TEST REPORT

Report Number: R14607588-E3

Applicant	:	AMANTYA TECHNOLOGIES PRIVATE LIMITED 12TH FLOOR, TOWER B, UNITECH CYBER PARK, SECTOR 39 GURUGRAM, INDIA 122003
Model	:	5GTP202SSn2566
FCC ID	:	2BASDAMTBB20232
EUT Description	:	Dual Cell Low Capacity Sub6
Test Standard(s)	:	FCC CFR 47 Part 1, Part 2.

Date Of Issue:
2023-06-14

Prepared by:
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ACCREDITED
CERT #0751.06

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2023-06-01	Initial Issue	Noah Bennett
V2	2023-06-14	Revised the tables in section 6 to remove reference to single chain. Values used are the sums of the chains.	Brian Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: AMANTYA TECHNOLOGIES PRIVATE LIMITED
12TH FLOOR, TOWER B,
UNITECH CYBER PARK, SECTOR 39,
GURUGRAM, INDIA 122003

EUT DESCRIPTION: Dual Cell Low Capacity Sub6

MODEL: 5GTP202SSn2566

SERIAL NUMBER: 03SS-5GSS-XXXX

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 1 SUBPART I & PART 2 SUBPART J	Complies

UL LLC. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC. will constitute fraud and shall nullify the document.

Approved & Released For
UL LLC. By:

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Prepared By:

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2. TEST METHODOLOGY

All calculations were made in accordance with FCC Parts 1.1310, 2.1091, 2.1093, KDB 447498 D01 v06.

3. REFERENCES

This report contains data provided by the customer which can impact the validity of results. UL LLC. is only responsible for the validity of results after the integration of the data provided by the customer. The following is information from the client:

1. Antenna gain data
2. Manufacturing Tolerance.

Output power was retrieved from UL Report R14607588-E1.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☒	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A	US0067	2180C	825374

5. MAXIMUM PERMISSIBLE RF EXPOSURE

5.1. FCC RULES

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

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

Notes:

(1) Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

(2) General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

5.1. EQUATIONS

POWER DENSITY

Power density is given by:

S = EIRP / (4 * Pi * D^2)

Where

S = Power density in mW/cm^2
EIRP = Equivalent Isotropic Radiated Power in mW
D = Separation distance in cm

Power density in units of mW/cm^2 is converted to units of W/m^2 by multiplying by 10.

DISTANCE

Distance is given by:

D = SQRT (EIRP / (4 * Pi * S))

Where

D = Separation distance in cm
EIRP = Equivalent Isotropic Radiated Power in mW
S = Power density in mW/cm^2

SOURCE-BASED DUTY CYCLE

Where applicable (for example, multi-slot cell phone applications) a duty cycle factor may be applied.

Source-based time-averaged EIRP = (DC / 100) * EIRP

Where

DC = Duty Cycle in %, as applicable
EIRP = Equivalent Isotropic Radiated Power in mW

MIMO AND COLOCATED TRANSMITTERS (IDENTICAL LIMIT FOR ALL TRANSMITTERS)

For multiple chain devices, and colocated transmitters operating simultaneously in frequency bands where the limit is identical, the total power density is calculated using the total EIRP obtained by summing the EIRP (in linear units) of each transmitter.

Total EIRP = (EIRP1) + (EIRP2) + ... + (EIRPn)

where

EIRPx = Source-based time-averaged EIRP of chain x or transmitter x

The total EIRP is then used to calculate the Power Density or the Distance as applicable.

MIMO AND COLOCATED TRANSMITTERS (NON-IDENTICAL LIMIT FOR ALL TRANSMITTERS)

For multiple colocated transmitters operating simultaneously in frequency bands where different limits apply:

The Power Density at the specified separation distance is calculated for each transmitter chain or transmitter.

The fraction of the exposure limit is calculated for each chain or transmitter as
(Power Density of chain or transmitter) / (Limit applicable to that chain or transmitter).

The fractions are summed.

Compliance is established if the sum of the fractions is less than or equal to one.

6. RF EXPOSURE RESULTS

In the table(s) below, Power and Gain are entered in units of dBm and dBi respectively and conversions to linear forms are used for the calculations.

Non-colocated transmitters									
Band	**Mode**	**Separ. Distance (cm)**	**Output AVG Power (dBm)**	**Ant. Gain (dBi)**	**EIRP (dBm)**	**Duty Cycle (%)**	**EIRP (mW)**	**FCC PD (mW/cm^2)**	**FCC PD Limit (mW/cm^2)**
5G NR n2	QPSK	20.00	5.97	5.20	11.17	100.0	13.09	0.00	1.00
5G NR n5	QPSK	20.00	2.32	0.80	3.12	100.0	2.05	0.00	0.58
5G NR n66	QPSK	20.00	11.95	4.20	16.15	100.0	41.21	0.01	1.00

Non-colocated transmitters								
Band	**Mode**	**FCC Limit (mW/cm^2)**	**Output AVG Power (dBm)**	**Antenna Gain (dBi)**	**EIRP (dBm)**	**Duty Cycle (%)**	**EIRP (mW)**	**Separ. Distance FCC (cm)**
5G NR n2	QPSK	1.00	5.97	5.20	11.17	100.0	13.09	1.02
5G NR n5	QPSK	0.58	2.32	0.80	3.12	100.0	2.05	0.53
5G NR n66	QPSK	1.00	11.95	4.20	16.15	100.0	41.21	1.81

Notes:

1) The manufacturer configures output power so that the maximum power, after accounting for manufacturing tolerances, will never exceed the maximum power level measured. The above is the maximum output power measured +2dBm manufacturer declared tolerance.
2) The output power in the tables above is the maximum total power (chain 0 + chain 1) among various channels and various modes within the specific band.
3) The antenna gain in the tables above is the maximum antenna gain among various channels within the specified band.
4) 100% Duty Cycle was used as worst case.
5) For MPE, KDB 447498 requires the calculations to use the maximum rated power; that power should be declared by the manufacturer and should not be lower than the measured power. If the power has a tolerance, then we also need to check that the measured power is within the tolerance.

END OF REPORT