

Date : 03/13/2008

Tested by :G. BARBATO

Approved by :K.Addy

Test Sample (model) : 5819AP - EUT Description - Shock Processor Transmitter

Test method: ANSI C63.4 - 2004

Test specification: FCC Part 15.231(b), Sub-part C and RSS 210 , Issue 7

Notes: (1) Fo = 315MHz. (2) Detector = Peak (3) Frequency range scanned to 4 GHz.

Emissions not reported were more than 20dB below the specified unit.

[(Meter reading + Cable/Amp factor + Antenna factor) / 20]

(4) Conv. Reading = 10

(5) Corr. Reading = Conv. Reading X Duty Cycle

(6) Six Highest Emissions Recorded

Freq. (MHz)	Antenna Polarity (V/H)	Meter Reading (dB uV)	Cable/Amp Factor (dB)	Antenna Factor (dB/m)	Conv. Reading (uV/M)	Duty Cycle (%)	Corr. Reading (uV/M)	Limit @ 3M (uV/M)
30			CABLE "A"+"B"	10 May 07 BICONILOG S/N:00045682				604.2
315	h	71.59	2.5	13.57	24154.6	10.0%	2415.5	6042.0
630	h	31.59	3.5	18.82	496.0	10.0%	49.6	604.2
945	h	16.89	4.6	21.84	146.7	10.0%	14.7	604.2
1260	h	30.00	5.3	26.38	1213.4	10.0%	121.3	500.0
1575	h	21.49	6.1	26.55	509.3	10.0%	50.9	604.2
1890	h	16.00	6.6	28.81	372.0	10.0%	37.2	604.2
2205	h	17.19	7.4	29.89	529.7	10.0%	53.0	500.0
2520	h	16.89	7.8	32.86	754.2	10.0%	75.4	604.2
2835	h	16.45	8.8	32.40	763.0	10.0%	76.3	500.0
3150	h	17.19	9.1	32.45	865.0	10.0%	86.5	604.2
4000			CABLE "A"+"B"	10 May 07 BICONILOG S/N:00045682				

