



Product Name: Diagnostic Ultrasound System	Report No: FCC022022-1900MPE1
Product Model: Acclarix LX9, Acclarix LX9 Exp, Acclarix LX9 Super, Acclarix LX85, Acclarix LX88	Security Classification: Open
Version: V1.0	Total Page: 7

TIRT Testing Report

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FCC RF EXPOSURE REPORT

FCC ID: SMQ-LX9EDAN

Equipment : Diagnostic Ultrasound System
Trade Mark : 
Model Number : Acclarix LX9, Acclarix LX9 Exp, Acclarix LX9 Super, Acclarix LX85, Acclarix LX88 (They have the same circuit principle, appearance and performance, but they are different for different customer configurations. Since only the measurement configuration (software function) of Acclarix LX9 is different from other models, and it does not affect the wireless test, so, we choose the Acclarix LX9 as the DUT (device under test) to cover all the models.)
Product No. : 20220328004149
Applicant : Edan Instruments, Inc.
Address : #15 Jinhui Road, Jinsha Community, Kengzi Sub-District, Pingshan District, 518122 Shenzhen P.R.China
Manufacturer : Edan Instruments, Inc.
Address : #15 Jinhui Road, Jinsha Community, Kengzi Sub-District, Pingshan District, 518122 Shenzhen P.R.China
Date of Test : 2022.03.07-2022.03.31
Issued Date : 2022.04.01
Report Version : V1.0
Test Sample : Final Sample
Standard(s) : FCC 47 CFR Part 1.1310 & FCC 47 CFR Part 2.1091

- The above equipment has been tested and found compliance with the requirement of the relative standards by TIRT Inc.
- The test result referred exclusively to the presented test model /sample.
- Without written approval of TIRT Inc., the test report shall not be reproduced except in full.

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History of this test report

Original Report Issue Date: 2022.04.01

- ☒ No additional attachment
- ☐ Additional attachments were issued following record

Attachment No.	Issue Date	Description

1. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

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

where:

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

Table for Filed Antenna

For 2.4GWiFi

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PIFA	N/A	4.5
2	N/A	N/A	PIFA	N/A	4.5

Note:

- (1) Antenna Gain=4.5 dBi. For 2.4G, this EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain =GAnt.+10log(N)dBi, that is Directional gain=4.5+10log(2)dBi=7.51. So output power limit is 30-7.51+6=28.49, the power spectral density limit is 8-7.51+6=6.49.
- (2) Ant. 2 for 1TX was found to be the worst case and recorded.

For 5GWiFi

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PIFA	N/A	4.5
2	N/A	N/A	PIFA	N/A	4.5

Note:

- (1) Antenna Gain=4.5 dBi. For 5G, this EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain =GAnt.+10log(N)dBi, that is Directional gain=4.5+10log(2)dBi=7.51. So U-NII-1, U-NII-2A, U-NII-2C output power limit is 24-7.51+6=22.49; U-NII-3 output power limit is 30-7.51+6=28.49, the U-NII-1, U-NII-2A, U-NII-2C power spectral density limit is 11-6.01+6=9.49; U-NII-3 power spectral density limit is 30-7.51+6=28.49.
- (2) Ant. 2 for 1TX was found to be the worst case and recorded.

