Electromagnetic Compatibility Test Report

Company Name:	TFT, Inc.
Equipment Under Test:	EAS Encoder / Decoder
Model Number:	EAS 911+
FCC ID:	BIOEAS911PLUS

Requirements:
47 CFR Part 2, Subpart J, Paragraph 2.906
47 CFR Part 11, Subpart B – Equipment Requirements

Verified by: Bob Cole
Authorized Signatory
Report #3770-1
Dated: 12/18/12

ACCREDITED BY THE NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM FOR THE SPECIFIC SCOPE OF ACCREDITATION UNDER LAB CODE #: 200092-0

Statement of Compliance

We, EMCE Engineering, declare under our sole responsibility that the product tested complies with the following listed standards:

Equipment under Test:	EAS Encoder / Decoder
Model Number:	PNSD32G-133-610 with sub-assembly 41359-C10-32GOM
Serial Number:	N/A
Report Number:	3770-1
Test Date:	12/18/12
Company:	TFT, Inc.
Street Address:	1953 Concourse Drive
City, State & ZIP	San Jose, CA 95133

This Statement of Compliance is based upon compliance of the product with the following FCC Rules:

47 CFR PART 2, SUBPART J, PARAGRAPH 2.906 *Part 11, Subpart B – Equipment Requirements*	

Issued by Test Laboratory:

Lab Code:200092-0
EMCE Engineering
44366 S. Grimmer Blvd.
Fremont, CA 94538
510-490-4307 Office / 510-490-3441 Fax

Verified By:

Bob Cole
Authorized Signatory

Test Location

EMCE
Electro Magnetic Controlled Environment
44366 S. Grimmer Blvd.
Fremont, CA 94538 USA

Table of Contents

Accreditation

EMCE Engineering, has been placed on the Federal Communications Commission's list of recognized facilities for Parts 15 and 18 DoC approvals. Per the request of EMCE Engineering, the facility has been added to the list of those who perform Measurement Services for the public on a fee basis. This list is published periodically and is also available on the FCC Website. Additionally, EMCE Engineering, has been approved by the National Institute for Standards and Technology under the NVLAP program (Lab Code 200092-0).

Disclaimer

EMCE Engineering, Inc., assumes no responsibility for the continuing validity of test data when the Equipment under Test is not under the continuous physical control of EMCE. The signature below attests to the fact that all measurements reported herein were performed by myself or were made under my supervision, and are correct to the best of my knowledge and belief as of the date specified. EMCE assumes full responsibility for the completeness of these measurements. Tests were conducted by qualified EMCE Engineering, Inc. personnel utilizing test equipment maintained in a "current" state of calibration with traceability to NIST.

- This report or certificate does not represent endorsement by NVLAP, NIST or any agency of the US Government.

- This report or certificate shall not be reproduced except in full without the written approval of the issuer.

Administrative Information

Equipment under Test:	EAS Encoder / Decoder
Model Number:	EAS 911+
Serial Number:	N/A
Report Number:	3770-1
Test Date:	12/18/12
Company:	TFT, Inc.
Street Address:	1953 Concourse Drive
City, State & ZIP	San Jose, CA 95133

EUT DESCRIPTION

The equipment under test is a TFT, Inc. EAS Encoder / Decoder

M/N: EAS 911+

MAXIMUM OPERATING FREQUENCY

EUT operates at the < 108 MHz:

Per EN55022, Radiated Emissions must be scanned to a range covering 30 MHz – 1 GHz.

TESTING CONFIGURATION

The EUT model name EAS 911+ was set up per the applicable specification during EMI testing.

TEST SUMMARY

The electromagnetic compatibility requirements on tested model name EAS 911+ for this test are listed below. All results listed in this report are related exclusively to the above-mentioned model as the equipment under test, and confers no endorsement or certification of any other component, host, or subsystem used in the testing configuration.

Specification	*Description*	*Test Results*	*Comments*
EN55022:2010 CLASS B	*Conducted Emission*	*Passed*	
EN55022:2010 CLASS B	*Radiated Emission*	*Passed*	

TEST MODE JUSTIFICATION

Test Standard	*Configuration Info*	*Comments*
EN 55022 Class B Radiated Emissions		
EN 55022 Class B Conducted Emissions		

EQUIPMENT MODIFICATIONS

Any modifications installed previous to testing by TFT, Inc. will be incorporated in each production model sold or leased.