DATE	REV.	REVISION RECORD	ENGR	APP
		SEE SHEET 1		

DATE: 2/27/2008	TESTED BY: Y. Mohammed - CFR 15.231(c)
PCB/ASSY REVISION: N7195V3 /Rev A	PRODUCT: 5819AP

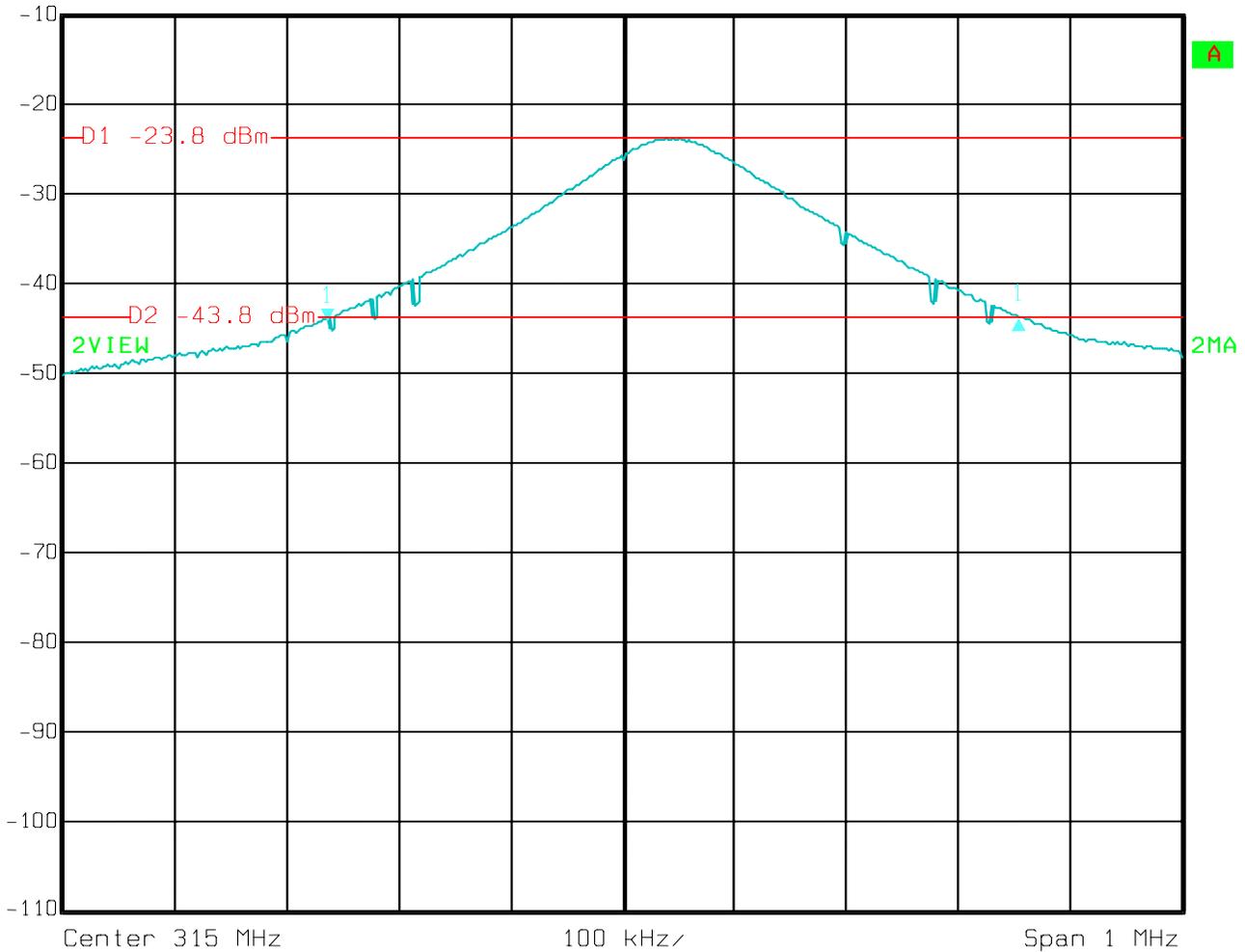
EXHIBIT 5.4

OCCUPIED BANDWIDTH

RBW = 100 KHz
VBW = 300KHz
OBW = 617 KHz



Delta 1 [T2] RBW 100 kHz RF Att 20 dB
 Ref Lvl 0.21 dB VBW 300 kHz
 -10 dBm 617.23446894 kHz SWT 25 ms Unit dBm



Date: 29.FEB.2008 16:08:50

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	TITLE: RF Checklist - Transmitter
	DRAWING NUMBER ES765T

Section 15.231 and ANSI C63.4
This is a list of all test equipment used.

Test Equipment list for Honeywell OATS:

Equipment	Mfg	Model	Cal Date	Cal Due
Spectrum Analyzer	TEKTRONIX	2784	10/16/07	10/16/08
Antenna ('Biconilog')	ETS Lindgren	3149	05/10/07	05/10/08

If you need any additional information from Honeywell please contact:

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Section 15.255(b), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. The exact method of calculating the average field strength shall be submitted with any application for certification.

5819AP Duty Cycle Calculation

Message protocol, timing and duty cycle calculation:

The data output is phase-encoded Manchester that has inherent 50% duty cycle and consists of 64 bits per word sent at a nominal data rate of 3.7 kb/s (3.2kb/s min to 4.2kb/s max).

Therefore the duty cycle is calculation is as follows:

The word format consists of 64 bits,

The duration of each bit is 312.5 uSec max.

The duty cycle over a 100 mSec measuring period is calculated as follows:

Duty cycle = Actual RF transmission ON time / 100 mSec

Actual transmission ON time = 64 bits X 50% X 312.5 uSec = 10 mSec

Therefore duty cycle = 10 / 100 mSec = .10 = 10%,

and peak to average field strength is 20 db.

Total on-air time for a supervision transmission is:

$64 \times 312.5 \text{ uSec} + (5 \times 150 \text{ mSec}) = 0.77 \text{ seconds}$

The group of five transmissions is repeated twice, with the second group delayed from the first by a max time of 2 seconds.

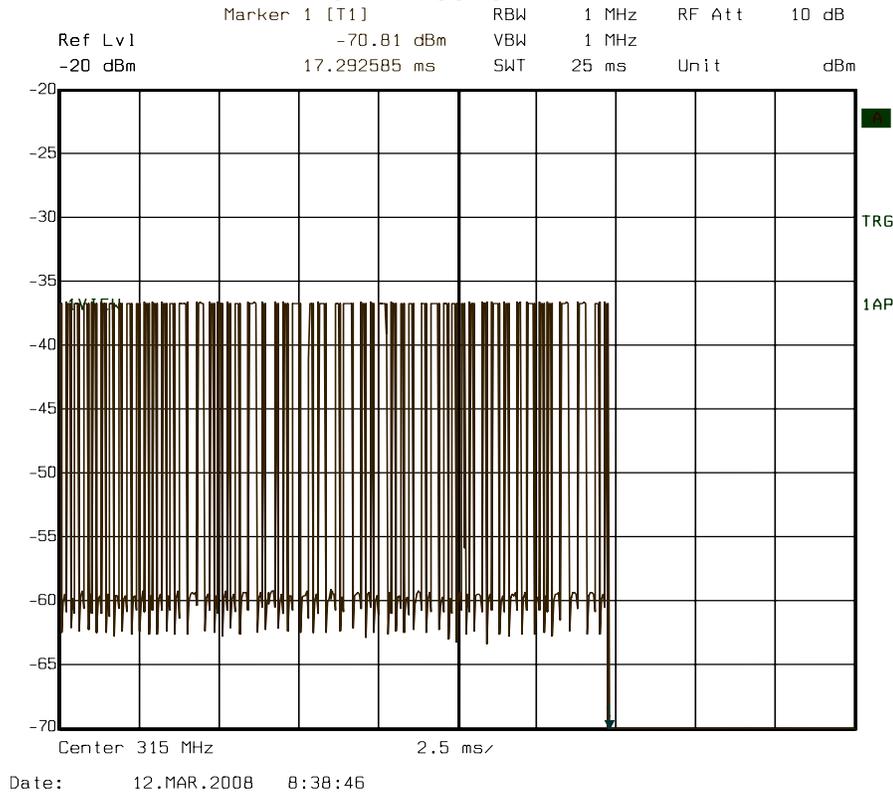
The worst case on-air time is $1.54 + 2 = 3.54 \text{ seconds}$

Summary: - Duty cycle = 10%

On airtime = 3.54 seconds

Section 15.255(b) Section 15.255(b), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. The exact method of calculating the average field strength shall be submitted with any application for certification. Section 15.231(a)(2) 5 second rule.

ONE MESSAGE:



GROUP OF FIVE MESSAGES:

