

RF EXPOSURE EVALUATION REPORT

FCC ID : XV2SC415C61
Equipment : SC415 Universal Tank Monitor
Brand Name : Anova
Model Name : SC415C6-E2
Applicant : Silicon Controls Pty Ltd
Suite 1, 33 Waterloo Road; Macquarie
Park NSW 2113 AUSTRALIA
Manufacturer : Silicon Controls Pty Ltd
Suite 1, 33 Waterloo Road; Macquarie
Park NSW 2113 AUSTRALIA
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full



Approved by: Cona Huang / Deputy Manager



SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

1. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)	4
2. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS	5
3. RF EXPOSURE LIMIT INTRODUCTION	6
4. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION	7
4.1. Standalone Power Density Calculation	7



History of this test report

Report No.	Version	Description	Issued Date
FA1118007	Rev. 01	Initial issue of report	Jul. 01, 2021

**1. Description of Equipment Under Test (EUT)**

Product Feature & Specification	
EUT Type	SC415 Universal Tank Monitor
Brand Name	Anova
Model Name	SC415C6-E2
FCC ID	XV2SC415C61
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz LTE Band 85: 698 MHz ~ 716 MHz
Mode	GSM/GPRS/EGPRS LTE: QPSK, 16QAM
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Reviewed by: Jason Wang

Report Producer: Paula Chen

2. Maximum RF average output power among production units

Mode	Burst average power(dBm)	
	GSM 850	GSM 1900
GPRS (GMSK, 1 Tx slot)	34	31
GPRS (GMSK, 2 Tx slots)	34	31
GPRS (GMSK, 3 Tx slots)	31	31
GPRS (GMSK, 4 Tx slots)	29	30
EDGE (8PSK, 1 Tx slot)	28.5	27.5
EDGE (8PSK, 2 Tx slots)	28.5	27.5
EDGE (8PSK, 3 Tx slots)	28	27
EDGE (8PSK, 4 Tx slots)	27	26

Mode		Maximum Average power(dBm)
LTE	Band 2	25
	Band 4	25
	Band 5	25
	Band 12	25
	Band 13	25
	Band 25	25
	Band 26	25
	Band 66	25
	Band 71	22
	Band 85	25



3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, 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 §1.1310.

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

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
GPRS 850 (1 Tx slot)	0.50	34.00	34.5	2.82	354.81	0.071	0.549
GPRS 850 (2 Tx slots)	0.50	34.00	34.5	2.82	704.60	0.140	0.549
GPRS 850 (3 Tx slots)	0.50	31.00	31.5	1.41	529.66	0.105	0.549
GPRS 850 (4 Tx slots)	0.50	29.00	29.5	0.89	446.68	0.089	0.549
EGPRS 850 (1 Tx slot)	0.50	28.50	29.0	0.79	100.00	0.020	0.549
EGPRS 850 (2 Tx slots)	0.50	28.50	29.0	0.79	198.58	0.040	0.549
EGPRS 850 (3 Tx slots)	0.50	28.00	28.5	0.71	265.48	0.053	0.549
EGPRS 850 (4 Tx slots)	0.50	27.00	27.5	0.56	281.17	0.056	0.549
GPRS 1900 (1 Tx slot)	1.40	31.00	32.4	1.74	218.78	0.044	1.000
GPRS 1900 (2 Tx slots)	1.40	31.00	32.4	1.74	434.45	0.086	1.000
GPRS 1900 (3 Tx slots)	1.40	31.00	32.4	1.74	651.63	0.130	1.000
GPRS 1900 (4 Tx slots)	1.40	30.00	31.4	1.38	691.83	0.138	1.000
EGPRS 1900 (1 Tx slot)	1.40	27.50	28.9	0.78	97.72	0.019	1.000
EGPRS 1900 (2 Tx slots)	1.40	27.50	28.9	0.78	194.06	0.039	1.000
EGPRS 1900 (3 Tx slots)	1.40	27.00	28.4	0.69	259.44	0.052	1.000
EGPRS 1900 (4 Tx slots)	1.40	26.00	27.4	0.55	274.77	0.055	1.000
LTE Band 2	1.40	25.00	26.4	0.44	436.52	0.087	1.000
LTE Band 4	1.60	25.00	26.6	0.46	457.09	0.091	1.000
LTE Band 5	0.50	25.00	25.5	0.35	354.81	0.071	0.549
LTE Band 12	-1.30	25.00	23.7	0.23	234.42	0.047	0.466
LTE Band 13	-0.30	25.00	24.7	0.30	295.12	0.059	0.518
LTE Band 25	1.40	25.00	26.4	0.44	436.52	0.087	1.000
LTE Band 26	0.50	25.00	25.5	0.35	354.81	0.071	0.543
LTE Band 66	1.60	25.00	26.6	0.46	457.09	0.091	1.000
LTE Band 71	-0.90	22.00	21.1	0.13	128.82	0.026	0.442
LTE Band 85	-1.20	25.00	23.8	0.24	239.88	0.048	0.465

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.