There were no modifications installed by EMCE Engineering.

TEST SYSTEM DETAILS

EUT				
Model name:	*EAS Encoder / Decoder*			
Description:	*EAS 911+*			
Manufacturer:	*TFT, Inc.*			
Support Equipment				
Description	*Model Number*	*Serial Number*	*Manufacturer*	*Power Cable Description*
Serial Interface	EAS 941A	10101589	TFT, Inc.	AC Adapter
Modem	Modem Blaster	C1BF0080649000307H	Creative	AC Adapter
Modem	Modem Blaster	C1BF0080647001113B	Creative	AC Adapter
EAS Encoder/ Decoder	EAS 911	10103709+	TFT, Inc.	AC Adapter
Microphone	N/A	GS0410001239	Micro Innovations	N/A
Ethernet Switch	FS116	0116910	Netgear	AC Adapter

Cable Description				
From	*To*	*Length (Meters)*	*Shielded (Y/N)*	*Ferrite Loaded (Y/N)*
EAS 911+	Modem	1.0	Y	N
EAS 911+	Modem	1.0	Y	N
EAS 911+	Ethernet Switch	1	Y	N
EAS 911+	EAS 941A	0.4	Y	N
EAS 911+	EAS 941A	0.44	Y	N
EAS 911+	EAS 941A	0.44	Y	N
EAS 911+	EAS 941A	0.44	Y	N

TEST SETUP PHOTOS

Radiated Front View

TEST SETUP PHOTOS

Line Conducted Set up

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EUT PHOTO

EUT Front View

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EUT PHOTO

Rear View

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ATTACHMENT 1

EMISSION TEST RESULTS

EMCE Engineering
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EN 55022B Radiated Emissions
30 MHz – 1 GHz

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **TFT, Inc.**
Specification: **EN55022 A RADIATED - 2GHz**
Work Order #: **3775** Date: 9/22/2012
Test Type: **Radiated Scan** Time: 15:35:00
Equipment: **EAS** Sequence#: 1
Manufacturer: TFT, Inc. Tested By: Bob Cole
Model: EAS911D
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B Spectrum Analyzer	3014A06947	05/02/2012	05/02/2014	598
HP 85650A Quasi Peak Adapter	3145A01673	05/02/2012	05/02/2014	003
HP 8447D PreAmp	2443A03587	05/17/2012	05/17/2013	008
Sunol Sciences JB6 Antenna	1090	03/09/2012	03/09/2014	701
EMITest Measurement Software	v4.01 Build 195	05/01/2012	05/01/2014	610

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

Function	Manufacturer	Model #	S/N
EAS*	TFT, Inc.	EAS911D	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

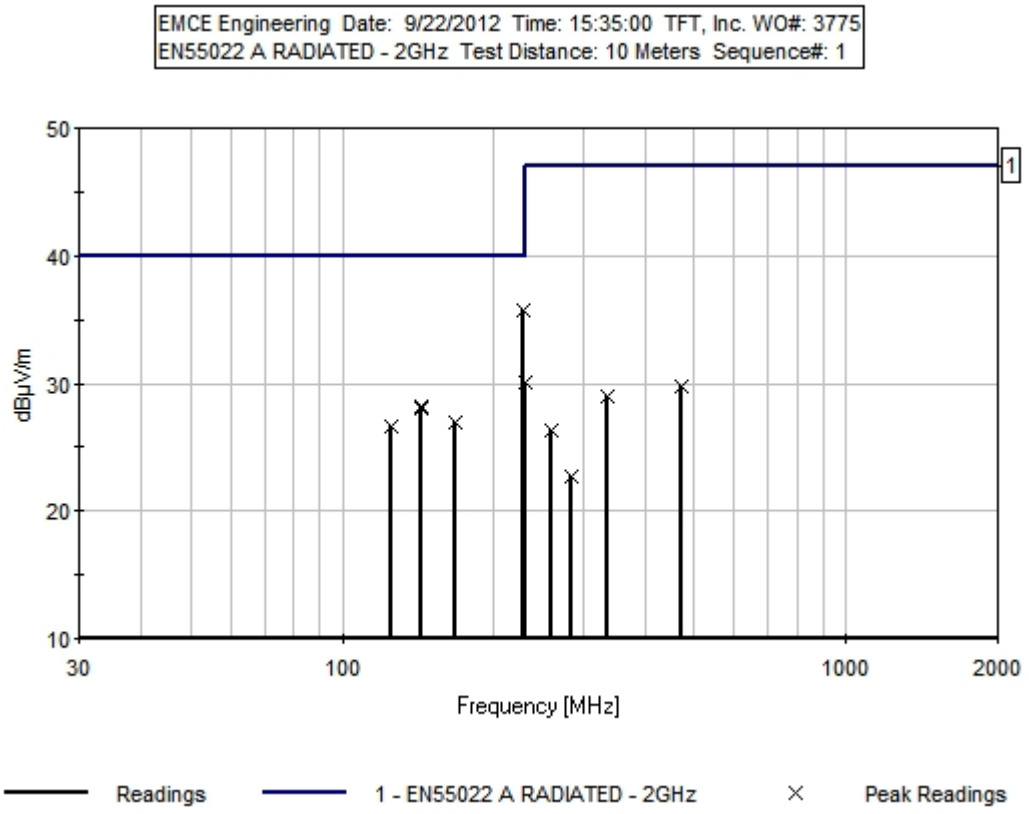
Transducer Legend:

T1=100' LMR600 Cable	T2=8447 Pre-Amp Asset 377
T3=Sunol JB6 S/N A42610	

Ext Attn: 0 dB

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	229.049M	50.3	+1.2	+26.9	+11.1		+0.0 4	35.7	40.0	-4.3	Horiz 254
2	143.993M	41.0	+1.0	+26.7	+12.9		+0.0 325	28.2	40.0	-11.8	Horiz 127
3	143.980M	40.9	+1.0	+26.7	+12.9		+0.0 170	28.1	40.0	-11.9	Vert 111
4	166.818M	40.7	+1.1	+26.8	+12.0		+0.0 186	27.0	40.0	-13.0	Horiz 146
5	125.000M	38.9	+1.0	+26.7	+13.5		+0.0 254	26.7	40.0	-13.3	Horiz 120
6	231.055M	44.8	+1.2	+27.0	+11.1		+0.0 143	30.1	47.0	-16.9	Vert 112
7	471.934M	37.3	+2.0	+26.9	+17.3		+0.0 144	29.7	47.0	-17.3	Horiz 144
8	335.492M	40.5	+1.4	+27.0	+14.1		+0.0 187	29.0	47.0	-18.0	Vert 128
9	260.854M	39.7	+1.2	+27.0	+12.4		+0.0 63	26.3	47.0	-20.7	Horiz 176
10	284.855M	35.0	+1.3	+27.0	+13.4		+0.0 164	22.7	47.0	-24.3	Vert 154



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EN 55022B Line Conducted Emissions
120V / 60 Hz - Line 1
150kHz – 30 MHz

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Test Location:

Customer:	**TFT, Inc.**		
Specification:	**EN55022 B COND [QP]**		
Work Order #:	**3770**	Date:	9/16/2012
Test Type:	**Conducted Emissions**	Time:	11:46:33 AM
Equipment:	**EAS**	Sequence#:	1
Manufacturer:	TFT, Inc.	Tested By:	Bob Cole
Model:	EAS911D		120V 60Hz
S/N:			

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #

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

Function	Manufacturer	Model #	S/N
EAS*	TFT, Inc.	EAS911D	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Quasi-Peak Measurements meet Average Limits

