Autel Digital Power Co., Ltd.

MPE ASSESSMENT REPORT

REPORT TYPE:
FCC MPE Assessment Report

MODEL:
Maxi UW19L002, Maxi UW19C002
Maxi UW19LJ02, Maxi UW19CJ02
Maxi UW19LB02, Maxi UW19L0N2
Maxi UW19C0N2, Maxi UW19LJN2
Maxi UW19CJN2, Maxi UW19LBN2

REPORT NUMBER:
230800707SHA-002

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TEST REPORT

Report no.: 230800707SHA-002

Applicant:	Autel Digital Power Co., Ltd. Floors 1, 2, 3 and 6, Caihong Keji Building 36 Hi-tech North Six Road Songpingshan Community, Xili Sub-district Nanshan District, Shenzhen, Guangdong 518057, China
Manufacturer:	Autel Digital Power Co., Ltd. Floors 1, 2, 3 and 6, Caihong Keji Building 36 Hi-tech North Six Road Songpingshan Community, Xili Sub-district Nanshan District, Shenzhen, Guangdong 518057, China
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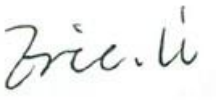
Factory2:	Autel Viet Nam New Energy Technology Company Limited Factory B&C, Lot IN3-11*B, VSIP Hai Phong Township, Industrial & Service Park, in Dinh Vu-Cat Hai Economic Zone, Lap Le Commune Thuy Nguyen District, Hai Phong City 04300, Vietnam
FCC ID:	2BHGJ-MAXCHG80A

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
KDB447498 D01 General RF Exposure Guidance v06 FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:	**REVIEWED BY:**
	
Project Engineer Scout Gong	Reviewer Eric Li

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Revision History

Report No.	Version	Description	Issued Date
230800707SHA-002	Rev. 01	Initial issue of report	July 17, 2024

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	EV Charger
Type/Model:	Maxi UW19L002, Maxi UW19C002, Maxi UW19LJ02, Maxi UW19CJ02, Maxi UW19LB02, Maxi UW19L0N2, Maxi UW19C0N2, Maxi UW19LJN2, Maxi UW19CJN2, Maxi UW19LBN2
Description of EUT:	The EUT covered in the report is an EV charger. RFID card reader is incorporated in model for process control. There are 10 models, the difference among all the models is listed in appendix II. Here is the certificate information of the wireless modules which EUT equipped. Model Maxi UW19L002 was tested as representative. For WIFI/Bluetooth module, FCC ID: XMR202102FC21 For Wi-sun module, FCC ID: 2BFLD-S9 For LTE module, FCC ID: XMR2023EG915QNA
Rating:	Input/Output Rating: 208/240V AC, 50/60Hz, 80A
EUT type:	☒ Tabletop ☐ Floor standing
Software Version:	/
Hardware Version:	/
Serial numbers:	A240702-30-001
Sample received date:	July 2, 2024
Date of test:	July 2, 2024 – July 5, 2024

1.2 Technical Specification

Frequency Range:	13.56 MHz ~ 13.56 MHz
Modulation:	ASK
Antenna:	PCB antenna

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road (North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Member No: 3598 (Registration No.: R-14243, G-10845, C-14723, T-12252)
	A2LA Accreditation Lab Certificate Number: 3309.02

2 MPE Assessment

Test result: **PASS**

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

According to§1.1310, the limit 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/f2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Note: Limit for 13.56MHz is 60.77 V/m

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

2.2 Assessment Results

Power density (S) is calculated according to the formula:
$S = PG / (4\pi R^2)$
Where S = power density in mW/cm^2
P = Radiated transmit power in mW
G = numeric gain of transmit antenna
R = distance (cm)

As we can see from the test report 230800707SHA-001: 65.00 dBuV/m at 3m
@20cm = @3m + 40 × log (3/0.2) = 112.04 dBuV/m = 0.40 V/m < 60.77 V/m

The power for WIFI/Bluetooth module refers to certificate of FCC ID: XMR202102FC21
The power for Wi-sun module refers to certificate of FCC ID: 2BFLD-S9
The power for LTE module refers to certificate of FCC ID: XMR2023EG915QNA

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent the worst case in terms of the exposure levels.

Wi-Fi 2.4G, Wi-Fi 5G, Bluetooth, LTE and Wi-sun can transmit simultaneously, here listed the maximum RF exposure according to the modules' certificated reports.

Module	Frequency Range	P		G		R	S	Limits
FCC Cert.	MHz	dBm	mW	dBi	Numeric	cm	mW/cm^2	mW/cm^2
XMR202102FC21	Wi-Fi 2.4G 802.11b	19.0	79.433	5.16	3.28	20.00	**0.052**	1.0000
	Wi-Fi 5G 802.11a	17.0	50.119	4.48	2.81	20.00	**0.032**	1.0000
	Bluetooth	15.0	31.623	3.00	2.00	20.00	**0.013**	1.0000
2BFLD-S9	902.2-927.8MHz	18.0	63.10	2.20	1.66	20.00	**0.020**	0.6000
XMR2023EG915QNA	LTE Band 2	25.0	316.22	1.43	1.39	20.00	0.0874	1.0000
	LTE Band 4	25.0	316.22	1.54	1.43	20.00	0.0897	1.0000
	LTE Band 5	25.0	316.22	2.21	1.66	20.00	**0.1046**	0.5498
	LTE Band 12	25.0	316.22	2.00	1.58	20.00	0.0997	0.4665
	LTE Band 13	25.0	316.22	2.10	1.62	20.00	0.1020	0.5197
	LTE Band 66	25.0	316.22	1.68	1.47	20.00	0.0926	1.0000

Note: 1 mW/cm^2 from 1.310 Table 1.

RFID, Wi-Fi 2.4G, Wi-Fi 5G, Bluetooth, LTE and Wi-can transmit simultaneously, so the maximum rate of MPE is:

0.40/60.77 + 0.052/1 + 0.032/1 + 0.013/1 + 0.02/1 + 0.1046/0.5498 = 0.314 < 1.000

Therefore, the MPE requirement is deemed to be satisfied without test.

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Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.

Appendix II: Model Difference

Model	Maxi UW19L002	Maxi UW19C002	Maxi UW19LJ02	Maxi UW19CJ02	Maxi UW19LB02
Input/Output rating	208/240V AC 50/60Hz, 80A	208/240V AC 50/60Hz, 80A	208/240V AC 50/60Hz, 80A	208/240V AC 50/60Hz, 80A	208/240V AC 50/60Hz, 80A
With or without LCD	With	With	Without	Without	Without
Connector Type	J1772	J1772	J1772	J1772	J1772
Charging Cable Length	7.5m (25ft)	6m (18ft)	7.5m (25ft)	6m (18ft)	7.5m (25ft)
4G Function	Support	Support	Support	Support	Not Support
Model	Maxi UW19L0N2	Maxi UW19C0N2	Maxi UW19LJN2	Maxi UW19CJN2	Maxi UW19LBN2
Input/Output rating	208/240V AC 50/60Hz, 80A	208/240V AC 50/60Hz, 80A	208/240V AC 50/60Hz, 80A	208/240V AC 50/60Hz, 80A	208/240V AC 50/60Hz, 80A
With or without LCD	With	With	Without	Without	Without
Connector Type	NACS	NACS	NACS	NACS	NACS
Charging Cable Length	7.5m (25ft)	6m (18ft)	7.5m (25ft)	6m (18ft)	7.5m (25ft)
4G Function	Support	Support	Support	Support	Not Support

**********END**********