated on a regular basis. All calibrations are traceable to the National Institute of Standards and Technology (NIST).

4.4. Measurement Uncertainty

All measurements are an estimate of their true value. The measurement uncertainty characterizes, with a specified confidence level, the spread of values which may be possible for a given measurement system.

The measurement uncertainty for these tests is presented below:

Conducted Emissions Measurements		
Combined Standard Uncertainty	1.07	-1.07
Expanded Uncertainty (95% confidence)	2.1	-2.1

Radiated Emissions Measurements		
Combined Standard Uncertainty	2.26	-2.18
Expanded Uncertainty (95% confidence)	4.5	-4.4

5. TEST PROCEDURES

5.1. Radiated Spurious Emissions Measurements

5.1.1. Requirements

The radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).

Paragraph 15.209(a) has the following radiated emission limits:

Frequency MHz	Field Strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	3
30.0-88.0	100	3
88.0-216.0	150	3
216.0-960.0	200	3
Above 960	500	3

5.1.2. Procedure

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2009 for site attenuation.

The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.

For the harmonic emissions in the restricted bands, the following procedure was used:

- Above 1 GHz, the emissions were measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the test item. A peak detector with a resolution bandwidth of 1 MHz was used on the spectrum analyzer. The measurements were

performed for harmonics up through the 10th harmonic that fall within the restricted bands.

- b) To ensure that maximum or worst case emission levels were measured, the following steps were taken when taking all measurements:
 - i) The test item was rotated so that all of its sides were exposed to the receiving antenna.
 - ii) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
 - iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer, the measuring antenna was not raised or lowered to ensure maximized readings. Instead, the test item was rotated through all axes to ensure the maximum readings were recorded for the test item.
- c) For all radiated emissions measurements above 1 GHz, the peak readings must comply with the 15.35(b) limits. 15.35(b) states that when average radiated emissions measurements are specified, there also is a limit on the peak level of the radiated emissions. The limit on the peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. Therefore, all peak readings above 1 GHz must be no greater than 20 dB above the limits specified in 15.209(a).
- d) Next, for all radiated emissions measurements above 1GHz, the resolution bandwidth was set to 1MHz. The analyzer was set to linear mode with a 10Hz video bandwidth in order to simulate an average detector. An average reading was taken.

5.1.3. Results

The radiated emission levels at the harmonics with the USB cable attached and removed and the test item transmitting at 2402MHz, 2442MHz, and 2480MHz are shown on data pages 12 through 23.

As can be seen from the data, the harmonic emission in the restricted bands was within the specification limits with and without USB cable attached to the test item.

Photographs of the test configuration which yielded the highest, or worst case, radiated emission levels are shown on Figures 3.

6. OTHER TEST CONDITIONS

6.1. Test Personnel and Witnesses

All tests were performed by qualified personnel from Elite Electronic Engineering Incorporated.

6.2. Disposition of the EUT

The EUT and all associated equipment were returned to Telefonix, Inc. upon completion of the tests.

7. CONCLUSIONS

It was determined that the transmitter harmonics emitted for the Telefonix, Inc. Corded Handset, Model No. Aspire with and without the USB cable meet the radiated RF emission requirements for the restricted bands of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.205 et seq. for Intentional Radiators and Industry Canada Radio Standards Specification, RSS-210, Annex 8 for transmitters.



8. CERTIFICATION

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specifications. The data presented in this test report pertains to the EUT at the test date. Any electrical or mechanical modification made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification. This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.



