

TEST REPORT

FCC MPE Test for SDR-ICS-43-6
Certification

APPLICANT
ADRF KOREA, Inc.

REPORT NO.
HCT-RF-2011-FC025-R2

DATE OF ISSUE
December 30, 2020

Tested by
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TEST REPORT FCC MPE Test for SDR-ICS-43-6	REPORT NO. HCT-RF-2011-FC025-R2
	DATE OF ISSUE December 30, 2020
	Additional Model -

Applicant **ADRF KOREA, Inc.**
5-5, Mojeon-Ri, Backsa-Myun, Icheon-Citi, Kyunggi-Do, Korea

Eut Type	REPEATER
Model Name	SDR-ICS-43-6
FCC ID	N52-SDR-ICS-43-6

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test results were applied only to the test methods required by the standard.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	November 23, 2020	Initial Release
1	December 22, 2020	Revised the results.
2	December 30, 2020	We corrected the antenna gain and recalculated.

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

* The report shall not be reproduced except in full(only partly) without approval of the laboratory.



RF Exposure Statement

1. LIMITS

According to § 1.1310 and § 2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
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

F = frequency in MHz

* = Plane-wave equivalent power density

2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

S = Power density

P = power input to 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

Results

- 600 MHz Service – LTE 20 MHz (Uplink)

Max Peak output Power at antenna input terminal	31.00	dBm
Max Peak output Power at antenna input terminal	1258.93	mW
Prediction distance	35.00	cm
Prediction frequency	673.00	MHz
Antenna Gain(typical)	1.10	dBi
Antenna Gain(numeric)	1.29	-
Power density at prediction frequency(S)	0.1054	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.4487	mW/cm ²

- 600 MHz Service – LTE 20 MHz (Downlink)

Max Peak output Power at antenna input terminal	44.00	dBm
Max Peak output Power at antenna input terminal	25118.86	mW
Prediction distance	180.00	cm
Prediction frequency	627.00	MHz
Antenna Gain(typical)	2.00	dBi
Antenna Gain(numeric)	1.58	-
Power density at prediction frequency(S)	0.0978	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.4180	mW/cm ²

- 600 MHz Service – 5G NR 20 MHz (Uplink)

Max Peak output Power at antenna input terminal	31.00	dBm
Max Peak output Power at antenna input terminal	1258.93	mW
Prediction distance	35.00	cm
Prediction frequency	673.00	MHz
Antenna Gain(typical)	1.10	dBi
Antenna Gain(numeric)	1.29	-
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Simultaneous band emission conditions

[Uplink]

Band		MPE Ratio (Power density / Limit)	Sum of MPE Ratio	
600 MHz Service	4G LTE 20 MHz	0.2348	0.4696	≤ 1
	5G NR 20 MHz	0.2348		

***Note**

1. The result of each band was applied to the worst value.
2. MPE ratios are calculated as

$$[(\text{Power density}_1 / \text{MPE Limit}) + [(\text{Power density}_2 / \text{MPE Limit}) + \dots] \leq 1$$

[Downlink]

Band		MPE Ratio (Power density / Limit)	Sum of MPE Ratio	
600 MHz Service	4G LTE 20 MHz	0.2339	0.4678	≤ 1
	5G NR 20 MHz	0.2339		

***Note**

1. The result of each band was applied to the worst value.
2. MPE ratios are calculated as

$$[(\text{Power density}_1 / \text{MPE Limit}) + [(\text{Power density}_2 / \text{MPE Limit}) + \dots] \leq 1$$