

APPLICANT: AZDEN CORPORATION
FCC ID: BZB30BT

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EXHIBITS CONTAINING:

FCC ID LABEL SAMPLE & ID LABEL LOCATION
BLOCK DIAGRAM
SCHEMATICS
TUNING PROCEDURE
CIRCUIT DESCRIPTION
USER'S MANUAL
TEST SET UP PHOTOGRAPH
EXTERNAL PHOTOGRAPHS
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GENERAL INFORMATION REQUIRED
FOR TYPE ACCEPTANCE

- 2.1033(c)(1) AZDEN CORPORATION will manufacture the BZB30BT in
2.1033(c)(2) quantity, for use under FCC RULES PART 74.801, LOW
POWER AUXILIARY STATIONS.

AZDEN CORPORATION
1-12-17 KAMI-RENJAKU
MITAKA, TOKYO, 181, JAPAN

2.1033 TECHNICAL DESCRIPTION

- (c)(3) Instruction book. The instruction manual is included
as an Exhibit

- (c)(4) Type of Emission: 100K0F3E

Bn = 2M + 2DK
M = 20000
D = 45kHz(Peak Deviation)
K = 1
Bn = 2(10k) + 2(40k)(1) = 100k

ALLOWED AUTHORIZED BANDWIDTH = 200kHz.
74.861(e)(5)

- (c)(5) Frequency Range: Part 74: 794-806 MHz

- (c)(6) Power Range and Controls: UNIT has no controls.

- (c)(7) Maximum Output Power Rating: 0.033 Watts into 50
ohms resistive load.

- (c)(8) DC Voltages and Current into Final Amplifier:

FINAL AMPLIFIER ONLY
3.0V
Vce = 3.0 Volts
Ice = 0.14 A.

0.42 WATTS INPUT

- (c)(9) Tune-up procedure. The tune-up procedure is included.

- (c)(10) Schematic and Block Diagram are included.

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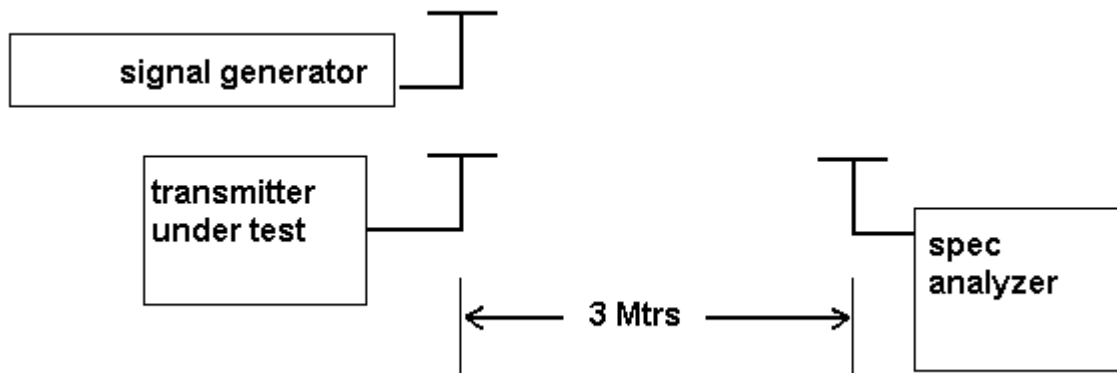
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- 2.1033(c)11) Sample of FCC ID Label and sketch of location is included.
- 2.1033(c)12) Photos of Equipment - Internal and External photos of the equipment are included.
- (c)(13) Description of all circuitry and devices provided for determining and stabilizing frequency is included in the exhibits.
- Limiting Power:
There is no provision for limiting power.
- (13) Digital modulation. This unit does not use digital modulation.
- 2.1033(c)(14) The data required by 2.1046 through 2.1057 is submitted below.
- 2.1046 RF power output.
- RF power measured is:
OUTPUT POWER: .033 WATTS

R.F. POWER OUTPUT TEST PROCEDURE

Radiated via substitution method

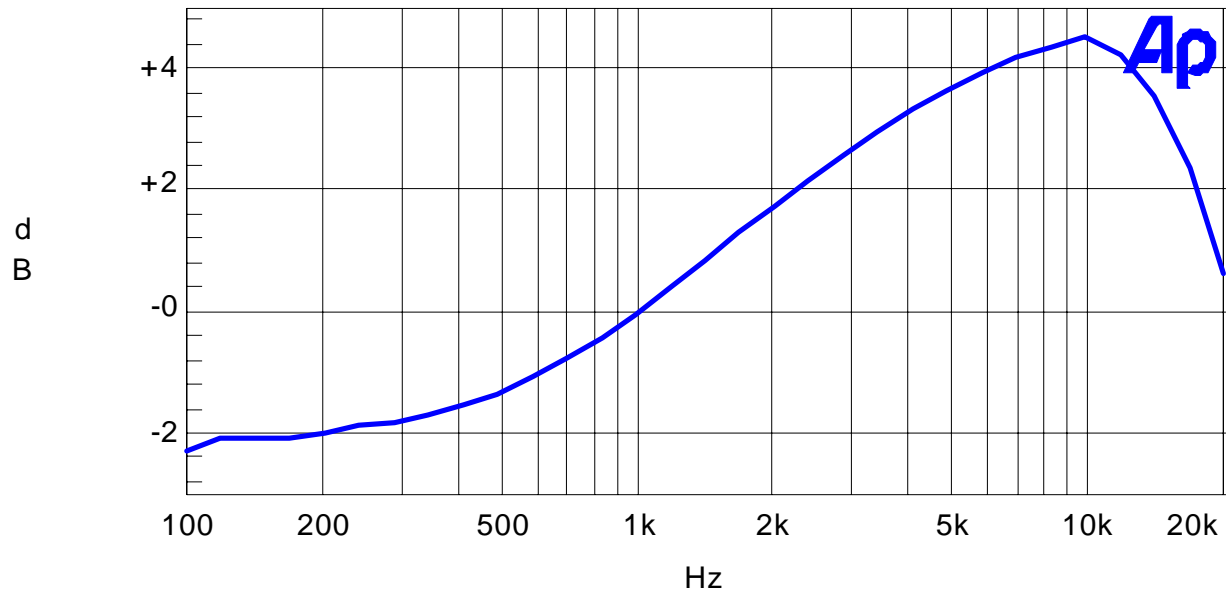


2.1047(a)(b) Modulation characteristics:

AUDIO FREQUENCY RESPONSE

The audio frequency response was measured in accordance with TIA/EIA Specification 603. The audio frequency response curve is shown below.

Audio Frequency Response



Color	Line Style	Thick	Data	Axis
Blue	Solid	2	Anlr.Level A!Normalize	Left

MaxFreq.at1

AUDIO LOW PASS FILTER

The audio low pass filter is not required in this unit.