9. EQUIPMENT LIST

Table 9-1 Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW1	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-30-20G20R6G-3R0	PL2927/0646	20GHZ-26.5GHZ	8/9/2012	8/9/2013
APW7	PREAMPLIFIER	PLANAR	PE2-35-120-5R0-10-12	PL7106	1GHZ-20GHZ	8/9/2012	8/9/2013
CDX8	COMPUTER	ELITE	WORKSTATION			N/A	
NHG1	STANDARD GAIN HORN ANTENNA	NARDA	638	---	18-26.5GHZ	NOTE 1	
NTA3	BILOG ANTENNA	TESEQ	6112D	28040	25-1000MHZ	2/16/2012	2/16/2013
NWI0	RIDGED WAVE GUIDE	AEL	H1498	153	2-18GHZ	1/28/2012	1/28/2013
NWP1	DOUBLE RIDGED WAVEGUIDE ANTENNA	EATON	3115	2100	1GHZ-12.4GHZ	3/6/2012	3/6/2013
RAK1	RF SECTION	HEWLETT PACKARD	85462A	3411A00181	0.009-6500MHZ	3/15/2012	3/15/2013
RAKJ	RF FILTER SECTION	HEWLETT PACKARD	85460A	3330A00154	---	3/15/2012	3/15/2013
RBA0	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB26	100145	20HZ-26.5GHZ	3/8/2012	3/8/2013
XLQS	5W, 50 OHM TERMINATION	JFW INDUSTRIES	50T-052	59	DC-2GHZ	8/6/2012	8/6/2013

I/O: Initial Only

N/A: Not Applicable

Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.

