



TESTING  
CERT #803.01, 803.02, 803.05, 803.06

**FIRST TEXAS PRODUCTS LLC TEST REPORT  
FOR THE  
METAL DETECTOR, F75 (TI-MICROCONTROLLER PLATFORM)  
FCC PART 15 SUBPART C SECTION 15.209 AND  
SUBPART B SECTION 15.109 CLASS B  
TESTING**

**DATE OF ISSUE: NOVEMBER 7, 2008**

**PREPARED FOR:**

First Texas Products LLC  
1465-H Henry Brennan  
El Paso, TX 79936

P.O. No.: 005891-00  
W.O. No.: 88547

**PREPARED BY:**

Mary Ellen Clayton  
CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

Date of test: October 20-24, 2008

**Report No.: FC08-103**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** October 20-24, 2008

**DATE OF RECEIPT:** October 20-24, 2008

**REPRESENTATIVE:** Art Nemirov

**MANUFACTURER:**

First Texas Products LLC  
1465-H Henry Brennan  
El Paso, TX 79936

**TEST LOCATION:**

CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

**TEST METHOD:** ANSI C63.4 (2003)

**PURPOSE OF TEST:** To perform the testing of the Metal Detector, F75 (TI-Microcontroller Platform) with the requirements for FCC Part 15 Subpart C Section 15.209 and Subpart B Section 15.109 Class B devices.

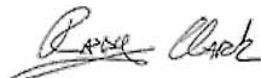
## APPROVALS

Steve Behm, Director of Engineering Services

**QUALITY ASSURANCE:**

  
Mike Wilkinson, Senior EMC Engineer/Lab Manager

**TEST PERSONNEL:**



Randy Clark, EMC Engineer

## SUMMARY OF RESULTS

Test	Specification	Results
Radiated Emissions	FCC Part 15 Subpart B Section 15.109 Class B	Pass
Carrier Emissions	FCC Part 15 Subpart C Section 15.209	Pass
Radiated Emissions	FCC Part 15 Subpart C Section 15.209	Pass
Occupied Bandwidth		Pass
Site File No.	FCC Site No. 90477 IC Site No. 3082-A	

## CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing. Conducted emissions not required for this device because it is battery powered.

**FCC 15.31(e) Voltage Variations**

Not applicable to this device because it is battery powered and it was tested with a new battery.

**FCC 15.31(m) Number Of Channels**

This device was tested on a single channel.

**FCC 15.33(a) Frequency Ranges Tested**

15.109 Radiated Emissions: 30 MHz – 1000 MHz

15.209 Radiated Emissions: 9 kHz – 1000 MHz

<b>FCC SECTION 15.35:</b> <b>ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE</b>			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz

**FCC 15.203 Antenna Requirements**

The antenna has a unique connector; therefore the EUT complies with Section 15.203 of the FCC rules.

**EUT Operating Frequency**

The EUT was operating at 12.9 kHz.

**Temperature and Humidity During Testing**

The temperature during testing was within +15°C and + 35°C.

The relative humidity was between 20% and 75%.

## **EQUIPMENT UNDER TEST (EUT) DESCRIPTION**

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

## **EQUIPMENT UNDER TEST**

### **Metal Detectors**

Manuf: First Texas Products LLC  
Model: Quick Draw II  
Serial: CKC assigned #2  
FCC ID: pending

### **Metal Detectors**

Manuf: First Texas Products LLC  
Model: F5  
Serial: CKC assigned #1  
FCC ID: pending

### **Metal Detectors**

Manuf: First Texas Products LLC  
Model: F75 (T1-microcontroller platform)  
Serial: 09088773  
FCC ID: pending

## **PERIPHERAL DEVICES**

The EUT was tested with the following peripheral device(s):

### **Headphones (3 each)**

Manuf: First Texas Products LLC  
Model: 972095  
Serial: NA

### **Rotating Target**

Manuf: First Texas Products LLC  
Model: NA  
Serial: NA

## REPORT OF EMISSIONS MEASUREMENTS

### TESTING PARAMETERS

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

### CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dB $\mu$ V/m, the spectrum analyzer reading in dB $\mu$ V was corrected by using the following formula. This reading was then compared to the applicable specification limit.

