

RF EXPOSURE EVALUATION REPORT

FCC ID : RI7FN990A40
Equipment : 5G NR Module
Brand Name : 
Model Name : FN990A40
Marketing Name : FN990A40
Applicant : Telit Communications S.p.A.
Via Stazione Di Prosecco 5/B, Trieste 34010, Italy
Manufacturer : Telit Communications S.p.A.
Via Stazione Di Prosecco 5/B, Trieste 34010, Italy
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.

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Approved by: Cona Huang / Deputy Manager



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History of this test report

Report No.	Version	Description	Issued Date
FA270608-39	Rev. 01	Initial issue of report	Jul. 03, 2025

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	5G NR Module
Brand Name	
Model Name	FN990A40
Marketing Name	FN990A40
FCC ID	RI7FN990A40
Wireless Technology and Frequency Range	LTE Band 106: 897.5 MHz ~ 900.5 MHz
Mode	LTE: QPSK, 16QAM, 64QAM, 256QAM
HW	1.00
SW	M0R.110006

Reviewed by: Jason Wang

Report Producer: Daisy Peng

2. 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

3. Radio Frequency Radiation Exposure Evaluation

3.1. Standalone Power Density Calculation

<LTE>

Band	Frequency (MHz)	Max Conducted output power (per Tune-up) (dBm)	Duty Cycle (%)	AVG Power with Duty Cycle (dBm)	Distance (m)	FCC MPE Limit (mW/cm ²)	FCC MPE Result / FCC MPE Limit Ratio	FCC EIRP/ERP limit (W)	ERP limit (dBm)	Ant Gain to meet FCC MPE limit (dBi)	Ant Gain to meet FCC ERP/EIRP limit (dBi)	Max Gain to meet FCC ERP/EIRP and MPE limit (dBi)	Max gain allowed (dBi)
106	897.5	23.5	100	23.50	0.2	0.598	0.9818	3.00	34.8	11.2	11.2	11.2	11.2

3.2. Consider Ttransmit with WLAN/BT

<LTE>

Band	Frequency (MHz)	Max Conducted output power (per Tune-up) (dBm)	Duty Cycle (%)	AVG Power with Duty Cycle (dBm)	Distance (m)	FCC MPE Limit (mW/cm ²)	FCC/IC MPE Result / FCC/IC MPE Limit Ratio	FCC EIRP/ERP limit (W)	ERP limit (dBm)	Ant Gain to meet FCC MPE limit (dBi)	Ant Gain to meet FCC ERP/EIRP limit (dBi)	Max Gain to meet FCC ERP/EIRP and MPE limit (dBi)	Consider Sim-Tx (Gain)	Max gain allowed (dBi)
106	897.5	23.5	100	23.50	0.2	0.598	0.7798	3.00	34.8	11.2	11.2	11.2	10.2	10.2

<WLAN/BT>

Band	Frequency (MHz)	Max EIRP (dBm)	Duty Cycle (%)	AVG EIRP with Duty Cycle (dBm)	Distance (m)	FCC MPE Limit (mW/cm ²)	FCC/IC MPE Result / FCC/IC MPE Limit Ratio
2.4GHz WLAN	2402	24.0	100	24.00	0.2	1.000	0.050
5GHz WLAN	5150	24.0	100	24.00	0.2	1.000	0.050
Bluetooth	2402	15.0	100	15.00	0.2	1.000	0.006

General Note:

1. This MPE analysis is applicable to any collocated transmitters with transmit power for WLAN EIRP is estimated 24dBm and for Bluetooth EIRP is estimated 15dBm.

<EN-DC Simtaneous Transmission analysis with WLAN/BT>

LTE Power Density / Limit	WLAN Power Density / Limit	Bluetooth Power Density / Limit	Σ (Power Density / Limit) of LTE + WLAN + Bluetooth
0.7798	0.05	0.006	0.8358

General 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 LTE + WLAN + Bluetooth.
2. Considering the collocation with the four transmitters of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant.

Conclusion:

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