RF EXPOSURE EVALUATION

Applicant	SOLUM CO.,LTD.
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FCC ID	2AFWN-EL315TRB6S
Certification Number ISED	22800-EL315TRB6S
Product Description	ESL Label
Basic model (HVIN)	EL315TRB6S

Standard Requirement [FCC]

The following FCC Rule Parts and procedures are applicable :
Part 1.1310 Radiofrequency radiation exposure limits

Table 1 below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields.

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^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			**1.0**	30

f = frequency in MHz
** = Plane-wave equivalent power density*

Standard Requirement [ISED]

RSS-102(Issue 6) 6.6 Field reference level exposure exemption limits – RF Exposure Evaluation

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.

MPE calculation

$S = EIRP / (4\pi R^2)$

Where S : Power density (mW/cm^2 or or W/m^2)
EIRP : P + T + G (dBm)
P : Maximum transmitter power (dBm)
G : Antenna gain (dBi)
R : distance to the centre of radiation of the antenna
T : Power tolerance (dB)

Safety distance(R) : 20 cm or 0.2 m

[FCC]

Mode	Frequency [MHz]	Conducted Output power [dBm]	Antenna Gain [dBi]	Power tolerance [dB]	Power density [mW/cm^2]	Limit [mW/cm^2]
SRD 2.4 GHz	2 401	2.88	2.50	1.5	0.001	1
WLAN 2.4 GHz	2 472	17.74	3.59	1.5	0.038	1
WLAN 5 GHz	5 200	11.43	2.94	1.5	0.008	1

[ISED]

Mode	Frequency [MHz]	Conducted Output power [dBm]	Antenna Gain [dBi]	Power tolerance [dB]	Power density [W/m^2]	Limit [W/m^2]
SRD 2.4 GHz	2 401	2.88	2.50	1.5	0.01	2.68
WLAN 2.4 GHz	2 472	17.74	3.59	1.5	0.38	2.73
WLAN 5 GHz	5 200	11.43	2.94	1.5	0.08	4.54

Note : The measured maximum output power EIRP.

Conclusion

This confirms compliance to the required Radio frequency radiation exposure limit.

Simultaneous transmitter

Mode	MPE ratios	Limit
SRD 2.4 GHz	0.001	-
WLAN 5 GHz	0.009	
Combined	**0.01**	1.0

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