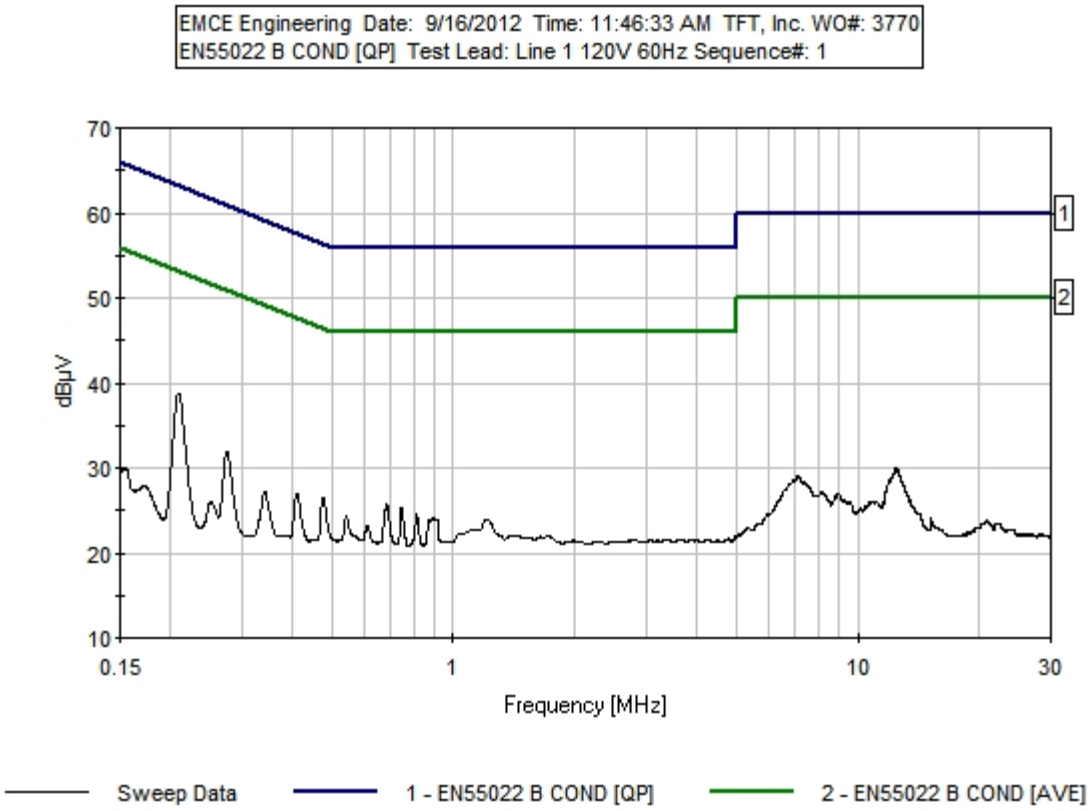
Transducer Legend:

T1=HP 11947A Trans. Limiter TL1 T2=25' LMR #001
T3=EMCO 3810-2 LISN S/N 9807-1988

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Line 1

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	208.903k	27.8	+10.0	+0.0	+1.0		+0.0	38.8	63.2	-24.4	Line
2	275.806k	21.0	+10.0	+0.0	+0.9		+0.0	31.9	60.9	-29.0	Line
3	475.786k	15.8	+10.0	+0.0	+0.7		+0.0	26.5	56.4	-29.9	Line
4	12.367M	19.1	+10.0	+0.0	+0.9		+0.0	30.0	60.0	-30.0	Line
5	684.492k	15.3	+9.9	+0.0	+0.6		+0.0	25.8	56.0	-30.2	Line
6	743.395k	14.9	+9.9	+0.0	+0.6		+0.0	25.4	56.0	-30.6	Line


EMCE Engineering Date: 9/16/2012 Time: 11:46:33 AM TFT, Inc. WO#: 3770
EN55022 B COND [QP] Test Lead: Line 1 120V 60Hz Sequence#: 1
70
60
50
40
30
20
10
dBµV
0.15
1
10
30
Frequency [MHz]
1
2
Sweep Data
1 - EN55022 B COND [QP]
2 - EN55022 B COND [AVE]

EN 55022B Line Conducted Emissions
120V / 60 Hz - Line 2
150kHz – 30 MHz

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **TFT, Inc.**
Specification: **EN55022 B COND [QP]**
Work Order #: **3770** Date: 9/16/2012
Test Type: **Conducted Emissions** Time: 11:54:13 AM
Equipment: **EAS** Sequence#: 2
Manufacturer: TFT, Inc. Tested By: Bob Cole
Model: EAS911D 120V 60Hz
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #

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

Function	Manufacturer	Model #	S/N
EAS*	TFT, Inc.	EAS911D	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