<b>SAMPLE CALCULATIONS</b>	
Meter reading	(dB $\mu$ V)
+ Antenna Factor	(dB)
+ Cable Loss	(dB)
- Distance Correction	(dB)
- Preamplifier Gain	(dB)
= Corrected Reading	(dB $\mu$ V/m)

## TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

## SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

### Peak

In this mode, the spectrum analyzer/receiver readings were recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

### Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

### Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.

## FCC 15.109 RADIATED EMISSIONS

### Test Setup Photos



## Test Data Sheets

Test Location: CKC Laboratories • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240  
 Customer: **First Texas Products LLC**  
 Specification: **15.109 CLASS B**  
 Work Order #: **88547** Date: 10/20/2008  
 Test Type: **Maximized Emissions** Time: 15:13:50  
 Equipment: **Metal Detector** Sequence#: 9  
 Manufacturer: Tested By: Randal Clark  
 Model:  
 S/N:

### **Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer (Display)	2005A01550	02/05/2007	02/05/2009	01183
Spectrum Analyzer (RF Section)	2007A01066	02/05/2007	02/05/2009	01184
QP Adapter	2043A00104	02/05/2007	02/05/2009	00069
HP-8447D Preamp	2727A05444	06/20/2008	06/20/2010	00062
Site A 10 meter cable set		05/11/2007	05/11/2009	MA10M
Bilog Antenna	2456	05/14/2007	05/14/2009	01991
6dB Attenuator	none	05/11/2007	05/11/2009	P05656

### **Equipment Under Test (\* = EUT):**

Function	Manufacturer	Model #	S/N
Metal Detectors	First Texas Products LLC	Quick Draw II	CKC assigned #2
Metal Detectors	First Texas Products LLC	F5	CKC assigned #1
Metal Detectors	First Texas Products LLC	F75	09088773

### **Support Devices:**

Function	Manufacturer	Model #	S/N
Rotating Target	First Texas Products		
Headphones	First Texas Products LLC	972095	
Headphones	First Texas Products LLC	972095	
Headphones	First Texas Products LLC	972095	

### **Test Conditions / Notes:**

47 CFR 15.109. Equipment under test is a metal detector. For open area testing, the equipment is setup on a wooded table and operating normally. Attachment of the headphones were investigated, no change in emissions characteristics were measured with or without the headphones. The support equipment provides a moving target to exercise the detector's circuitry. Frequency Range Investigated: 30 MHz - 1000 MHz Temperature: 28°C, Relative Humidity: 38%.

### **Transducer Legend:**

T1=MA10M	T2=AMP-AN00062-062008
T3=ANT AN01991 25-1000MHz	T4=ATT ANP05656

**Measurement Data:** Reading listed by margin. **Test Distance:** 10 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	60.001M QP	45.2	+2.2	-30.7	+6.8	+5.8	+10.0	39.3	40.0	-0.7	Vert
^	59.996M	48.7	+2.2	-30.7	+6.8	+5.8	+10.0	42.8	40.0	+2.8	Vert

