

EXHIBIT 1

FUNCTIONAL DESCRIPTION  
SECTION 2.1033(b)

CFS8DL5819AP / 573F-5819AP

SECTION 2.1033(b) (2a). For Part 15 a brief description of the circuit functions of the device.

The 5819AP is a wireless shock processor and transmitter. It processes mechanical shock events from inertia sensors (such as a door kick-in) and sends a standard 5800 type message to the panel via a 5881AP receiver.

SECTION 2.1033(b) (2a). For Part 15 a statement describing how the device operates.

The 5819AP shock event alarm transmitter consists of a message encoding chip (U1) , a SAW - stabilized Colpits oscillator (Q2) , and PA stage (Q3). The message encoding chip is responsible for:

1. generating the alarm message
2. generating the tamper and supervision messages.
3. performing all watchdog functions.

When sending a message, the message encoder chip turns on the SAW oscillator (Q2) using Q1 to Apply VCC. SAW device XL1 sets the frequency, of the oscillator (Q2) to 315 MHz. The encoder chip then uses transistors Q4 - Q5 to key the PA (Q3). This is on / off AM modulation (FCC Type 100KK1 modulation ) a Tank circuit and coupling caps, suppress harmonics, tune the antenna to resonance.

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:

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

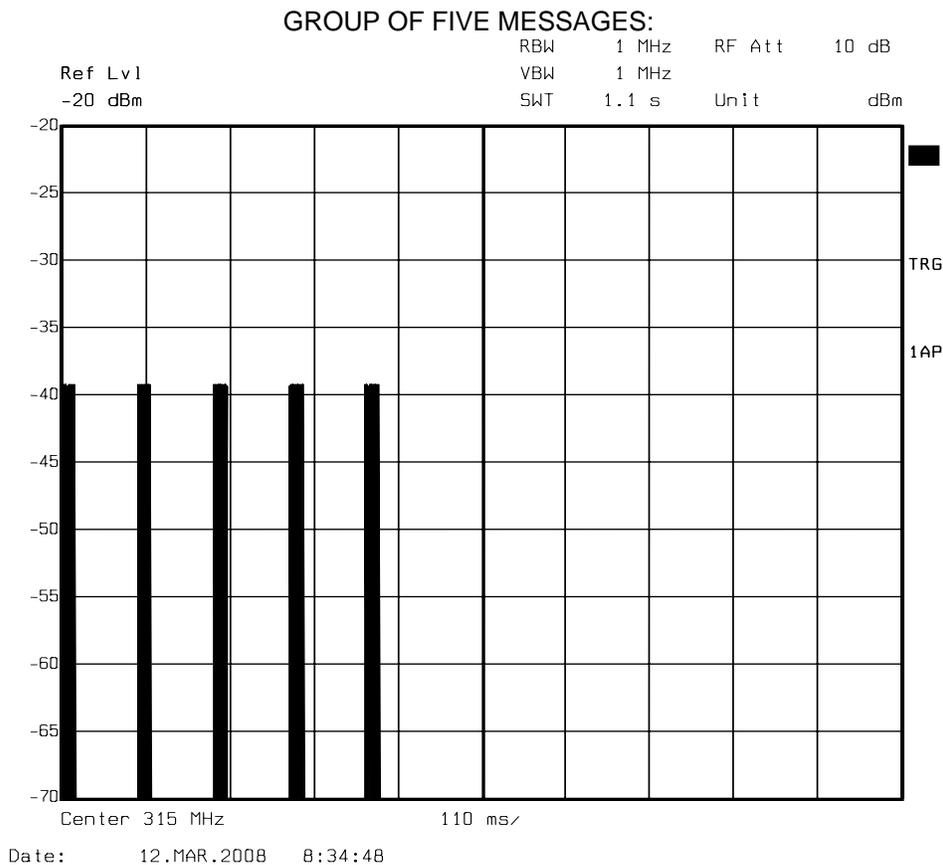
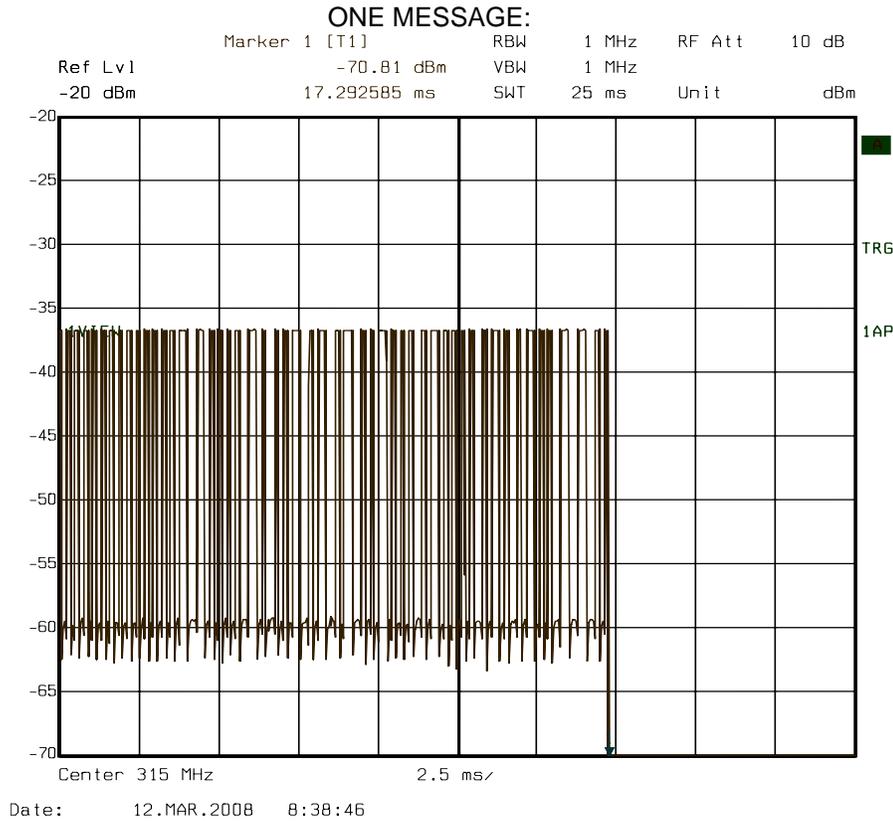
The group of five transmissions is repeated twice, with the second group delayed from the first by a max time of 2 seconds.

