

# RF EXPOSURE REPORT

**Report Number:** 14144434-E2V1

**Applicant :** COGNYTE SOFTWARE LP  
35 PINELAWN ROAD, SUITE 204  
MELVILLE, NEW YORK 11747 USA

**Model :** FALCONET

**FCC ID :** 2A7A2 - FNV1

**EUT Description :** PORTABLE MULTI-BTS SDR SYSTEM

**Test Standard(s) :** FCC Part 1 Subpart I  
FCC Part 2 Subpart J

**Date Of Issue:**  
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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** COGNYTE SOFTWARE LP  
35 PINELAWN ROAD, SUITE 204  
MELVILLE, NEW YORK 11747 USA

**EUT DESCRIPTION:** PORTABLE MULTI-BTS SDR SYSTEM

**MODEL:** FALCONET

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 1 SUBPART I & PART 2 SUBPART J	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

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## **2. TEST METHODOLOGY**

All calculations were made in accordance with FCC OET Bulletin 65 Edition 97-01.

## **3. REFERENCES**

All measurements were made as documented in test reports UL Verification Services. Documents 14144434-E1.

Output power, Duty cycle and Antenna gain data is excerpted from the applicable test reports.

## **4. FACILITIES AND ACCREDITATION**

The test sites and measurement facilities used to collect data are located at 47173 and 47658 Kato Road, Fremont, California, USA.

UL Verification Services Inc. is accredited by A2LA, Certificate Number #0751.05, for all testing performed within the scope of this report.

## 5. MAXIMUM PERMISSIBLE RF EXPOSURE

### 5.1. FCC RULES

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

**TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz

\* = Plane-wave equivalent power density

**Notes:**

- (1) Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.
- (2) General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

## 5.2. EQUATIONS

### POWER DENSITY

Power density is given by:

$$S = \text{EIRP} / (4 * \text{Pi} * \text{D}^2)$$

Where

S = Power density in mW/cm<sup>2</sup>  
EIRP = Equivalent Isotropic Radiated Power in mW  
D = Separation distance in cm

Power density in units of mW/cm<sup>2</sup> is converted to units of W/m<sup>2</sup> by multiplying by 10.

### DISTANCE

Distance is given by:

$$D = \text{SQRT} (\text{EIRP} / (4 * \text{Pi} * S))$$

Where

D = Separation distance in cm  
EIRP = Equivalent Isotropic Radiated Power in mW  
S = Power density in mW/cm<sup>2</sup>

### SOURCE-BASED DUTY CYCLE

Where applicable (for example, multi-slot cell phone applications) a duty cycle factor may be applied.

$$\text{Source-based time-averaged EIRP} = (\text{DC} / 100) * \text{EIRP}$$

Where

DC = Duty Cycle in %, as applicable  
EIRP = Equivalent Isotropic Radiated Power in W

**MIMO AND COLOCATED TRANSMITTERS (IDENTICAL LIMIT FOR ALL TRANSMITTERS)**

For multiple chain devices, and colocated transmitters operating simultaneously in frequency bands where the limit is identical, the total power density is calculated using the total EIRP obtained by summing the EIRP (in linear units) of each transmitter.

$$\text{Total EIRP} = (\text{EIRP1}) + (\text{EIRP2}) + \dots + (\text{EIRPn})$$

where

$$\text{EIRPx} = \text{Source-based time-averaged EIRP of chain x or transmitter x}$$

The total EIRP is then used to calculate the Power Density or the Distance as applicable.

**MIMO AND COLOCATED TRANSMITTERS**

For multiple colocated transmitters operating simultaneously in frequency bands where different limits apply:

The Power Density at the specified separation distance is calculated for each transmitter chain or transmitter.

The fraction of the exposure limit is calculated for each chain or transmitter as (Power Density of chain or transmitter) / (Limit applicable to that chain or transmitter).

The fractions are summed.

Compliance is established if the sum of the fractions is less than or equal to one.



## 6. RF EXPOSURE RESULTS

In the table(s) below, Power and Gain are entered in units of dBm and dBi respectively and conversions to linear forms are used for the calculations.

Single Chain and non-colocated transmitters								
Band	Mode	FCC Limit (mW/cm <sup>2</sup> )	Output AVG Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Duty Cycle (%)	EIRP (mW)	Separ. Distance FCC (cm)
850 MHz	GSM	0.57	38.21	2.50	40.71	100.0	11776.06	40.56
1900 MHz	GSM	1.00	36.58	4.00	40.58	100.0	11428.78	30.17
850 MHz	WCDMA	0.57	34.20	2.50	36.70	100.0	4677.35	25.56
2100 MHz	WCDMA	1.00	38.90	3.00	41.90	100.0	15488.17	35.12
1900 MHz	WCDMA	1.00	35.89	4.00	39.89	100.0	9749.90	27.86
LTE 2	QPSK	1.00	27.40	4.00	31.40	100.0	1380.38	10.48
LTE 4	QPSK	1.00	30.17	3.00	33.17	100.0	2074.91	12.85
LTE 5	QPSK	0.57	30.66	2.50	33.16	100.0	2070.14	17.00
LTE 12	QPSK	0.47	32.82	2.50	35.32	100.0	3404.08	24.01
LTE 13	QPSK	0.47	32.81	2.50	35.31	100.0	3396.25	23.99
LTE 14	QPSK	0.47	28.00	2.50	30.50	100.0	1122.02	13.79
LTE 17	QPSK	0.47	31.78	2.50	34.28	100.0	2679.17	21.30
LTE 25	QPSK	1.00	27.44	4.00	31.44	100.0	1393.16	10.53
LTE 26	QPSK	0.57	32.67	2.50	35.17	100.0	3288.52	21.43
LTE 66	QPSK	1.00	24.79	3.00	27.79	100.0	601.17	6.92
LTE 71	QPSK	0.40	31.81	3.00	34.81	100.0	3026.91	24.55
LTE n71	QPSK	0.40	28.30	3.00	31.30	100.0	1348.96	16.39

### Notes:

- 1) The manufacturer configures output power so that the maximum power, after accounting for manufacturing tolerances, will never exceed the maximum power level measured.
- 2) The output power in the tables above is the maximum power per chain among various channels and various modes within the specific band.
- 3) The antenna gain in the tables above is the maximum antenna gain among various channels within the specified band.

**END OF REPORT**