3	59.994M	44.9	+2.2	-30.7	+6.8	+5.8	+10.0	39.0	40.0	-1.0	Horiz
QP											
^	60.003M	48.0	+2.2	-30.7	+6.8	+5.8	+10.0	42.1	40.0	+2.1	Horiz
5	47.996M	40.4	+2.2	-30.7	+10.1	+5.8	+10.0	37.8	40.0	-2.2	Horiz
QP											
^	48.015M	44.2	+2.2	-30.7	+10.1	+5.8	+10.0	41.6	40.0	+1.6	Horiz
7	71.995M	44.0	+2.2	-30.8	+6.5	+5.8	+10.0	37.7	40.0	-2.3	Horiz
8	71.994M	42.8	+2.2	-30.8	+6.5	+5.8	+10.0	36.5	40.0	-3.5	Vert
QP											
^	71.995M	47.9	+2.2	-30.8	+6.5	+5.8	+10.0	41.6	40.0	+1.6	Vert
10	116.002M	38.5	+2.5	-30.6	+11.3	+5.8	+10.0	37.5	43.5	-6.0	Vert
QP											
^	116.009M	39.2	+2.5	-30.6	+11.3	+5.8	+10.0	38.2	43.5	-5.3	Vert
12	111.988M	37.4	+2.4	-30.6	+11.0	+5.8	+10.0	36.0	43.5	-7.5	Vert
13	116.000M	36.5	+2.5	-30.6	+11.3	+5.8	+10.0	35.5	43.5	-8.0	Horiz
14	63.989M	38.2	+2.2	-30.7	+6.5	+5.8	+10.0	32.0	40.0	-8.0	Vert
15	67.997M	38.1	+2.2	-30.8	+6.3	+5.8	+10.0	31.6	40.0	-8.4	Vert
16	112.015M	35.8	+2.4	-30.6	+11.0	+5.8	+10.0	34.4	43.5	-9.1	Vert
17	124.006M	34.2	+2.6	-30.5	+11.7	+5.8	+10.0	33.8	43.5	-9.7	Vert
18	155.992M	34.5	+2.9	-30.3	+10.9	+5.8	+10.0	33.8	43.5	-9.7	Vert
19	139.994M	33.9	+2.7	-30.4	+11.6	+5.8	+10.0	33.6	43.5	-9.9	Vert
20	147.999M	34.2	+2.8	-30.4	+11.2	+5.8	+10.0	33.6	43.5	-9.9	Vert
21	67.010M	35.6	+2.2	-30.8	+6.4	+5.8	+10.0	29.2	40.0	-10.8	Vert
								BB			
22	163.994M	33.7	+3.0	-30.2	+10.3	+5.8	+10.0	32.6	43.5	-10.9	Vert
23	95.996M	35.3	+2.3	-30.7	+9.7	+5.8	+10.0	32.4	43.5	-11.1	Vert
24	63.230M	34.8	+2.2	-30.7	+6.6	+5.8	+10.0	28.7	40.0	-11.3	Vert
								BB			
25	119.996M	32.3	+2.5	-30.5	+11.6	+5.8	+10.0	31.7	43.5	-11.8	Vert
26	61.250M	34.1	+2.2	-30.7	+6.7	+5.8	+10.0	28.1	40.0	-11.9	Vert
								BB			
27	56.900M	33.2	+2.2	-30.7	+7.6	+5.8	+10.0	28.1	40.0	-11.9	Vert
								BB			

28	83.995M	32.5	+2.3	-30.7	+8.2	+5.8	+10.0	28.1	40.0	-11.9	Vert
29	58.670M	33.4	+2.2	-30.7	+7.1	+5.8	+10.0	27.8	40.0	-12.2	Vert
30	75.995M	33.0	+2.3	-30.7	+7.1	+5.8	+10.0	27.5	40.0	-12.5	Vert
31	64.250M	33.6	+2.2	-30.7	+6.5	+5.8	+10.0	27.4	40.0	-12.6	Vert
32	215.998M	30.7	+3.4	-29.9	+10.3	+5.8	+10.0	30.3	43.5	-13.2	Vert
33	131.983M	30.6	+2.6	-30.5	+11.7	+5.8	+10.0	30.2	43.5	-13.3	Vert
34	132.004M	30.4	+2.6	-30.5	+11.7	+5.8	+10.0	30.0	43.5	-13.5	Horiz
35	171.994M	31.6	+3.0	-30.1	+9.6	+5.8	+10.0	29.9	43.5	-13.6	Vert
36	167.986M	31.4	+3.0	-30.2	+9.9	+5.8	+10.0	29.9	43.5	-13.6	Vert
37	74.840M	32.0	+2.3	-30.7	+6.9	+5.8	+10.0	26.3	40.0	-13.7	Vert
38	72.290M	32.6	+2.2	-30.8	+6.5	+5.8	+10.0	26.3	40.0	-13.7	Vert
39	62.090M	32.2	+2.2	-30.7	+6.7	+5.8	+10.0	26.2	40.0	-13.8	Vert
40	60.200M	31.9	+2.2	-30.7	+6.8	+5.8	+10.0	26.0	40.0	-14.0	Vert
41	144.017M	29.5	+2.7	-30.4	+11.4	+5.8	+10.0	29.0	43.5	-14.5	Vert
42	72.560M	31.5	+2.2	-30.8	+6.6	+5.8	+10.0	25.3	40.0	-14.7	Vert
43	135.993M	29.2	+2.7	-30.5	+11.6	+5.8	+10.0	28.8	43.5	-14.7	Vert
44	74.150M	30.8	+2.3	-30.8	+6.8	+5.8	+10.0	24.9	40.0	-15.1	Vert
45	66.110M	31.3	+2.2	-30.8	+6.4	+5.8	+10.0	24.9	40.0	-15.1	Vert
46	155.995M	29.1	+2.9	-30.3	+10.9	+5.8	+10.0	28.4	43.5	-15.1	Horiz
47	73.790M	30.7	+2.2	-30.8	+6.8	+5.8	+10.0	24.7	40.0	-15.3	Vert
48	67.850M	29.9	+2.2	-30.8	+6.3	+5.8	+10.0	23.4	40.0	-16.6	Vert
49	203.993M	27.8	+3.3	-30.0	+9.4	+5.8	+10.0	26.3	43.5	-17.2	Vert
50	219.997M	27.4	+3.5	-29.8	+10.6	+5.8	+10.0	27.5	46.0	-18.5	Vert

**FCC 15.209 CARRIER EMISSIONS**



## Test Data Sheets

Test Location: CKC Laboratories • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer: **First Texas Products LLC**  
 Specification: **FCC 15.209**  
 Work Order #: **88547** Date: 10/20/2008  
 Test Type: **Maximized Emissions** Time: 16:56:40  
 Equipment: **Metal Detectors** Sequence#: 3  
 Manufacturer: First Texas Products LLC Tested By: Randal Clark  
 Model: F75  
 S/N: 09088773

### Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer (Display)	2005A01550	02/05/2007	02/05/2009	01183
Spectrum Analyzer (RF Section)	2007A01066	02/05/2007	02/05/2009	01184
QP Adapter	2043A00104	02/05/2007	02/05/2009	00069
Site A 10 meter cable set		05/11/2007	05/11/2009	MA10M
EMCO Loop Antenna	1074	05/01/2007	05/01/2009	00226

### Equipment Under Test (\* = EUT):

Function	Manufacturer	Model #	S/N
Metal Detectors*	First Texas Products LLC	F75	09088773

### Support Devices:

Function	Manufacturer	Model #	S/N
Headphones	First Texas Products LLC	972095	

### Test Conditions / Notes:

47 CFR 15.209. Equipment under test is a metal detector operating at 13kHz. For open area testing, the equipment is setup on a wooded table and operating normally. Attachment of the headphones were investigated, no change in emissions characteristics were measured with or without the headphones. Test distance correction factor applied in accordance with 15.31 of 40dB/decade to correct test data for comparison at the spec limit distance. Additional carrier emissions taken off of the ground plane in accordance with ANSI C63.4. Equipment tested with a new set of batteries. Frequency Range Investigated: Carrier. Temperature: 28°C, Relative Humidity: 38%.

### Transducer Legend:

T1=MA10M	T2=Mag Loop - AN 00226 - 9kHz-30M
T3=dBuA Conversion	

### Measurement Data:

Reading listed by margin.

