

RF EXPOSURE COMPLIANCE SUMMARY REPORT

FCC ID : 2ABZ2-EE149
Equipment : Smart Phone
Brand Name : ONEPLUS
Model Name : IN2019
Applicant : OnePlus Technology (Shenzhen) Co., Ltd
18C02, 18C03, 18C04 and 18C05, Shum Yip Terra
Building, Binhe Avenue North, Futian District,
Shenzhen

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Cona Huang

Approved by: Cona Huang / Deputy Manager

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History of this test report

1. Equipment Under Test (EUT) Information

1.1 General Information

Product Feature & Specification	
Equipment Name	Smart Phone
Brand Name	ONEPLUS
Model Name	IN2019
FCC ID	2ABZ2-EE149
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 30: 2307.5 MHz ~ 2312.5 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 48: 3552.5 MHz ~ 3697.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz LTE Band 71: 665.5 MHz ~ 695.5 MHz 5G NR n2 : 1852.5 MHz ~ 1907.5 MHz 5G NR n5 : 826.5 MHz ~ 846.5 MHz 5G NR n66 : 1712.5 MHz ~ 1777.5 MHz 5G NR n260: 37GHz~40GHz 5G NR n261: 27.5GHz~28.35GHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM, 64QAM 5GNR: DFT-s-OFDM/CP-OFDM, QPSK / 16QAM / 64QAM / 256QAM WLAN: 802.11a/b/g/n/ac/ax HT20 / HT40 / VHT20 / VHT40 / VHT80 / VHT160 / HE20 / HE40 / HE80 Bluetooth BR/EDR/LE NFC:ASK

Reviewed by: Jason Wang

Report Producer: Wan Liu

2. Strategy for Compliance Demonstration

The FCC RF exposure limit is defined based on time-averaged RF exposure. When running in a wireless device, Qualcomm Smart Transmit algorithm enables more elegant power control mechanisms for RF exposure management. It ensures at all times the wireless device is in compliance with the FCC limit of RF exposure time-averaged over a defined time window, denoted as T_{SAR} and T_{PD} for specific absorption rate (SAR for transmit frequency < 6 GHz) and power density (PD for transmit frequency > 6 GHz) time windows, respectively.

The equipment under test (EUT) is Smart Phone (FCC ID: 2ABZ2-EE149), it contains:

1. WWAN 2G/3G/4G technologies
2. mmw 5GNR 28GHz and 39GHz bands.
3. WLAN/BT

Both of WWAN and FR2 are enabled with Qualcomm® Smart Transmit feature. This feature performs time averaging algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure in compliance with FCC requirements all the time. WLAN/BT is not enabled with Smart Transmit.

Demonstrating compliance of EUT enabled with Qualcomm Smart Transmit feature is completed in three parts:

0. RF Exposure Compliance Test Report Part 0: SAR Characterization and PD Characterization

The SAR and PD Characterization, denoted as SAR Char and PD Char, determines the power limit that meets FCC exposure requirement after accounting for device design related uncertainties for each supported radio configuration and RF exposure usage scenario.

1. RF Exposure Compliance Test Report Part 1: Test in Static Transmission Condition

Part 1 test is to demonstrate that EUT meets FCC SAR and PD limits when transmitting at pre-determined maximum time-averaged power level for WWAN radios (i.e., 2G/3G/4G, 5GNR). The SAR and PD

measurement in Part 1 is under static transmission condition.

2. RF Exposure Compliance Test Report Part 2: Test in Dynamic Transmission Condition

In Part 2 test, the compliance is assessed in Tx varying transmission condition to validate the Qualcomm® Smart Transmit algorithm. The test results reported in Part 2 demonstrates that EUT complies with FCC RF exposure requirement under Tx varying transmission scenarios

3. Compliance Summary General Information

Smart Phone (FCC ID: 2ABZ2-EE149) complies with FCC RF exposure requirements.

Table 4-1 Reported RF exposure level

	FCC Limit	Reported RF Exposure level	Notes
Highest 1g SAR at P_{limit} (W/kg)	1.6	1.10	Sporton Document No. FA9D0701A (Part 1)
Highest 10g SAR at P_{limit} (W/kg)	4.0	3.77	Sporton Document No. FA9D0701A (Part 1)
Highest 4cm ² -avg PD at <i>input.power.limit</i> (mW/cm ²)	1.0	0.63	Sporton Document No. FA9D0701B (Part 1)
Highest normalized exposure ratio for simultaneous Tx	1.0	0.991	Sporton Document No. FA9D0701A (Part 1)