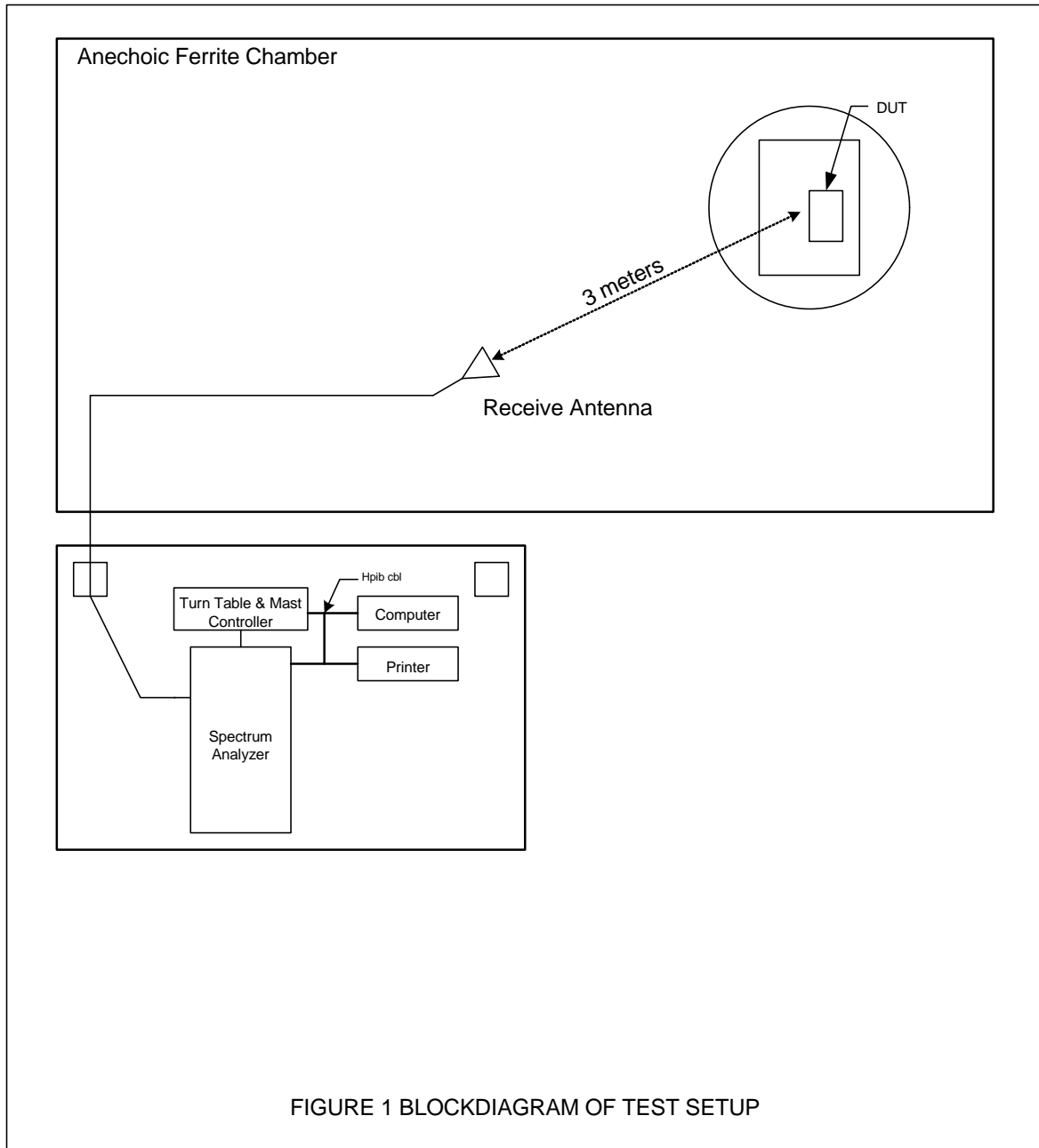
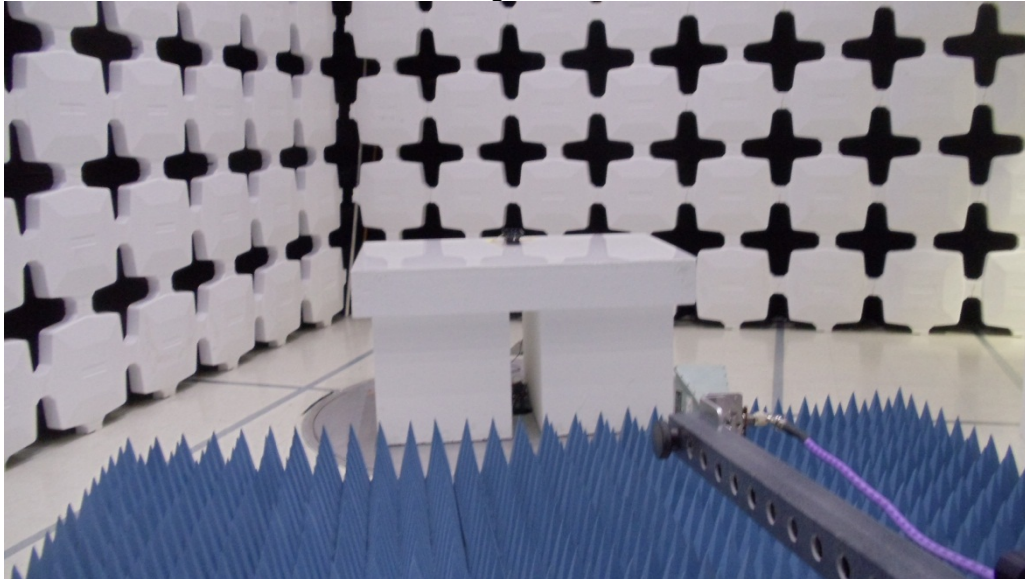
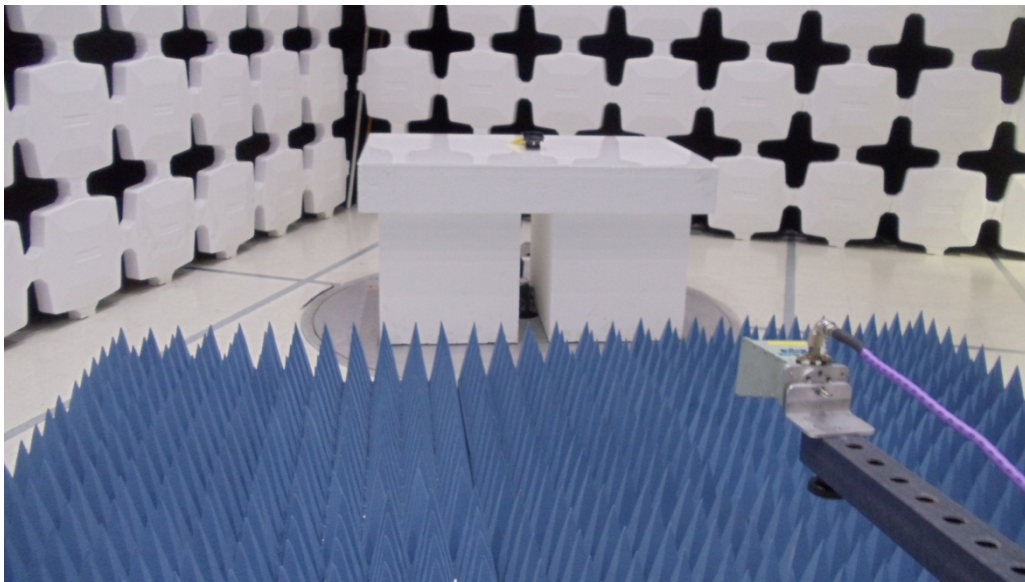