Test Distance: 10 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	12.900k	56.2	+0.1	+15.0		-59.0	12.3	45.4	-33.1	Horiz
2	12.898k	54.6	+0.1	+15.0		-59.0	10.7	45.4	-34.7	Horiz Off the ground plane
3	12.898k	49.5	+0.1	+15.0		-59.0	5.6	45.4	-39.8	Vert
4	12.903k	48.4	+0.1	+15.0		-59.0	4.5	45.4	-40.9	Vert Off the ground plane

**FCC 15.209 RADIATED EMISSIONS**

**Test Setup Photos**



## Test Data Sheets

Test Location: CKC Laboratories • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer: **First Texas Products LLC**  
 Specification: **FCC 15.209**  
 Work Order #: **88547** Date: 10/20/2008  
 Test Type: **Maximized Emissions** Time: 16:56:40  
 Equipment: **Metal Detectors** Sequence#: 4  
 Manufacturer: First Texas Products LLC Tested By: Randal Clark  
 Model: F75  
 S/N: 09088773

### Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer (Display)	2005A01550	02/05/2007	02/05/2009	01183
Spectrum Analyzer (RF Section)	2007A01066	02/05/2007	02/05/2009	01184
QP Adapter	2043A00104	02/05/2007	02/05/2009	00069
Site A 10 meter cable set		05/11/2007	05/11/2009	MA10M
EMCO Loop Antenna	1074	05/01/2007	05/01/2009	00226

### Equipment Under Test (\* = EUT):

Function	Manufacturer	Model #	S/N
Metal Detectors*	First Texas Products LLC	F75	09088773

### Support Devices:

Function	Manufacturer	Model #	S/N
Headphones	First Texas Products LLC	972095	

### Test Conditions / Notes:

47 CFR 15.209. Equipment under test is a metal detector operating at 13kHz. For open area testing, the equipment is setup on a wooded table and operating normally. Attachment of the headphones were investigated, no change in emissions characteristics were measured with or without the headphones. Test distance correction factor applied in accordance with 15.31 of 40dB/decade to correct test data for comparison at the spec limit distance. Frequency Range Investigated: 9kHz to 30MHz. Temperature: 28°C, Relative Humidity: 38%.

### Transducer Legend:

T1=MA10M	T2=Mag Loop - AN 00226 - 9kHz-30M
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#	Freq MHz	Rdng dB $\mu$ V	Reading listed by margin.			Test Distance: 10 Meters				
			T1 dB	T2 dB	dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	91.008k	31.5	+0.1	+10.0		-59.0	-17.4	28.4	-45.8	Vert
2	65.008k	32.6	+0.1	+10.1		-59.0	-16.2	31.3	-47.5	Vert
3	39.008k	35.8	+0.1	+10.8		-59.0	-12.3	35.8	-48.1	Vert
4	52.004k	33.4	+0.1	+10.4		-59.0	-15.1	33.3	-48.4	Horiz
5	91.004k	28.3	+0.1	+10.0		-59.0	-20.6	28.4	-49.0	Horiz

6	65.004k	31.0	+0.1	+10.1	-59.0	-17.8	31.3	-49.1	Horiz
7	78.004k	28.7	+0.1	+10.0	-59.0	-20.2	29.8	-50.0	Horiz
8	52.008k	30.1	+0.1	+10.4	-59.0	-18.4	33.3	-51.7	Vert
9	39.004k	32.0	+0.1	+10.8	-59.0	-16.1	35.8	-51.9	Horiz
10	78.008k	26.5	+0.1	+10.0	-59.0	-22.4	29.8	-52.2	Vert
11	26.004k	32.2	+0.1	+11.8	-59.0	-14.9	39.3	-54.2	Horiz
12	25.990k	32.1	+0.1	+11.8	-59.0	-15.0	39.3	-54.3	Vert

Test Location: CKC Laboratories • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer: **First Texas Products LLC**  
 Specification: **FCC 15.209**  
 Work Order #: **88547** Date: 10/20/2008  
 Test Type: **Maximized Emissions** Time: 15:13:50  
 Equipment: **Metal Detector** Sequence #: 1  
 Manufacturer: First Texas Products LLC Tested By: Randal Clark  
 Model: F75  
 S/N: 09088773

