

Interactive Technologies Inc

**Interactive Technologies, Inc.
SX-V Translator
B4Z-762E-TRANS
Certification**

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Interactive Technologies Inc

**SX-V Translator
B4Z-762E-TRANS**

12/13/2001

**Interactive Technologies, Inc.
2266 North Second Street
North Saint Paul, MN 55109
(651) 777-2690**

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1. Introduction

This device is a wireless translator with a transmitter for use in a wireless security system. The unit is powered by 12VDC supplied by a security panel. The transmitter's frequency is crystal controlled and is not adjustable by the user. The device measures approximately 4" in width, 1" in depth and 6.25" in height. The unit weighs approximately 5 ounces.

We are requesting Certification under FCC Rules, Part 15, Subpart C, Paragraph 15.231.

Please send comments/suggestions on the report format to:
KenL.Nelson@Interlogixinc.com.

2. Statement of Compliance

§2.907 Certification

This is an application for certification

§2.911 Application

- a) This is an application and has been filed electronically with form 731.
- b) All information required has been supplied.
- c) The applicant has signed the application (electronically).
- d) The technical data has been signed.
(See Radiated Emissions)
- e) Applicant signature block on electronic form 731 completed by officer of the company or authorized company personnel.
- f) The appropriate fee has been paid electronically with VISA on 12/13/01.

§2.915 Grant

This application demonstrates that all applicable technical standards have been met and a grant of this application will serve the public interest.

§2.925 Label

Each piece of equipment for which authorization will be granted will be uniquely identified with "FCC ID: B4Z-762E-TRANS." The required statement will appear with the FCC ID on the product and, although not required, in the installation instructions. See Exhibit A, PDF file *id_label.pdf*

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§2.947 Measurement Procedure

- a) The measurement procedure follows ANSI C63.4 procedure.
Procedural notes are contained in the laboratory report.
- d) A list of test equipment used is contained in the laboratory report.

§2.948 Description of Measurement Facilities

Measurements were performed at TUV Testing Services Open Test Site. The FCC keeps a full description of the measurement facilities on file. TUV's acceptance and approval is dated as December 5, 1993 in a letter received from the FCC.

The address of the test facility is:

TUV Product Service
19035 Wild Mountain Road
Taylors Falls, MN 55084-1758

Phone: 651-638-0297
Contact: Joel Schneider
Test Engineer in Charge

See Exhibit F, PDF file *test_pho.pdf* for sketch of measurement setup

§2.1033 Application for Certification

- a) Form 731 has been electronically filed on 12/13/01. Items that did not apply were left blank.
- b) This technical report contains the following information where applicable.
 - 1) Full name and mailing address of manufacturer and applicant for certification:
Interactive Technologies Inc
2266 North Second Street
North Saint Paul, MN 55109
 - 2) FCC Identifier:
B4Z-762E-TRANS
 - 3) Copy of installation instructions:
See Exhibit G, PDF file: *user_man.pdf*
 - 4) Brief Description of circuit functions and device operation:
See Exhibit I, PDF file *op_desc.pdf*
See Exhibit D, PDF file *schemat.pdf* for schematics (page 1) and parts placement (page 2) diagrams.

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- 5) Block Diagram
See Exhibit C, PDF file *block.pdf*.
- 6) Report of the measurements of radiation and conducted emissions:
This document.
- 7) Photographs
External:
See Exhibit B, PDF file *extern.pdf*
Internal:
See Exhibit H, PDF file *intern.pdf*
- 8) Peripheral or Accessory devices:
This is not applicable since this device is stand-alone product.
- 9) Transition Rules
This application is not pursuant to the transition rules of §15.37
- 10) Emergency Broadcast decoding:
This is not applicable to device in this application.
- 11) Application for direct sequence spread spectrum devices...
This is not applicable to device in this application.
- 12) Application for scanning receivers...
This is not applicable to device in this application.
- c) Composite Systems
This is not applicable to device in this application.

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3. Lab Measurements Discussion / Test Notes

3.1 Test Notes

3.1.1 Transmissions shall cease within 5 seconds of activation [§15.231(a)(2)]

In the event of an alarm, 8 packets are sent in a transmission. The packet duration is, at most, 30 mS, see **Duty Cycle Correction Factor** [§15.231(b)(2) and §15.35(c)]. The time between packets random between 100 mS and 450 mS so the length of the longest transmission is:

$$8*30\text{mS} + 7*450\text{mS} = 3.39 \text{ seconds.}$$

The following plot shows a packet transmission that concludes in less than 5 seconds.