Quasi-Peak Measurements meet Average Limits

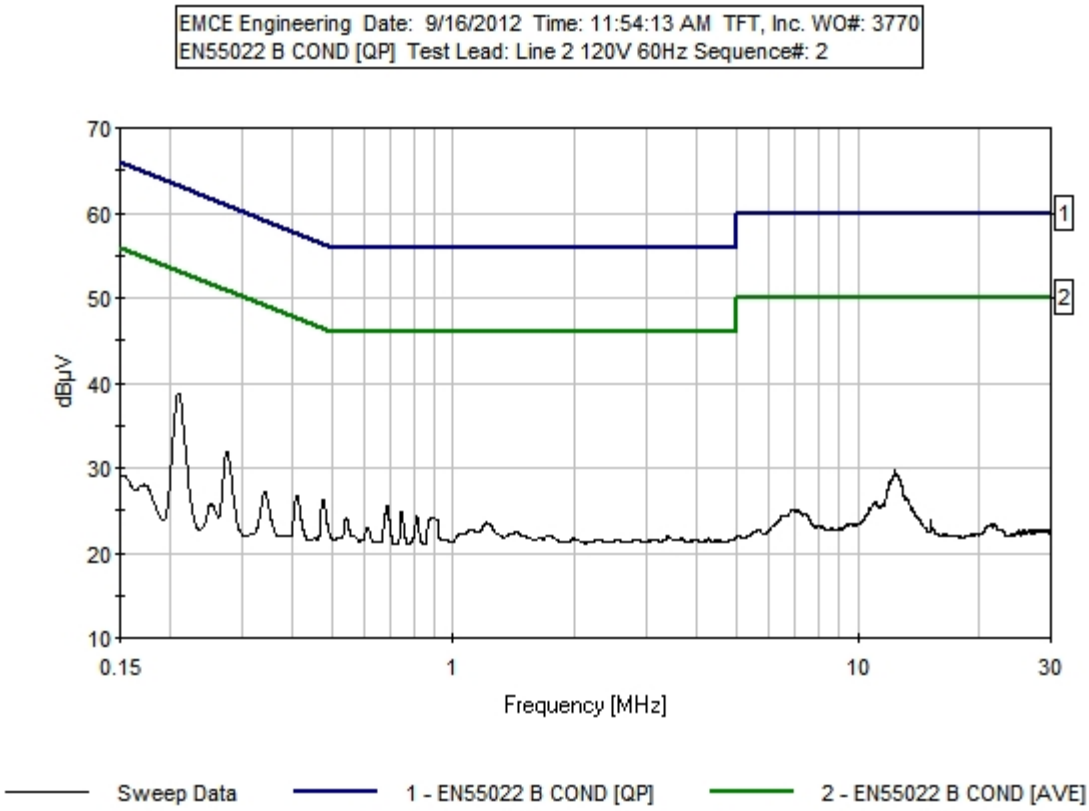
Transducer Legend:

T1=HP 11947A Trans. Limiter TL1 T2=25' LMR #001
T3=EMCO 3810-2 LISN S/N 9807-1988

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Line 2

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	208.903k	27.8	+10.0	+0.0	+1.0		+0.0	38.8	63.2	-24.4	Line
2	275.806k	21.1	+10.0	+0.0	+0.9		+0.0	32.0	60.9	-28.9	Line
3	475.058k	15.5	+10.0	+0.0	+0.7		+0.0	26.2	56.4	-30.2	Line
4	12.357M	18.8	+10.0	+0.0	+0.9		+0.0	29.7	60.0	-30.3	Line
5	683.765k	15.0	+9.9	+0.0	+0.6		+0.0	25.5	56.0	-30.5	Line
6	410.338k	16.0	+10.0	+0.0	+0.8		+0.0	26.8	57.6	-30.8	Line


EMCE Engineering Date: 9/16/2012 Time: 11:54:13 AM TFT, Inc. WO#: 3770
EN55022 B COND [QP] Test Lead: Line 2 120V 60Hz Sequence#: 2
70
60
50
40
30
20
10
dBµV
0.15
1
10
30
Frequency [MHz]
1
2
Sweep Data
1 - EN55022 B COND [QP]
2 - EN55022 B COND [AVE]

ATTACHMENT 2

CERTIFICATIONS

EMCE NVLAP ACCREDITATION

EMCE Engineering
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United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200092-0

Universal Compliance Labs dba EMCE Engineering

Fremont, CA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2012-01-01 through 2012-12-31

Effective dates

For the National Institute of Standards and Technology

NVLAP-01C (REV. 2009-01-28)

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