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer (Display)	2005A01550	02/05/2007	02/05/2009	01183
Spectrum Analyzer (RF Section)	2007A01066	02/05/2007	02/05/2009	01184
QP Adapter	2043A00104	02/05/2007	02/05/2009	00069
HP-8447D Preamp	2727A05444	06/20/2008	06/20/2010	00062
Site A 10 meter cable set		05/11/2007	05/11/2009	MA10M
Bilog Antenna	2456	05/14/2007	05/14/2009	01991
6dB Attenuator	none	05/11/2007	05/11/2009	P05656

**Equipment Under Test (\* = EUT):**

Function	Manufacturer	Model #	S/N
Metal Detectors	First Texas Products LLC	Quick Draw II	CKC assigned #2
Metal Detectors	First Texas Products LLC	F5	CKC assigned #1
Metal Detectors	First Texas Products LLC	F75	09088773

**Support Devices:**

Function	Manufacturer	Model #	S/N
Rotating Target	First Texas Products		
Headphones	First Texas Products LLC	972095	
Headphones	First Texas Products LLC	972095	
Headphones	First Texas Products LLC	972095	

**Test Conditions / Notes:**

47 CFR 15.209. Equipment under test is a metal detector. For open area testing, the equipment is setup on a wooded table and operating normally. Attachment of the headphones were investigated, no change in emissions characteristics were measured with or without the headphones. The support equipment provides a moving target to exercise the detector's circuitry. Frequency Range Investigated: 30 MHz - 1000 MHz Temperature: 28°C, Relative Humidity: 38%.

**Transducer Legend:**

T1=MA10M	T2=AMP-AN00062-062008
T3=ANT AN01991 25-1000MHz	T4=ATT ANP05656

**Measurement Data:**

Reading listed by margin.

Test Distance: 10 Meters

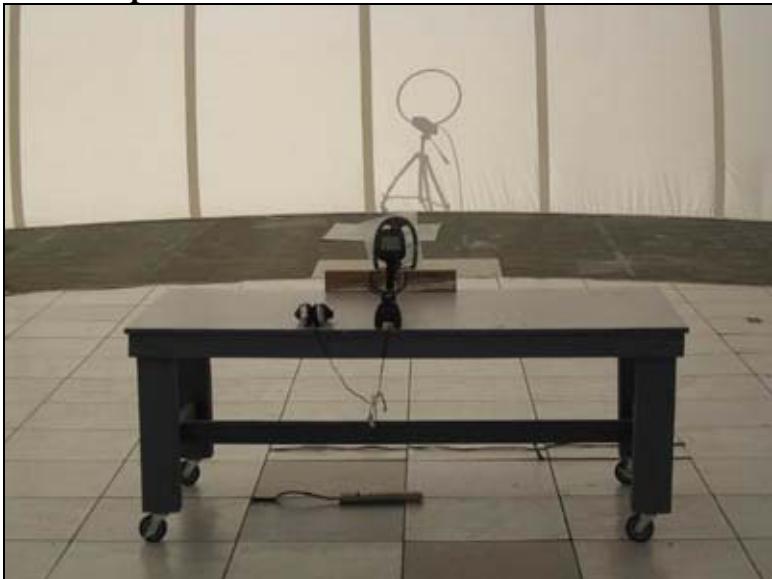
#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	60.001M QP	45.2	+2.2	-30.7	+6.8	+5.8	+10.0	39.3	40.0	-0.7	Vert
^	59.996M	48.7	+2.2	-30.7	+6.8	+5.8	+10.0	42.8	40.0	+2.8	Vert