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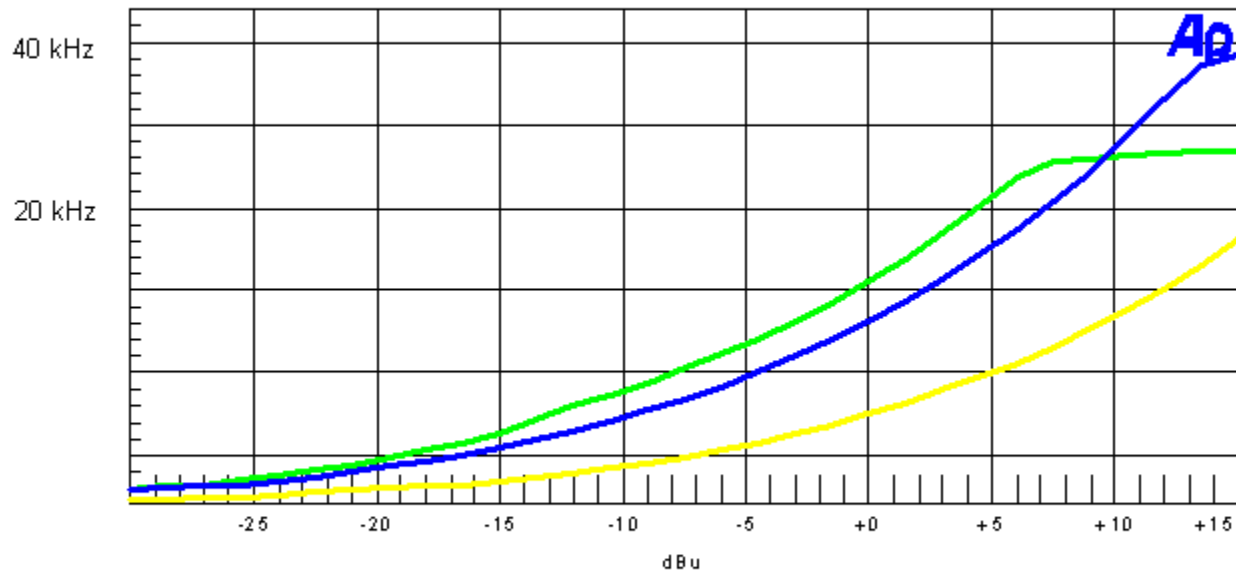
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2.1047(a)(b) Modulation characteristics:

MODULATION LIMITING PLOT

Modulation Limiting Plots:
10KHz (Green), 3KHz (Blue), and 300Hz (Yellow)



modulation limiting.att

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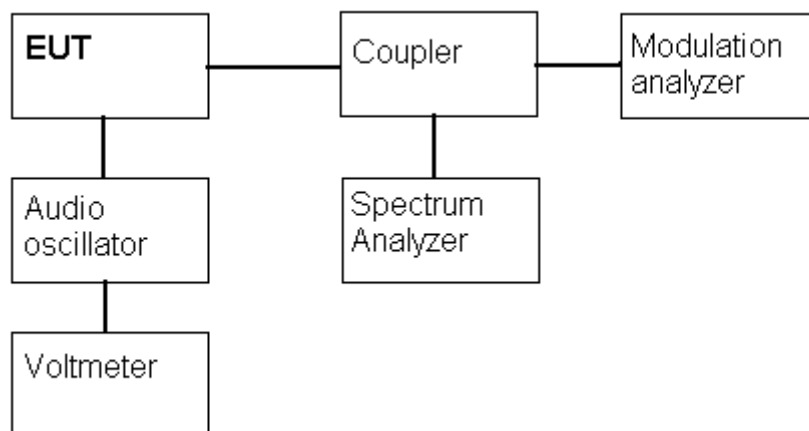
2.1049(c) Occupied Bandwidth:

Data in the plots show that all sidebands between 50 & 100% for the authorized bandwidth are attenuated by at least 25dB. From 100 to 250% of the authorized bandwidth they are attenuated by at least 35dB and beyond 250% $43 \log(P_o)$ dB. The plot shows the transmitter modulated with 15000 Hz (the highest modulation frequency), adjusted for 50% modulation plus 16 dB. The spectrum analyzer was set with the un-modulated carrier at the top of the screen. The test procedure diagram and occupied bandwidth plot follow.

Wireless Microphone transmitter:

Test procedure diagram

OCCUPIED BANDWIDTH MEASUREMENT



REQUIREMENT: PART 74: 200kHz EMISSION BANDWIDTH.