Figure 3



Test Setup for Radiated Emissions, above 1GHz – Horizontal Polarization



Test Setup for Radiated Emissions above 1GHz – Vertical Polarization



DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2402MHz
USB Cable : Attached
Test Distance : 3 meters
Notes : Peak Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4804.00	H	46.4	3.7	34.7	-39.2	45.6	190.0	5000.0	-28.4
4804.00	V	46.9	3.7	34.7	-39.2	46.1	201.7	5000.0	-27.9
12010.00	H	45.3	6.1	41.2	-38.4	54.3	516.2	5000.0	-19.7
12010.00	V	45.7	6.1	41.2	-38.4	54.6	539.9	5000.0	-19.3
19216.00	H	46.5	2.2	40.4	-27.7	61.4	1171.3	5000.0	-12.6
19216.00	V	46.5	2.2	40.4	-27.7	61.4	1171.3	5000.0	-12.6

Checked BY RICHARD E. King :Richard E. King



DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2402MHz
USB Cable : Attached
Test Distance : 3 meters
Notes : Average Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4804.00	H	36.4	3.7	34.7	-39.2	35.6	190.0	500.0	-18.4
4804.00	V	36.4	3.7	34.7	-39.2	35.6	201.7	500.0	-18.3
12010.00	H	34.6	6.1	41.2	-38.4	43.5	149.9	500.0	-10.5
12010.00	V	34.6	6.1	41.2	-38.4	43.5	149.9	500.0	-10.5
19216.00	H	32.2	2.2	40.4	-27.7	47.1	225.8	500.0	-6.9
19216.00	V	32.2	2.2	40.4	-27.7	47.1	225.8	500.0	-6.9

Checked BY RICHARD E. KING :

Richard E. King



DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2402MHz
USB Cable : Removed
Test Distance : 3 meters
Notes : Peak Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4804.00	H	45.3	3.7	34.7	-39.2	44.6	169.1	5000.0	-29.4
4804.00	V	45.7	3.7	34.7	-39.2	45.0	176.9	5000.0	-29.0
12010.00	H	45.9	6.1	41.2	-38.4	54.8	547.5	5000.0	-19.2
12010.00	V	44.8	6.1	41.2	-38.4	53.7	486.8	5000.0	-20.2
19216.00	H	46.5	2.2	40.4	-28.4	60.7	1088.2	5000.0	-13.2
19216.00	V	46.5	2.2	40.4	-28.4	60.7	1088.2	5000.0	-13.2

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DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2402MHz
USB Cable : Removed
Test Distance : 3 meters
Notes : Average Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4804.00	H	33.5	3.7	34.7	-39.2	32.7	169.1	500.0	-21.3
4804.00	V	33.5	3.7	34.7	-39.2	32.7	176.9	500.0	-21.3
12010.00	H	32.3	6.1	41.2	-38.4	41.2	115.0	500.0	-12.8
12010.00	V	32.3	6.1	41.2	-38.4	41.2	115.0	500.0	-12.8
19216.00	H	34.5	2.2	40.4	-28.4	48.7	273.3	500.0	-5.2
19216.00	V	34.5	2.2	40.4	-28.4	48.7	273.3	500.0	-5.2

Checked BY RICHARD E. KING :

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DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2442MHz
USB Cable : Attached
Test Distance : 3 meters
Notes : Peak Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4884.00	H	46.8	3.7	34.7	-39.2	46.0	200.4	5000.0	-27.9
4884.00	V	48.2	3.7	34.7	-39.2	47.4	234.4	5000.0	-26.6
7326.00	H	47.4	4.7	37.9	-39.4	50.6	337.7	5000.0	-23.4
7326.00	V	48.3	4.7	37.9	-39.4	51.5	376.3	5000.0	-22.5
12210.00	H	47.1	6.1	41.4	-38.5	56.0	630.6	5000.0	-18.0
12210.00	V	47.0	6.1	41.4	-38.5	55.9	623.4	5000.0	-18.1
19536.00	H	46.0	2.2	40.4	-27.8	60.8	1092.4	5000.0	-13.2
19536.00	V	46.0	2.2	40.4	-27.8	60.8	1092.4	5000.0	-13.2