3	59.994M	44.9	+2.2	-30.7	+6.8	+5.8	+10.0	39.0	40.0	-1.0	Horiz
QP											
^	60.003M	48.0	+2.2	-30.7	+6.8	+5.8	+10.0	42.1	40.0	+2.1	Horiz
5	47.996M	40.4	+2.2	-30.7	+10.1	+5.8	+10.0	37.8	40.0	-2.2	Horiz
QP											
^	48.015M	44.2	+2.2	-30.7	+10.1	+5.8	+10.0	41.6	40.0	+1.6	Horiz
7	71.995M	44.0	+2.2	-30.8	+6.5	+5.8	+10.0	37.7	40.0	-2.3	Horiz
8	71.994M	42.8	+2.2	-30.8	+6.5	+5.8	+10.0	36.5	40.0	-3.5	Vert
QP											
^	71.995M	47.9	+2.2	-30.8	+6.5	+5.8	+10.0	41.6	40.0	+1.6	Vert
10	116.002M	38.5	+2.5	-30.6	+11.3	+5.8	+10.0	37.5	43.5	-6.0	Vert
QP											
^	116.009M	39.2	+2.5	-30.6	+11.3	+5.8	+10.0	38.2	43.5	-5.3	Vert
12	111.988M	37.4	+2.4	-30.6	+11.0	+5.8	+10.0	36.0	43.5	-7.5	Vert
13	116.000M	36.5	+2.5	-30.6	+11.3	+5.8	+10.0	35.5	43.5	-8.0	Horiz
14	63.989M	38.2	+2.2	-30.7	+6.5	+5.8	+10.0	32.0	40.0	-8.0	Vert
15	67.997M	38.1	+2.2	-30.8	+6.3	+5.8	+10.0	31.6	40.0	-8.4	Vert
16	112.015M	35.8	+2.4	-30.6	+11.0	+5.8	+10.0	34.4	43.5	-9.1	Vert
17	124.006M	34.2	+2.6	-30.5	+11.7	+5.8	+10.0	33.8	43.5	-9.7	Vert
18	155.992M	34.5	+2.9	-30.3	+10.9	+5.8	+10.0	33.8	43.5	-9.7	Vert
19	139.994M	33.9	+2.7	-30.4	+11.6	+5.8	+10.0	33.6	43.5	-9.9	Vert
20	147.999M	34.2	+2.8	-30.4	+11.2	+5.8	+10.0	33.6	43.5	-9.9	Vert
21	67.010M	35.6	+2.2	-30.8	+6.4	+5.8	+10.0	29.2	40.0	-10.8	Vert
								BB			
22	163.994M	33.7	+3.0	-30.2	+10.3	+5.8	+10.0	32.6	43.5	-10.9	Vert
23	95.996M	35.3	+2.3	-30.7	+9.7	+5.8	+10.0	32.4	43.5	-11.1	Vert
24	63.230M	34.8	+2.2	-30.7	+6.6	+5.8	+10.0	28.7	40.0	-11.3	Vert
								BB			
25	119.996M	32.3	+2.5	-30.5	+11.6	+5.8	+10.0	31.7	43.5	-11.8	Vert
26	61.250M	34.1	+2.2	-30.7	+6.7	+5.8	+10.0	28.1	40.0	-11.9	Vert
								BB			
27	56.900M	33.2	+2.2	-30.7	+7.6	+5.8	+10.0	28.1	40.0	-11.9	Vert
								BB			