10:50:44 NOV 30, 2001

RL 0.00 dBm

MKR #1 SWT 1.587 sec

*ATTEN 0 dB

-15.33 dBm

10.00 dB/DIV

MARKER

1.587 sec

-15.33 dBm

CENTER 319.508 000 MHz

SPAN 0 Hz

*RB 300 kHz

*VB 100 kHz

*ST 5.000 sec

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3.1.2 Supervisory Calculation [§15.231(a)(3)]

As permitted, this device will transmit one packet, in low power, for supervision purposes. The packet itself may be as long as 30 ms depending on the data sent.

3.1.3 Duty Cycle Correction Factor [§15.231(b)(2) and §15.35(c)]

The transmitter employs amplitude modulation and transmits 64 bits. Each bit, except for one, has an “ON” time of 122 μ S. One bit has an on time of 366 μ S. The total on time of a single packet is:

$$63 * 122 \mu\text{S} + 366 \mu\text{S} = 8.052 \text{ mS}.$$

Only one packet is sent in any given 100 mS window for a duty cycle correction factor of:

$$20 * \text{LOG}(10.004 / 100) = -21.88 \text{ dB}$$

The maximum allowed correction factor is 20 dB.

The following plots show:

1. Single packet in 100 mS window.
2. Expanded view of a packet with a duration of 18.33 mS

(hp) 10:35:55 NOV 30, 2001

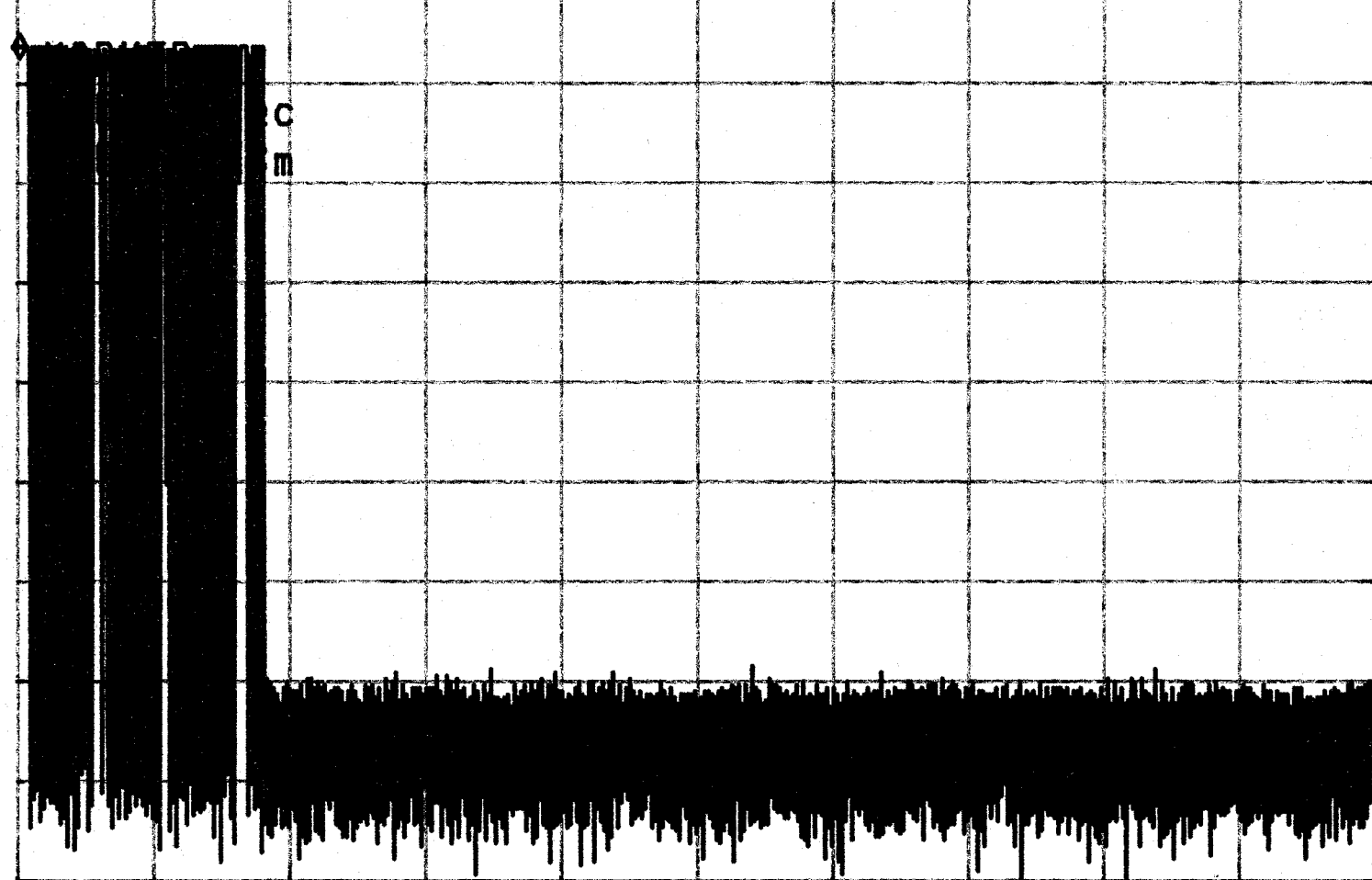
RL 0.00 dBm

MKR #1 SWT 250.0 usec

*ATTEN 0 dB

-16.18 dBm

10.00 dB/DIV



CENTER 319.508 000 MHz

SPAN 0 Hz

*RB 300 kHz

*VB 100 kHz

*ST 100.0 msec



NOV 30, 2001

MKR #1ΔSWT

18.33 msec

-0.02 dB

*ATTEN 0 dB

10.00 dB/DIV

MARKER

100-443887-100

11-11-11

— 10 —

SECRET

[REDACTED]

100

100

[REDACTED]

1

100

[REDACTED]

[REDACTED]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

100

100

ENTER

CENTER

RR 300

NO 300

CENTER 319.508 000 MHz

SPAN 0 Hz

*RB 300 kHz

*VB 100 kHz

*ST 26.00 msec

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3.1.4 Bandwidth Measurement [§15.231(c)]

Bandwidth Measurements were made in peak mode, using a Hewlett Packard Spectrum Analyzer, model number 70000.

The spectrum analyzer 20 dB skirt bandwidth is 3.3 KHz.

The allowed 20 dB bandwidth is 0.25% of center frequency.

Estimated signal bandwidth = Measured signal bandwidth - analyzer bandwidth.

Center Frequency MHz	Measured 20 dB Bandwidth in KHz	Estimated 20 dB signal Bandwidth in KHz	FCC allowed 20 dB Bandwidth in KHz
319.5	34.3	31.0	799

The following three plots show:

1. Bandwidth of carrier without modulation
2. Bandwidth of signal with modulation, 200 KHz span
3. Bandwidth of signal with modulation, 200 MHz span

