MPE/RF EXPOSURE EVALUATION REPORT

FCC CFR 47 Part 1.1310

Report No.: DIGI115-U12 Rev A

Company: Digi International

Model Name: ConnectCore 93

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To: FCC CFR 47 Part 1.1310

Test Report Serial No.: DIGI115-U12 Rev A

This report supersedes: NONE

Applicant: Digi International
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1. MAXIMUM PERMISSABLE EXPOSURE

Calculations for Maximum Permissible Exposure Levels

Power Density = Pd (mW/cm^2) = EIRP/(4*π*d^2)
EIRP = P * G
P = Peak output power (mW)
G = Antenna numeric gain (numeric)
d = Separation distance (cm)
Numeric Gain = 10 ^ (G (dBi)/10)
The calculations in the table below use the highest conducted power values together with the highest antenna gain specified for the EUT. These calculations represent worst case in terms of the exposure levels.

3rd party Reference report:

The Digi connect Core 93 contains a pre-certified Murata Manufacturing Co., Ltd radio module, model LBES5PL2EL, LBEE5PL2DL tested by SGS Taiwan Ltd.

The conducted output power for each band used in this evaluation were taken from SGS Taiwan Ltd report number TESA2307000421ES Dated 23rd August 2023. These calculations represent worst case in terms of the exposure levels.

Frequency Band (MHz)	Ant Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Power Density (mW/cm^2) @ 20cm	Power Density Limit (mW/cm^2)	Min Calculated safe distance for Limit (cm)
2400.0 - 2483.5 (BLE)	4.60	2.88	16.00	39.81	0.023	1.00	3.02
2400.0 - 2483.5 (BT)	4.60	2.88	16.00	39.81	0.023	1.00	3.02
2400.0 - 2483.5 (Wi-Fi)	4.60	2.88	20.00	100.00	0.057	1.00	4.79
5150.0 - 5250.0	5.50	3.55	18.00	63.10	0.045	1.00	4.22
5250.0 - 5350.0	5.50	3.55	18.00	63.10	0.045	1.00	4.22
5470.0 - 5725.0	5.50	3.55	18.00	63.10	0.045	1.00	4.22
5725.0 - 5850.0	5.50	3.55	18.00	63.10	0.045	1.00	4.22

Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

Specification - Maximum Permissible Exposure Limits

The Limit is defined in Table 1 of FCC §1.1310.

Table 1 to § 1.1310(e)(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)
(ii) 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

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