28	83.995M	32.5	+2.3	-30.7	+8.2	+5.8	+10.0	28.1	40.0	-11.9	Vert
29	58.670M	33.4	+2.2	-30.7	+7.1	+5.8	+10.0	27.8	40.0	-12.2	Vert
30	75.995M	33.0	+2.3	-30.7	+7.1	+5.8	+10.0	27.5	40.0	-12.5	Vert
31	64.250M	33.6	+2.2	-30.7	+6.5	+5.8	+10.0	27.4	40.0	-12.6	Vert
32	215.998M	30.7	+3.4	-29.9	+10.3	+5.8	+10.0	30.3	43.5	-13.2	Vert
33	131.983M	30.6	+2.6	-30.5	+11.7	+5.8	+10.0	30.2	43.5	-13.3	Vert
34	132.004M	30.4	+2.6	-30.5	+11.7	+5.8	+10.0	30.0	43.5	-13.5	Horiz
35	171.994M	31.6	+3.0	-30.1	+9.6	+5.8	+10.0	29.9	43.5	-13.6	Vert
36	167.986M	31.4	+3.0	-30.2	+9.9	+5.8	+10.0	29.9	43.5	-13.6	Vert
37	74.840M	32.0	+2.3	-30.7	+6.9	+5.8	+10.0	26.3	40.0	-13.7	Vert
38	72.290M	32.6	+2.2	-30.8	+6.5	+5.8	+10.0	26.3	40.0	-13.7	Vert
39	62.090M	32.2	+2.2	-30.7	+6.7	+5.8	+10.0	26.2	40.0	-13.8	Vert
40	60.200M	31.9	+2.2	-30.7	+6.8	+5.8	+10.0	26.0	40.0	-14.0	Vert
41	144.017M	29.5	+2.7	-30.4	+11.4	+5.8	+10.0	29.0	43.5	-14.5	Vert
42	72.560M	31.5	+2.2	-30.8	+6.6	+5.8	+10.0	25.3	40.0	-14.7	Vert
43	135.993M	29.2	+2.7	-30.5	+11.6	+5.8	+10.0	28.8	43.5	-14.7	Vert
44	74.150M	30.8	+2.3	-30.8	+6.8	+5.8	+10.0	24.9	40.0	-15.1	Vert
45	66.110M	31.3	+2.2	-30.8	+6.4	+5.8	+10.0	24.9	40.0	-15.1	Vert
46	155.995M	29.1	+2.9	-30.3	+10.9	+5.8	+10.0	28.4	43.5	-15.1	Horiz
47	73.790M	30.7	+2.2	-30.8	+6.8	+5.8	+10.0	24.7	40.0	-15.3	Vert
48	67.850M	29.9	+2.2	-30.8	+6.3	+5.8	+10.0	23.4	40.0	-16.6	Vert
49	203.993M	27.8	+3.3	-30.0	+9.4	+5.8	+10.0	26.3	43.5	-17.2	Vert
50	219.997M	27.4	+3.5	-29.8	+10.6	+5.8	+10.0	27.5	46.0	-18.5	Vert

## OCCUPIED BANDWIDTH

### **Test Setup Photos**



## Test Data

Test Location: CKC Laboratories • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer: **First Texas Products LLC**  
 Specification: **FCC 15.209**  
 Work Order #: **88547** Date: 10/20/2008  
 Test Type: **Maximized Emissions** Time: 16:56:40  
 Equipment: **Metal Detectors** Sequence#: 6  
 Manufacturer: First Texas Products LLC Tested By: Randal Clark  
 Model: F75  
 S/N: 09088773

***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer (Display)	2005A01550	02/05/2007	02/05/2009	01183
Spectrum Analyzer (RF Section)	2007A01066	02/05/2007	02/05/2009	01184
QP Adapter	2043A00104	02/05/2007	02/05/2009	00069
Site A 10 meter cable set		05/11/2007	05/11/2009	MA10M
EMCO Loop Antenna	1074	05/01/2007	05/01/2009	00226

***Equipment Under Test (\* = EUT):***

Function	Manufacturer	Model #	S/N
Metal Detectors*	First Texas Products LLC	F75	09088773

***Support Devices:***

Function	Manufacturer	Model #	S/N
Headphones	First Texas Products LLC	972095	

***Test Conditions / Notes:***

47 CFR 15.209, Occupied Bandwidth Test.  
 Equipment under test is a metal detector operating at 13kHz. For open area testing, the equipment is setup on a wooded table and operating normally. Attachment of the headphones were investigated, no change in emissions characteristics were measured with or without the headphones. Test distance correction factor applied in accordance with 15.31 of 40dB/decade to correct test data for comparison at the spec limit distance. Equipment tested with a new set of batteries.

Frequency Range Investigated: Carrier  
 Occupied Bandwidth is 175 Hz

Temperature: 28°C

Relative Humidity: 38%

First Texas Products F75 Occupied Bandwidth  
Ref Level 86.99 dB $\mu$ V ATTEN 0 dB OFFSET: 18.8dB  
RES BW: 100.0Hz VID BW: 300.0Hz SWP: 716.067msec  
Marker 1: 12.899kHz 35.8517 dB $\mu$ V Marker 2: 13.074kHz 35.7517 dB $\mu$ V Delta: 175.0Hz