10:17:06 NOV 30, 2001

RL 0.00 dBm

MKR #3 ΔFRQ 1.5 kHz

ATTEN 10 dB

-20.41 dB

10.00 dB/DIV

MKR AMPLITUDE right

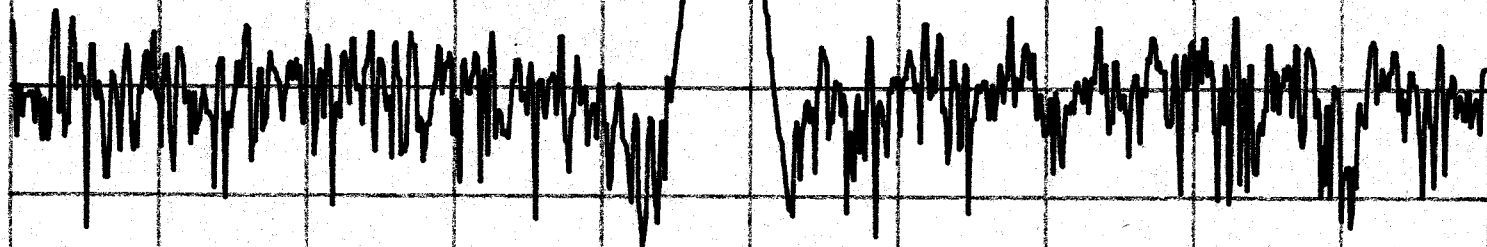
1.5 kHz

-20.26 dB

3

Marker Bandwidth

3.3 kHz



CENTER 319.508 0 MHz

SPAN 100.0 kHz

RB 1.00 kHz

VB 1.00 kHz

ST 305.0 msec

08:15:57 NOV 30, 2001

RL 0.00 dBm

MKR #1 Δ FRQ 37.3 kHz

ATTEN 10 dB

-1.05 dB

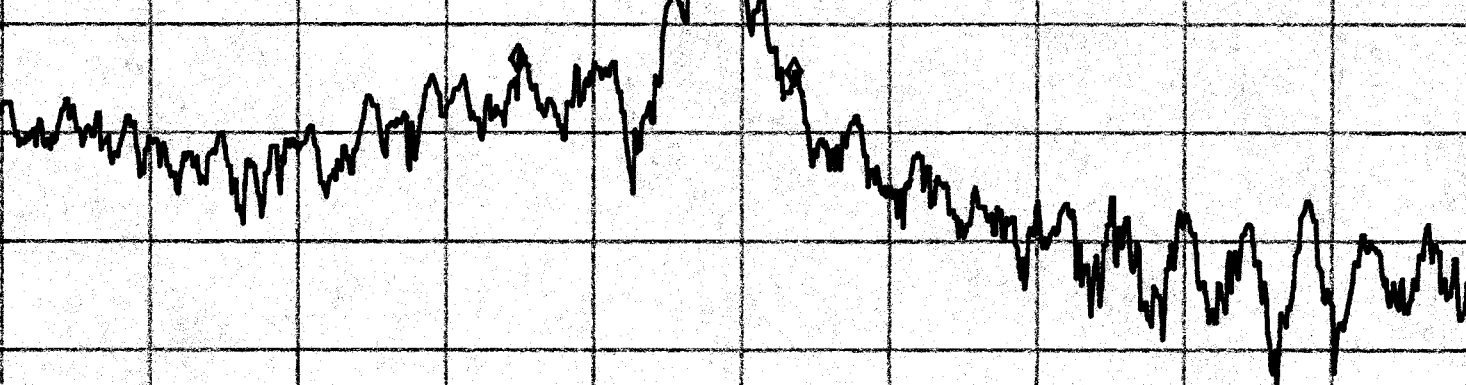
10.00 dB/DIV

MARKER Δ