2. TEST RESULTS

Operating Mode		Freq.	Maximum conducted average output power	Max. positive tolerance according manufacturer	Antenna Gain	Calculated maximum EIRP		MPE Limit	MPE Value
		(MHz)	(dBm)		(dBi)	(dBm)	(mW)	(mW/cm ²)	
SISO_Ant 1	IEEE 802.11b	2412-2462	13.22	1	4.5	18.72	74.4732	1	0.0148
	IEEE 802.11g	2412-2462	22.60	1	4.5	28.10	645.6542	1	0.1284
	IEEE 802.11n-HT 20	2412-2462	21.71	1	4.5	27.21	526.0173	1	0.1046
		5180-5700	15.07	1	4.5	20.57	114.0250	1	0.0227
		5745-5825	12.66	1	4.5	18.16	65.4636	1	0.0130
	IEEE 802.11n-HT 40	2422-2452	17.29	1	4.5	22.79	190.1078	1	0.0378
		5190-5670	13.95	1	4.5	19.45	88.1049	1	0.0175
		5755-5795	11.95	1	4.5	17.45	55.5904	1	0.0111
	IEEE 802.11a	5180-5700	16.10	1	4.5	21.60	144.5440	1	0.0288
		5745-5825	13.57	1	4.5	19.07	80.7235	1	0.0161
	IEEE 802.11ac-V HT20	5180-5700	14.82	1	4.5	20.32	107.6465	1	0.0214
		5745-5825	12.59	1	4.5	18.09	64.4169	1	0.0128
	IEEE 802.11ac-V HT40	5190-5670	13.81	1	4.5	19.31	85.3100	1	0.0170
		5755-5795	11.77	1	4.5	17.27	53.3335	1	0.0106
	IEEE 802.11ac-V HT80	5210-5610	13.35	1	4.5	18.85	76.7361	1	0.0153
		5775	11.41	1	4.5	16.91	49.0908	1	0.0098

Operating Mode		Freq.	Maximum conducted average output power	Max. positive tolerance according manufacturer	Antenna Gain	Calculated maximum EIRP		MPE Limit	MPE Value
		(MHz)	(dBm)		(dBi)	(dBm)	(mW)	(mW/cm ²)	
SISO_Ant2	IEEE 802.11b	2412-2462	13.51	1	4.5	19.01	79.6159	1	0.0158
	IEEE 802.11g	2412-2462	22.60	1	4.5	28.10	645.6542	1	0.1284
	IEEE 802.11n-HT 20	2412-2462	21.36	1	4.5	26.86	485.2885	1	0.0965
		5180-5700	15.18	1	4.5	20.68	116.9499	1	0.0233
		5745-5825	13.74	1	4.5	19.24	83.9460	1	0.0167
	IEEE 802.11n-HT 40	2422-2452	16.44	1	4.5	21.94	156.3148	1	0.0311
		5190-5670	14.71	1	4.5	20.21	104.9542	1	0.0209
		5755-5795	11.28	1	4.5	16.78	47.6431	1	0.0095
	IEEE 802.11a	5180-5700	16.89	1	4.5	22.39	173.3804	1	0.0345
		5745-5825	15.14	1	4.5	20.64	115.8777	1	0.0231
	IEEE 802.11ac-V HT20	5180-5700	15.76	1	4.5	21.26	133.6596	1	0.0266
		5745-5825	13.35	1	4.5	18.85	76.7361	1	0.0153
	IEEE 802.11ac-V HT40	5190-5670	14.71	1	4.5	20.21	104.9542	1	0.0209
		5755-5795	11.46	1	4.5	16.96	49.6592	1	0.0099
	IEEE 802.11ac-V HT80	5210-5610	14.59	1	4.5	20.09	102.0939	1	0.0203
		5775	11.30	1	4.5	16.80	47.8630	1	0.0095

Note: The calculated distance is 20 cm.

Simultaneous Multi-band Transmission MPE Analysis:

No.	Configurations	Support/Not Support
1	2.4G_WLAN_MIMO	Support
2	5G_RLAN_MIMO	Support

No.	Configurations	Maximum MPE Value (mW/cm ²)			Limits (mW/cm ²)
		Ant 1	Ant 2	Transmit simultaneously	
1	2.4G_WLAN_MIMO	0.1046	0.0965	0.2011	1
2	5G_RLAN_MIMO	0.0214	0.0266	0.0480	1

Note 1: According to KDB 447498 D01 General RF Exposure Guidance v06, At the transmit simultaneously calculation method is as follows:

$$\text{Transmit simultaneously MPE} = \Sigma \text{ of MPE ratios}$$

$$\text{MPE ratios} = \text{Field strengths or power density} / \text{MPE limit at the test frequency}$$

Note 2: The 2.4G WLAN and 5G RLAN can not transmit at the same time.

(END OF REPORT)