

MPE/RF EXPOSURE EVALUATION REPORT



Evaluation of: Digi International ConnectCore i.MX6UL

to

To: FCC CFR 47 Part 15 RF Exposure Requirements

Test Report Serial No.: DIGI79-U2 MPE Rev A

This report supersedes: NONE

Applicant: Digi International Inc.
11001 Bren Road East
Minnetonka, MN 55343
USA

Product Function: Embedded ARM Module.

Issue Date: 14th December 2018

This Test Report is Issued Under the Authority of:

MiCOM Labs, Inc.
575 Boulder Court
Pleasanton California 94566
USA
Phone: +1 (925) 462-0304
Fax: +1 (925) 462-0306
www.micomlabs.com



MiCOM Labs is an ISO 17025 Accredited Testing Laboratory



1. MAXIMUM PERMISSABLE EXPOSURE

Calculations for Maximum Permissible Exposure Levels

$$\text{Power Density} = P_d (\text{mW/cm}^2) = \text{EIRP} / (4 * \pi * d^2)$$

$$\text{EIRP} = P * G$$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

$$\text{Numeric Gain} = 10^{(G (\text{dBi})/10)}$$

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1 mW/cm²

These calculations represent worst case in terms of the exposure levels for the device operating in the 5000 MHz band.

Freq. Band (MHz)	Frequency of Calculation (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)
4900-5900	5240	5.5	3.55	11.4	13.80	0.010	1.0	1.97

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

FCC §1.1310 Limit = 1 mW/cm² from 1.310 Table 1 for devices operating in the 5000 MHz band



Title: Digi International ConnectCore i.MX6UL
To: FCC CFR 47 Part 1.1310
Serial #: DIGI79-U2 Rev A FCC MPE
Issue Date: 14th December 2018
Page: 3 of 4

Specification - Maximum Permissible Exposure Limits

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

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



575 Boulder Court
Pleasanton, California 94566, USA
Tel: +1 (925) 462 0304
Fax: +1 (925) 462 0306
www.micomlabs.com