37.3 kHz

-1.05 dB

1



CENTER 319.508 0 MHz

SPAN 200.0 kHz

RB 2.15 kHz

VB 3.00 kHz

ST 141.9 msec

(hp) 10:30:13 NOV 30, 2001

RL 0.00 dBm

MKR #1 FRQ 320.0 MHz

ATTEN 10 dB

-11.13 dBm

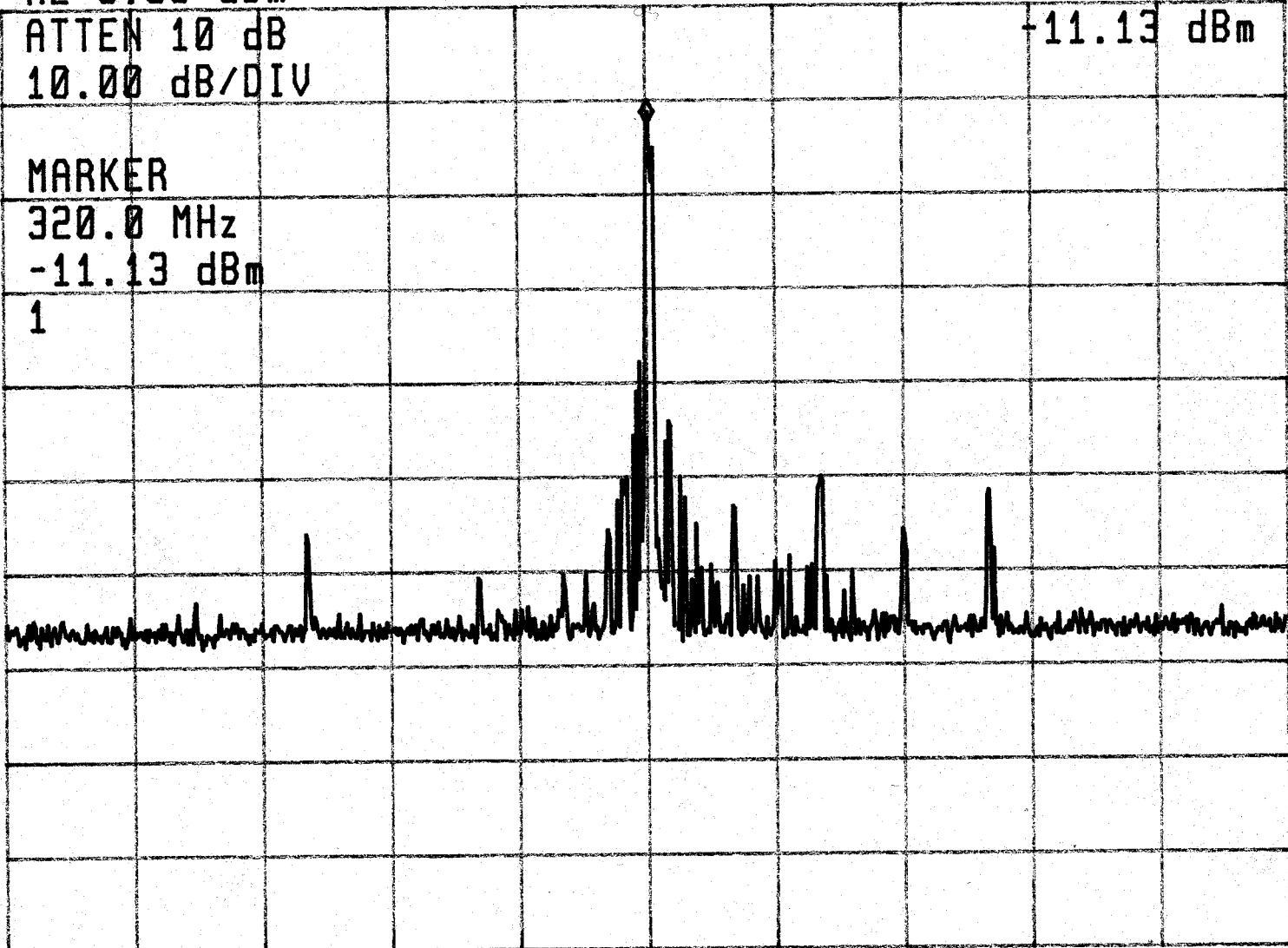
10.00 dB/DIV

MARKER

320.0 MHz

-11.13 dBm

1



CENTER 319.5 MHz

SPAN 200.0 MHz

RB 300 kHz

VB 300 kHz

ST 10.00 msec

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3.1.5 Emissions Measurements

