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FCC Test Firm Registration	409640
IC Site Registration	IE0001
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EUT Description	RFID Module
FCC ID	SCCNUR31W6
IC ID	5137A-NUR31W6
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RF Exposure Exhibit– Technical Report

1.0 Overview

This report contains an RF exposure evaluation against test exclusion limits for FCC and IC.

1.1 Fixed / Mobile Application

MPE for bystanders which are considered to be ≥ 20 cm away from the front of the transmit antenna

Note

Rated output power is 30dBm conducted

Max antenna gain is 6dBi

2.0 Maximum Permissible Exposure FCC

47 CFR Sections 1.1307, 1.1310, 2.1091,
447498 D01 General RF Exposure Guidance v06

2.1 Antenna gain of 6dBi General population /Un-controlled Environments (FCC)

where:

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

S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Conducted Output Power	30	dBm
Antenna Gain	6	dBi
Time Averaging Factor	0	dB
EIRP Peak	36	dBm
EIRP Peak	3981	mW
Prediction distance:	22.8	cm
Prediction frequency:	915	MHz
MPE limit for Uncontrolled/General Population exposure at prediction frequency:	0.610	mW/cm ²
Power density at prediction frequency:	0.609	mW/cm ²
Power density at prediction frequency:	6.094	W/m ²
Test Result	Pass	
Exempt from RF Exposure evaluation		

Notes

The table above shows that for a prediction distance of 22.8cm, RF exposure evaluation is not required.

At a prediction distance of 20cm the power density is 0.792 mW/cm², which is above the RF exposure evaluation limit (FCC)

2.2 Antenna gain of 6dBi Occupational /Controlled Environments (FCC)

where:

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

S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Conducted Output Power	30	dBm
Antenna Gain	6	dBi
Time Averaging Factor	0	dB
EIRP Peak	36	dBm
EIRP Peak	3981	mW
Prediction distance:	20	cm
Prediction frequency:	915	MHz
MPE limit for Controlled/Occupational exposure at prediction frequency:	3.050	mW/cm ²
Power density at prediction frequency:	0.792	mW/cm ²
Power density at prediction frequency:	7.920	W/m ²
Test Result	Pass	
Exempt from RF Exposure evaluation		

Notes

The table above shows that for a prediction distance of 20cm, RF exposure evaluation is not required.

3.0 Maximum Permissible Exposure IC
Limits for Routine Evaluation — RF Exposure Evaluation

3.1 Limits /guidelines
Limits for Routine Evaluation — RF Exposure Evaluation
Limits as per RSS 102 Issue 5 Section 2.5.2

3.2 Antenna gain of 6dBi General population /Un-controlled Environments (IC)

where:

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

S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Conducted Output Power	30	dBm
Antenna Gain	6	dBi
EIRP Peak	36	dBm
Time Averaging Factor	0.00	dB
Tune up factor	0	dB
EIRP Peak	36.000	dBm
EIRP Peak	3.98	W
Prediction distance:	33.9	cm
Prediction frequency:	915	MHz
Power density at prediction frequency:	2.76	W/m ²
Power Density Limit for Uncontrolled/General Population exposure at prediction frequency:	2.77	W/m ²
Exempt from RF Exposure Evaluation		

Notes

The table above shows that for a prediction distance of 33.9cm, RF exposure evaluation is not required.
At a prediction distance of 20cm the power density is 7.92 W/m², which is above the RF exposure evaluation limit (IC)

3.3 Antenna gain of 6dBi Occupational /Controlled Environments (IC)

where:

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

S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Conducted Output Power	30	dBm
Antenna Gain	6	dBi
EIRP Peak	36	dBm
Time Averaging Factor	0.00	dB
Tune up factor	0	dB
EIRP Peak	36.00	dBm
EIRP Peak	3.98	W
Prediction distance:	20	cm
Prediction frequency:	915	MHz
Power density at prediction frequency:	7.92	W/m ²
Power Density limit for Controlled/Occupational exposure at prediction frequency:	19.53	W/m ²
<u>Exempt from RF Exposure Evaluation</u>		

Notes

The table above shows that for a prediction distance of 20cm, RF exposure evaluation is not required.

End of Report