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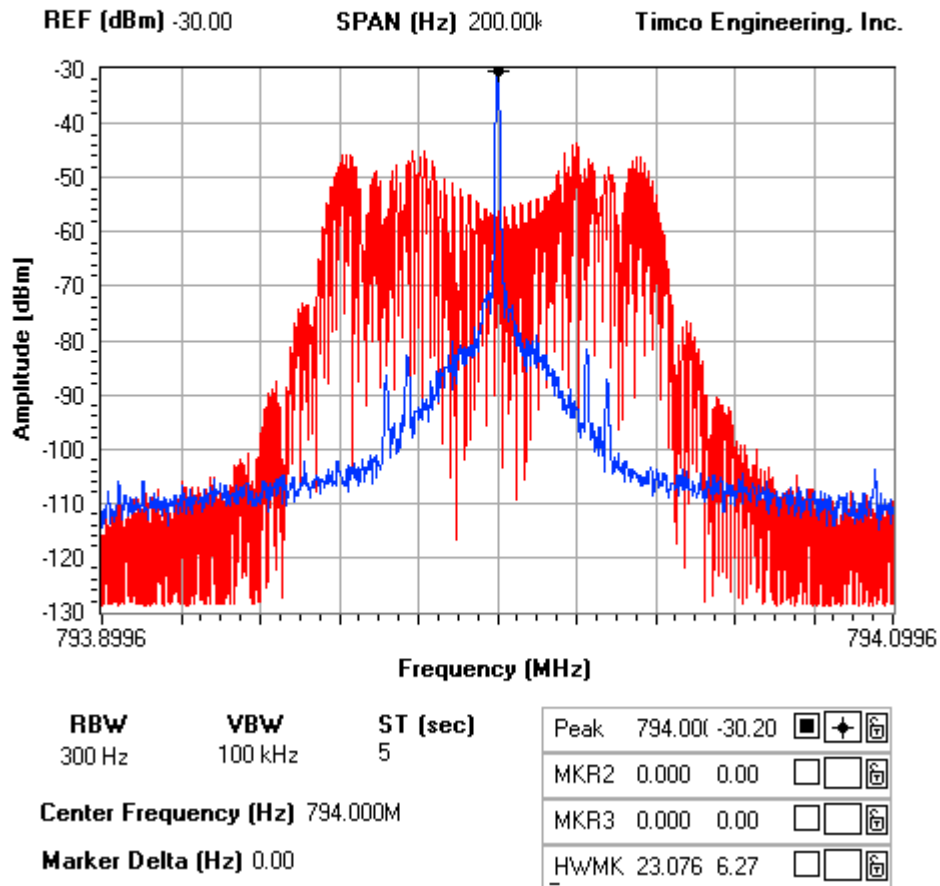
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2.1049(c) Occupied Bandwidth:

NOTES:

AZDEN CORPORATION - FCC ID: BZB30BT
OCCUPIED BANDWIDTH PLOT



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2.1051 Spurious emissions at antenna terminals (conducted):
Not Applicable no antenna connector.

2.1053(a)(b) Field strength of spurious emissions:

NAME OF TEST: RADIATED SPURIOUS EMISSIONS

REQUIREMENTS: Emissions must be 43 +10log(Po) dB below the
mean power output of the transmitter.

$$43 + 10 \log(0.033) = 28.19 \text{ dB}$$

TEST DATA:

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
794.00	V	0
1588.00	V	45.81
2382.00	H	37.78
3176.00	H	39.32
3970.00	H	44.97
4764.00	H	35.52
5558.00	H	29.65
6352.00	H	36.28
7146.00	H	37.79
7940.00	H	51.66

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
800.00	V	0
1600.00	V	48.11
2400.00	H	39.62
3200.00	H	35.32
4000.00	H	47.07
4800.00	H	35.47
5600.00	H	29.3
6400.00	H	38.51
7200.00	H	36.75
8000.00	H	41.04

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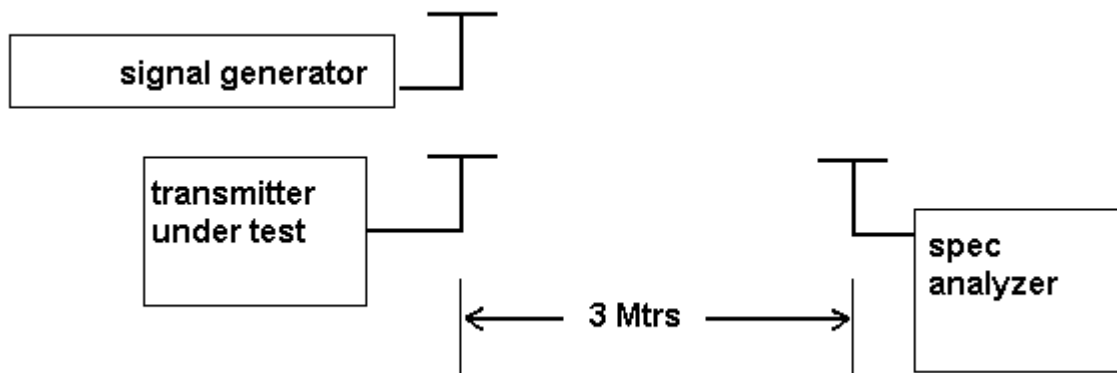
2.1053(a)(b) Field strength of spurious emissions:

NAME OF TEST: RADIATED SPURIOUS EMISSIONS

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
806.00	V	0
1612.00	H	49
2418.00	H	38.96
3224.00	H	32.51
4030.00	H	47.03
4836.00	H	38.21
5642.00	H	30.45
6448.00	H	37.45
7254.00	H	37.11
8060.00	H	39.99

METHOD OF MEASUREMENT: The procedure used was TIA/EIA STANDARD 603. The spectrum was scanned from 30 to at least the tenth harmonic of the fundamental using a HP model 8566B spectrum analyzer and an appropriate antenna. Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 849 NW SR 45 Newberry, Florida 32669.

Method of Measuring Radiated Spurious Emissions



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2.1055 Frequency stability:
S74.861(e)(4)

Temperature and voltage tests were performed to verify that the frequency remains within the .0050%, (50 ppm) (74.861 e.4) specification limit.

The test was conducted as follows: The transmitter was placed in the temperature chamber at 25 degrees C and allowed to stabilize for one hour. The transmitter was keyed ON for one minute during which four frequency readings were recorded at 15-second intervals. The worse case number was taken for temperature plotting. The assigned channel frequency was considered to be the reference frequency. The temperature was then reduced to -30 degrees C after which the transmitter was again allowed to stabilize for one hour. The transmitter was keyed ON for one minute, and again frequency readings were noted at 15-second intervals. The worst-case number was recorded for temperature plotting. This procedure was repeated in 10-degree increments up to + 50 degrees C.

MEASUREMENT DATA:

		Ref. Freq.	
		799.999526	
TEMPERATURE °C		FREQUENCY MHz	PPM
-30C		799.984609	-18.65
-20C		799.990606	-11.15
-10C		799.994793	-5.92
0C		799.997551	-2.47
10C		799.998958	-0.71
20C		799.999526	0.00
30C		799.999524	0.00
40C		799.999715	0.24
50C		800.000450	1.16
Batt.	Volts		PPM
-15%	2.55	799.999516	-0.01

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EMC Equipment List

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/27/04	3/26/07
3-Meter OATS	TEI	N/A	N/A	Listed 1/13/03	1/12/06
Biconnical Antenna	Eaton	94455-1	1057	CAL 3/18/03	3/18/05
Biconnical Antenna	Eaton	94455-1	1096	CAL 8/17/04	8/17/06
Biconnical Antenna	Electro- Metrics	BIA-25	1171	CAL 4/29/05	4/29/07
Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/13/05	4/13/07
Blue Tower RF	HP	85685A	2926A00983	CAL 8/3/05	8/3/07
Preselector Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 4/13/05	4/13/07
Double- Ridged Horn Antenna	Electro- Metrics	RGA-180	2319	CAL 12/29/04	12/29/06
LISN	Electro- Metrics	ANS-25/2	2604	CAL 8/27/04	8/27/06
LISN	Electro- Metrics	EM-7820	2682	CAL 4/28/05	4/28/07
Log- Periodic Antenna	Eaton	96005	1243	CAL 5/8/03	5/8/05

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