3.1.5.1 Radiated Emissions Summary

The Allegro Control Panel passes FCC Rules Part 15, Subpart C, Paragraph 15.231. The highest fundamental radiated emission was 4.3 dB below the FCC limit at 319.49 MHz. The highest spurious emission measurement was .5 dB below the FCC limit at 106.48 MHz. The highest forbidden band emission was 14.3 dB below the FCC limit at 2662.53 MHz.

3.1.5.2 FCC Emissions Calculation

3.1.5.2.1 Terms

Term	Abbreviation	Units	Description
Analyzer Reading	AR	dBμV	The power reading read directly from the analyzer without any correction for cabling or receive antenna.
Duty Cycle Correction	DC	dB	Correction for averaging measurement, see Duty Cycle Correction Factor [§15.231(b)(2) and §15.35(c)]
Antenna Factor	AF	dB	Calibration factor for measurement antenna which converts from dBμV measured with antenna to the field strength received by the antenna in dBμV/M.
Cable Loss	CL	dB	Amount of power lost in cable (and connectors, if any) between antenna and analyzer
Pre-Amp	PA	dB	Gain in pre-amp

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3.1.5.2.2 Example Calculation

AR = 99.3 dBμV

AF = 13.9 dB

CL = 3.8 dB

DC = 20 dB

PA=26.2 dB

The field strength for comparison to FCC limits is found to be:

$$AR + AF + CL - DC - PA = 99.3 + 13.9 + 3.8 - 20 - 26.2 = 70.8 \text{ dB}\mu\text{V/M}$$

Alternatively, the AR + AF + CL - PA is compared to the FCC limit + DC. This number is often written to the right of measurement data on the test results. For example, the FCC limit for ITI transmitters at 319.5 MHz is approximately 95.8 dBμV/M. The limit from §15.231(b) with linear interpolation yields a limit, without consideration for duty cycle, of approximately 75.8 dBμV/M.

To convert to μV/M the following equation is used:

$$\mu\text{V/M} = \text{INVLOG}(\text{dB}\mu\text{V/M} / 20)$$

For the above example, 70.8 dBμV/M is 3,467.369μV/M

3.1.5.3 Radiated Emissions

The highest fundamental emission along with the three highest spurious and restricted band emissions are listed below as per ANSI C63.4 paragraph 10.1.8.2. Emissions from 0.009 MHz to the tenth harmonic were measured as per FCC Rules Part 15, Subpart C, Paragraph 15.33(a). Emission limits were derived from §15.231(b).

Frequency	Analyzer Reading	Duty Cycle Correction	Cable Loss	Antenna Factor	Pre-Amp	Field Strength	Field Strength	FCC Limit
MHz	dBuV	dB	dB	dB	dB	dBuV/M	uV/M	uV/M
319.49	103.10	20	2.1	14.0	27.7	71.50	3,758	6,229
106.48	92.50	20	1.3	9.4	27.9	55.30	582	623
212.98	90.00	20	1.7	11.1	27.7	55.10	569	623
425.99	82.90	20	2.4	16.9	27.7	54.50	531	623

3.1.5.4 Forbidden Band4s

Noise floor of spectrum analyzer with antenna factors and duty cycle correction converted to μV/M at approximately one meter.

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All measurements were taken with an HP 8566B Spectrum Analyzer. The bandwidth was 100 KHz for measurements below 1000 MHz. The bandwidth was 1 MHz for measurements above 1000 MHz. The video filter was off.

The noise floor measurements are summarized in the table below. See also the test data included in this report.

Frequency Range									
Low Limit	High Limit	Noise Floor Reading	Duty Cycle Corr	Field Strength	Field Strength	FCC Limit @ 3M	FCC Limit @ 1M		
MHz	MHz	dBuV	dB	dBuV/M	uV/M	uV/M	uV/M		
0.09000	0.11000	N/A	20	N/A	N/A	2400/F			
0.49500	0.50500	N/A	20	N/A	N/A	2400/F			
2.13750	2.19050	N/A	20	N/A	N/A	30	90		
4.12500	4.12800	N/A	20	N/A	N/A	30	90		
4.17725	4.17775	N/A	20	N/A	N/A	30	90		
4.20725	4.20775	N/A	20	N/A	N/A	30	90		
6.21500	6.21800	N/A	20	N/A	N/A	30	90		
6.26775	6.26825	N/A	20	N/A	N/A	30	90		
6.31175	6.31225	N/A	20	N/A	N/A	30	90		
8.29100	8.29400	N/A	20	N/A	N/A	30	90		
8.36200	8.36600	N/A	20	N/A	N/A	30	90		
8.37625	8.38675	N/A	20	N/A	N/A	30	90		
8.41425	8.41475	N/A	20	N/A	N/A	30	90		
12.29000	12.29300	N/A	20	N/A	N/A	30	90		
12.51975	12.52025	N/A	20	N/A	N/A	30	90		
12.57675	12.57725	N/A	20	N/A	N/A	30	90		
13.36000	13.41000	N/A	20	N/A	N/A	30	90		
16.42000	16.42300	N/A	20	N/A	N/A	30	90		
16.69475	16.69525	N/A	20	N/A	N/A	30	90		
16.80425	16.80475	N/A	20	N/A	N/A	30	90		
25.50000	25.67000	N/A	20	N/A	N/A	30	90		
37.50000	38.25000	23.00	20	3.0	1.4	100	300		
73.00000	74.60000	17.20	20	-2.8	0.7	100	300		
74.80000	75.20000	19.00	20	-1.0	0.9	100	300		
108.00000	121.94000	14.50	20	-5.5	0.5	150	450		
123.00000	138.00000	14.50	20	-5.5	0.5	150	450		
149.90000	150.05000	14.50	20	-5.5	0.5	150	450		
156.52475	156.52525	14.50	20	-5.5	0.5	150	450		
156.70000	156.90000	14.50	20	-5.5	0.5	150	450		
162.01250	167.17000	14.50	20	-5.5	0.5	150	450		
167.72000	173.20000	14.50	20	-5.5	0.5	150	450		
240.0	285.0	21.80	20	1.8	1.2	200	600		
322.0	335.4	21.80	20	1.8	1.2	200	600		
399.9	410.0	21.80	20	1.8	1.2	200	600		
608.0	614.0	21.80	20	1.8	1.2	200	600		
960.0	1240.0	21.80	20	1.8	1.2	500	1500	1065, 1171	
1300.0	1427.0	36.80	20	16.8	6.9	500	1500	1384	
1435.0	1626.5	38.00	20	18.0	7.9	500	1500	1491,1597	
1645.5	1646.5	40.90	20	20.9	11.1	500	1500		
1660.0	1710.0	40.90	20	20.9	11.1	500	1500	1704	
1718.8	1722.2	43.70	20	23.7	15.3	500	1500		
2200.0	2300.0	41.60	20	21.6	12.0	500	1500	2236	
2310.0	2390.0	41.60	20	21.6	12.0	500	1500	2343	
2483.5	2500.0	41.60	20	21.6	12.0	500	1500		
2655.0	2900.0	41.60	20	21.6	12.0	500	1500	2662, 2769, 2875	
3260.0	3267.0	41.60	20	21.6	12.0	500	1500		
3332.0	3339.0	41.60	20	21.6	12.0	500	1500		
3345.8	3358.0	41.60	20	21.6	12.0	500	1500		
3600.0	4400.0	41.60	20	21.6	12.0	500	1500		

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The test data follows on the next 4 pages:

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Radiated Electromagnetic Emissions



Test Report #:	7017 Run 5	Test Area:	LTS 3m	
Test Method:	N/A	Test Date:	16-Oct-2001	
EUT Model #:	SX5 TRANSLATOR (55-762)	EUT Power:	12VDC	
EUT Serial #:		Temperature:	21	°C
Manufacturer:	ITI	Relative Humidity:	34	%
EUT Description:	TRANSCIEVER	Air Pressure:	98.8	kPa
Notes:	TRANSMITTER SCAN		Page:	1 of 4

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV)	POL / HGT / AZ (m) (DEG)	DELTA1 N/A	DELTA2 N/A
ALL READINGS MAXIMIZED IN PEAK. 100KHZ RBW BELOW 1 GHZ AND 1MHZ RBW ABOVE 1GHZ.						
106.48	92.5 Pk	1.3 / 9.4 / 27.9	75.3	V / 1.0 / 0.0	N/A	N/A
212.98	90.0 Pk	1.7 / 11.1 / 27.7	75.0	V / 1.0 / 0.0	N/A	N/A
319.49	103.1 Pk	2.1 / 14.0 / 27.7	91.5	V / 1.0 / 0.0	N/A	N/A
319.49	97.5 Pk	2.1 / 14.0 / 27.7	85.9	H / 1.0 / 0.0	N/A	N/A
425.99	82.9 Pk	2.4 / 16.9 / 27.7	74.5	H / 1.0 / 0.0	N/A	N/A
532.49	67.2 Pk	2.5 / 18.9 / 27.6	61.1	H / 1.0 / 0.0	N/A	N/A
638.99	64.5 Pk	2.8 / 19.7 / 27.6	59.5	H / 1.0 / 0.0	N/A	N/A
745.49	54.6 Pk	3.0 / 21.0 / 27.5	51.2	V / 1.0 / 0.0	N/A	N/A
851.99	50.7 Pk	3.2 / 22.2 / 27.2	48.9	V / 1.0 / 0.0	N/A	N/A
958.49	46.0 Pk	3.5 / 23.1 / 27.2	45.4	V / 1.0 / 0.0	N/A	N/A
1064.99	50.9 Pk	3.6 / 23.1 / 27.2	50.3	V / 1.0 / 0.0	N/A	N/A
1171.50	47.4 Pk	3.8 / 24.2 / 27.1	48.3	V / 1.0 / 0.0	N/A	N/A
1278.00	52.4 Pk	4.0 / 25.1 / 27.5	54.0	V / 1.0 / 0.0	N/A	N/A
1384.50	42.5 Pk	4.3 / 25.9 / 27.5	45.2	V / 1.0 / 0.0	N/A	N/A
1491.01	50.4 Pk	4.6 / 27.1 / 27.3	54.7	V / 1.0 / 0.0	N/A	N/A
1597.51	48.1 Pk	5.0 / 27.3 / 27.4	53.0	V / 1.0 / 0.0	N/A	N/A
1704.01	48.4 Pk	5.5 / 28.6 / 27.0	55.5	H / 1.0 / 0.0	N/A	N/A
1810.51	44.3 Pk	6.1 / 28.1 / 27.2	51.3	H / 1.0 / 0.0	N/A	N/A
1917.01	44.6 Pk	6.4 / 28.5 / 26.9	52.6	H / 1.0 / 0.0	N/A	N/A
2023.51	42.1 Pk	4.7 / 29.7 / 27.2	49.3	V / 1.0 / 0.0	N/A	N/A
2130.02	42.1 Pk	4.8 / 29.9 / 27.3	49.5	V / 1.0 / 0.0	N/A	N/A
2236.52	42.6 Pk	5.0 / 30.1 / 26.9	50.8	V / 1.0 / 0.0	N/A	N/A
2343.02	45.4 Pk	4.9 / 30.4 / 26.8	53.8	V / 1.0 / 0.0	N/A	N/A
2449.53	39.7 Pk	5.0 / 30.6 / 26.8	48.4	V / 1.0 / 0.0	N/A	N/A

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Radiated Electromagnetic Emissions



Test Report #: 7017 Run 5 Test Area: LTS 3m
Test Method: N/A Test Date: 16-Oct-2001
EUT Model #: SX5 TRANSLATOR EUT Power: 12VDC
(55-762)
EUT Serial #: _____ Temperature: 21 °C
Manufacturer: ITI Relative Humidity: 34 %
EUT Description: TRANSCIVER Air Pressure: 98.8 kPa
Notes: TRANSMITTER SCAN Page: 2 of 4

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV)	POL / HGT / AZ (m) (DEG)	DELTA1 N/A	DELTA2 N/A
2556.03	51.1 Pk	5.1 / 30.8 / 27.0	60.1	V / 1.0 / 0.0	N/A	N/A
2662.53	50.1 Pk	5.6 / 31.0 / 27.0	59.7	V / 1.0 / 0.0	N/A	N/A
2769.03	44.1 Pk	6.0 / 31.2 / 27.0	54.4	V / 1.0 / 0.0	N/A	N/A
2875.53	47.8 Pk	5.9 / 31.5 / 27.1	58.0	V / 1.0 / 0.0	N/A	N/A
2982.03	48.8 Pk	5.8 / 31.7 / 27.5	58.9	V / 1.0 / 0.0	N/A	N/A
3088.53	42.8 Pk	5.9 / 31.9 / 28.2	52.5	V / 1.0 / 0.0	N/A	N/A
3195.03	36.1 Pk	6.0 / 32.2 / 28.2	46.1	V / 1.0 / 0.0	N/A	N/A
END OF SCAN.						

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Radiated Electromagnetic Emissions



Test Report #:	7017 Run 5	Test Area:	LTS 3m	
Test Method:	N/A	Test Date:	16-Oct-2001	
EUT Model #:	SX5 TRANSLATOR (55-762)	EUT Power:	12VDC	
EUT Serial #:		Temperature:	21	°C
Manufacturer:	ITI	Relative Humidity:	34	%
EUT Description:	TRANSCIVER	Air Pressure:	98.8	kPa
Notes:	TRANSMITTER SCAN		Page:	3 of 4

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV)	POL / HGT / AZ (m) (DEG)	DELTA1 N/A	DELTA2 N/A
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***** MEASUREMENT SUMMARY *****						
106.48	92.5 Pk	1.3 / 9.4 / 27.9	75.3	V / 1.0 / 0.0	N/A	N/A
212.98	90.0 Pk	1.7 / 11.1 / 27.7	75.0	V / 1.0 / 0.0	N/A	N/A
319.49	103.1 Pk	2.1 / 14.0 / 27.7	91.5	V / 1.0 / 0.0	N/A	N/A
425.99	82.9 Pk	2.4 / 16.9 / 27.7	74.5	H / 1.0 / 0.0	N/A	N/A
532.49	67.2 Pk	2.5 / 18.9 / 27.6	61.1	H / 1.0 / 0.0	N/A	N/A
638.99	64.5 Pk	2.8 / 19.7 / 27.6	59.5	H / 1.0 / 0.0	N/A	N/A
745.49	54.6 Pk	3.0 / 21.0 / 27.5	51.2	V / 1.0 / 0.0	N/A	N/A
851.99	50.7 Pk	3.2 / 22.2 / 27.2	48.9	V / 1.0 / 0.0	N/A	N/A
958.49	46.0 Pk	3.5 / 23.1 / 27.2	45.4	V / 1.0 / 0.0	N/A	N/A
1064.99	50.9 Pk	3.6 / 23.1 / 27.2	50.3	V / 1.0 / 0.0	N/A	N/A
1171.50	47.4 Pk	3.8 / 24.2 / 27.1	48.3	V / 1.0 / 0.0	N/A	N/A
1278.00	52.4 Pk	4.0 / 25.1 / 27.5	54.0	V / 1.0 / 0.0	N/A	N/A
1384.50	42.5 Pk	4.3 / 25.9 / 27.5	45.2	V / 1.0 / 0.0	N/A	N/A
1491.01	50.4 Pk	4.6 / 27.1 / 27.3	54.7	V / 1.0 / 0.0	N/A	N/A
1597.51	48.1 Pk	5.0 / 27.3 / 27.4	53.0	V / 1.0 / 0.0	N/A	N/A
1704.01	48.4 Pk	5.5 / 28.6 / 27.0	55.5	H / 1.0 / 0.0	N/A	N/A
1810.51	44.3 Pk	6.1 / 28.1 / 27.2	51.3	H / 1.0 / 0.0	N/A	N/A
1917.01	44.6 Pk	6.4 / 28.5 / 26.9	52.6	H / 1.0 / 0.0	N/A	N/A
2023.51	42.1 Pk	4.7 / 29.7 / 27.2	49.3	V / 1.0 / 0.0	N/A	N/A
2130.02	42.1 Pk	4.8 / 29.9 / 27.3	49.5	V / 1.0 / 0.0	N/A	N/A
2236.52	42.6 Pk	5.0 / 30.1 / 26.9	50.8	V / 1.0 / 0.0	N/A	N/A
2343.02	45.4 Pk	4.9 / 30.4 / 26.8	53.8	V / 1.0 / 0.0	N/A	N/A
2449.53	39.7 Pk	5.0 / 30.6 / 26.8	48.4	V / 1.0 / 0.0	N/A	N/A
2556.03	51.1 Pk	5.1 / 30.8 / 27.0	60.1	V / 1.0 / 0.0	N/A	N/A

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Radiated Electromagnetic Emissions



Test Report #:	7017 Run 5	Test Area:	LTS 3m
Test Method:	N/A	Test Date:	16-Oct-2001
EUT Model #:	SX5 TRANSLATOR (55-762)	EUT Power:	12VDC
EUT Serial #:		Temperature:	21 °C
Manufacturer:	ITI	Relative Humidity:	34 %
EUT Description:	TRANSCIVER	Air Pressure:	98.8 kPa
Notes:	TRANSMITTER SCAN	Page:	4 of 4

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV)	POL / HGT / AZ (m) (DEG)	DELTA1 N/A	DELTA2 N/A
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***** MEASUREMENT SUMMARY *****						
2662.53	50.1 Pk	5.6 / 31.0 / 27.0	59.7	V / 1.0 / 0.0	N/A	N/A
2769.03	44.1 Pk	6.0 / 31.2 / 27.0	54.4	V / 1.0 / 0.0	N/A	N/A
2875.53	47.8 Pk	5.9 / 31.5 / 27.1	58.0	V / 1.0 / 0.0	N/A	N/A
2982.03	48.8 Pk	5.8 / 31.7 / 27.5	58.9	V / 1.0 / 0.0	N/A	N/A
3088.53	42.8 Pk	5.9 / 31.9 / 28.2	52.5	V / 1.0 / 0.0	N/A	N/A
3195.03	36.1 Pk	6.0 / 32.2 / 28.2	46.1	V / 1.0 / 0.0	N/A	N/A

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