

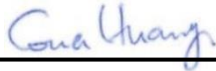
RF EXPOSURE EVALUATION REPORT

FCC ID : NKRD54A4
Equipment : Cellular Backup Bridge
Brand Name : ADT
Model Name : S30B1R0-01
Applicant : Wistron NeWeb Corp.
20 Park Avenue II, Hsinchu
Science Park, Hsinchu 308, Taiwan
Manufacturer : Wistron NeWeb Corp.
20 Park Avenue II, Hsinchu
Science Park, Hsinchu 308, Taiwan
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 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



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1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Cellular Backup Bridge
Brand Name	ADT
Model Name	S30B1R0-01
FCC ID	NKRD54A4
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band V: 824 MHz ~ 849 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 WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz
Mode	RMC12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM WLAN: 802.11a/b/g/n HT20/HT40
HW Version	D54A4-v1.0
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

<WWAN>

	Mode	Maximum Average power(dBm)
WCDMA	Band II	25.0
	Band V	25.0
LTE	Band 2	24.0
	Band 4	23.0
	Band 5	24.0
	Band 12	24.5

<WLAN>

	Mode	Maximum Average power(dBm)
2.4GHz WLAN	802.11b	16.00
	802.11g	15.00
	802.11n HT20	15.00
	802.11n HT40	15.00



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)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band 2	3.43	25.00	28.4	696.63	0.139	1.000	0.139
WCDMA Band 5	0.15	25.00	25.2	327.34	0.065	0.536	0.122
LTE Band 2	3.43	24.00	27.4	553.35	0.110	1.000	0.110
LTE Band 4	4.18	23.00	27.2	522.40	0.104	1.000	0.104
LTE Band 5	0.15	24.00	24.2	260.02	0.052	0.549	0.094
LTE Band 12	1.75	24.50	26.3	421.70	0.084	0.466	0.180
WLAN2.4GHz	2.63	16.0	18.6	72.95	0.015	1.000	0.015

4.2. Collocated Power Density Calculation

WWAN Power Density / Limit	WLAN Power Density / Limit	Σ (Power Density / Limit) of WWAN+WLAN
0.180	0.015	0.195

Note:

- 1. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN.
- 2. Considering the WWAN module collocation with the WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant.

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.