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

Summary: - Duty cycle = 10%

On airtime = 3.54 seconds

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## Report of Measurements

Measurements for the Intentional Radiator, and OBW were made in accordance with the procedures and reporting requirements at:

Honeywell's OATS ( FCC No: 152762 & IC No:573F-1 )  
which is located at:  
2 Corporate Center Drive, Melville, NY 11747.

Measurements were made in accordance with the procedure and reporting requirements of ANSI C63.4-2003.

The Test Set-Up (C63.4 section 10.1.3) is shown in EXHIBIT 5-2; "Test Setup Photos". The sequence of testing (C63.4 section 10.1.7) for radiated emissions is as follows: A preliminary scan was conducted with the receiver antenna close to the EUT in order to identify the emission characteristics of the EUT (C63.4 section 8.3.1.1). The antenna and EUT were then placed at the proper separation with the EUT positioned on a non-conducting turntable. The EUT was rotated on the turntable to maximize the received signal strength, then the receiver antenna height was varied to further maximize the received reading. Thereafter, the device was again rotated to a peak output position and the antenna height was re-adjusted for maximum received signal. This procedure was re-iterated until there was no further increase in signal level. This procedure was performed with the EUT rotating in three orthogonal planes (C63.4 section 13.1.4.1) to generate a final maximum reading which is recorded on the radiated emissions result sheet. Similar measurements were made on the receiver to ensure compliance as an unintentional radiator.

See "Exhibit 6" for list of test equipment (C63.4 section 10.1.4)

Note, The Spectrum Analyzer resolution bandwidths set as follows;  
(Video Bandwidth is always set 3X greater than RBW)

For occupied bandwidth measurements, RBW = 100kHz,  
(This is in accordance with the minimum RBW allowed by C63.4, which requires RBW greater than 5% of the FCC required occupied bandwidth spec of 0.25% of center frequency).

For radiated emissions below 1 GHz, the RBW = 100kHz.  
Detector function set to peak.

For radiated emissions above 1 GHz, the RBW = 1MHz.  
Detector function set to peak.

**RADIATED EMISSIONS** are recorded in "EXHIBIT 5-3"

**OCCUPIED BANDWIDTH** is recorded in "EXHIBIT 5-4".