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DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2442MHz
USB Cable : Attached
Test Distance : 3 meters
Notes : Average Detector Readings in Restricted Bands
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4884.00	H	31.5	3.7	34.7	-39.2	30.7	200.4	500.0	-23.2
4884.00	V	31.5	3.7	34.7	-39.2	30.7	234.4	500.0	-23.2
7326.00	H	32.8	4.7	37.9	-39.4	36.0	63.2	500.0	-18.0
7326.00	V	32.8	4.7	37.9	-39.4	36.0	63.2	500.0	-18.0
12210.00	H	33.6	6.1	41.4	-38.5	42.5	134.0	500.0	-11.4
12210.00	V	33.6	6.1	41.4	-38.5	42.5	134.0	500.0	-11.4
19536.00	H	34.4	2.2	40.4	-27.8	49.2	287.3	500.0	-4.8
19536.00	V	34.4	2.2	40.4	-27.8	49.2	287.3	500.0	-4.8

Checked BY RICHARD E. King :

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Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2442MHz
USB Cable : Removed
Test Distance : 3 meters
Notes : Peak Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4884.00	H	45.0	3.7	34.7	-39.2	44.2	162.9	5000.0	-29.7
4884.00	V	46.7	3.7	34.7	-39.2	46.0	198.8	5000.0	-28.0
7326.00	H	45.1	4.7	37.9	-39.4	48.3	260.0	5000.0	-25.7
7326.00	V	45.6	4.7	37.9	-39.4	48.8	275.4	5000.0	-25.2
12210.00	H	45.3	6.1	41.4	-38.5	54.3	517.9	5000.0	-19.7
12210.00	V	43.6	6.1	41.4	-38.5	52.5	423.9	5000.0	-21.4
19536.00	H	46.0	2.2	40.4	-27.8	60.8	1092.4	5000.0	-13.2
19536.00	V	46.0	2.2	40.4	-27.8	60.8	1092.4	5000.0	-13.2
4884.00	H	45.0	3.7	34.7	-39.2	44.2	162.9	5000.0	-29.7
4884.00	V	46.7	3.7	34.7	-39.2	46.0	198.8	5000.0	-28.0

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Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2442MHz
USB Cable : Removed
Test Distance : 3 meters
Notes : Average Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4884.00	H	31.5	3.7	34.7	-39.2	30.7	162.9	500.0	-23.2
4884.00	V	31.5	3.7	34.7	-39.2	30.7	198.8	500.0	-23.2
7326.00	H	32.8	4.7	37.9	-39.4	36.0	63.2	500.0	-18.0
7326.00	V	32.8	4.7	37.9	-39.4	36.0	63.2	500.0	-18.0
12210.00	H	33.6	6.1	41.4	-38.5	42.5	134.0	500.0	-11.4
12210.00	V	33.6	6.1	41.4	-38.5	42.5	134.0	500.0	-11.4
19536.00	H	34.4	2.2	40.4	-27.8	49.2	287.3	500.0	-4.8
19536.00	V	34.4	2.2	40.4	-27.8	49.2	287.3	500.0	-4.8

Checked BY RICHARD E. King :

Richard E. King



DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2480MHz
USB Cable : Attached
Test Distance : 3 meters
Notes : Peak Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4960.00	H	44.4	3.7	34.8	-39.3	43.7	152.6	5000.0	-30.3
4960.00	V	45.0	3.7	34.8	-39.3	44.2	162.4	5000.0	-29.8
7440.00	H	45.7	4.7	38.0	-39.3	49.1	286.0	5000.0	-24.9
7440.00	V	45.7	4.7	38.0	-39.3	49.1	285.0	5000.0	-24.9
12400.00	H	46.4	6.1	41.5	-38.6	55.3	584.8	5000.0	-18.6
12400.00	V	45.4	6.1	41.5	-38.6	54.4	523.6	5000.0	-19.6
19840.00	H	46.4	2.2	40.4	-27.3	61.8	1225.0	5000.0	-12.2
19840.00	V	46.4	2.2	40.4	-27.3	61.8	1225.0	5000.0	-12.2
22320.00	H	46.4	2.2	40.6	-27.5	61.7	1219.3	5000.0	-12.3
22320.00	V	46.4	2.2	40.6	-27.5	61.7	1219.3	5000.0	-12.3

Checked BY RICHARD E. King :

Richard E. King



DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2480MHz
USB Cable : Attached
Test Distance : 3 meters
Notes : Average Detector Readings in Restricted Bands
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4960.00	H	31.2	3.7	34.8	-39.3	30.4	152.6	500.0	-23.6
4960.00	V	31.3	3.7	34.8	-39.3	30.6	162.4	500.0	-23.4
7440.00	H	32.5	4.7	38.0	-39.3	35.9	62.6	500.0	-18.1
7440.00	V	33.2	4.7	38.0	-39.3	36.6	67.7	500.0	-17.4
12400.00	H	32.9	6.1	41.5	-38.6	41.9	124.0	500.0	-12.1
12400.00	V	32.8	6.1	41.5	-38.6	41.8	122.5	500.0	-12.2
19840.00	H	35.8	2.2	40.4	-27.3	51.2	361.5	500.0	-2.8
19840.00	V	35.8	2.2	40.4	-27.3	51.2	361.5	500.0	-2.8
22320.00	H	34.6	2.2	40.6	-27.5	49.9	313.4	500.0	-4.1
22320.00	V	34.6	2.2	40.6	-27.5	49.9	313.4	500.0	-4.1

Checked BY RICHARD E. King :

Richard E. King



DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2480MHz
USB Cable : Removed
Test Distance : 3 meters
Notes : Peak Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4960.00	H	45.0	3.7	34.8	-39.3	44.2	162.9	5000.0	-29.7
4960.00	V	44.5	3.7	34.8	-39.3	43.7	153.3	5000.0	-30.3
7440.00	H	44.2	4.7	38.0	-39.3	47.6	240.1	5000.0	-26.4
7440.00	V	44.2	4.7	38.0	-39.3	47.6	240.1	5000.0	-26.4
12400.00	H	46.4	6.1	41.5	-38.6	55.3	584.8	5000.0	-18.6
12400.00	V	46.0	6.1	41.5	-38.6	54.9	558.5	5000.0	-19.0
19840.00	H	46.4	2.2	40.4	-27.3	61.8	1225.0	5000.0	-12.2
19840.00	V	46.4	2.2	40.4	-27.3	61.8	1225.0	5000.0	-12.2
22320.00	H	46.4	2.2	40.6	-27.5	61.7	1219.3	5000.0	-12.3
22320.00	V	46.4	2.2	40.6	-27.5	61.7	1219.3	5000.0	-12.3

Checked BY RICHARD E. King :Richard E. King



DATA PAGE

Manufacturer : Telefonix, Inc.
Model No. : Aspire
Test Specification : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions in restricted bands
Date : August 20-21, 2012
Mode : Transmit @ 2480MHz
USB Cable : Removed
Test Distance : 3 meters
Notes : Average Detector
: Total = Meter Reading + Cable Loss + Antenna Factor + Preamp Gain

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 M	Total uV/m at 3M	Limit uV/m at 3M	Margin (dB)
4960.00	H	31.2	3.7	34.8	-39.3	30.4	162.9	500.0	-23.6
4960.00	V	31.3	3.7	34.8	-39.3	30.6	153.3	500.0	-23.4
7440.00	H	32.5	4.7	38.0	-39.3	35.9	62.6	500.0	-18.1
7440.00	V	33.2	4.7	38.0	-39.3	36.6	67.7	500.0	-17.4
12400.00	H	32.9	6.1	41.5	-38.6	41.9	124.0	500.0	-12.1
12400.00	V	32.8	6.1	41.5	-38.6	41.8	122.5	500.0	-12.2
19840.00	H	35.8	2.2	40.4	-27.3	51.2	361.5	500.0	-2.8
19840.00	V	35.8	2.2	40.4	-27.3	51.2	361.5	500.0	-2.8
22320.00	H	34.6	2.2	40.6	-27.5	49.9	313.4	500.0	-4.1
22320.00	V	34.6	2.2	40.6	-27.5	49.9	313.4	500.0	-4.1

Checked BY RICHARD E. King :

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