

Annex: Product Specification of Equipment Under Test

Product Specification	
Brand Name	NOKIA
Model Name	TA-1053
GSM Operating Band(s)	GSM 850/1900 MHz
GPRS Multi-Slot Class	GPRS Class 33, EGPRS Class 33, DTM Class 11
WCDMA Operating Band(s)	FDD Band 2 / 5
WCDMA Release, Category	HSDPA Rel. 8, Cat. 24 / HSUPA Rel. 7, Cat. 7
LTE Operating Band(s)	FDD Band 5, Bandwidth: 1.4 M/3 M/5 M/10 M FDD Band 7, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 40, Bandwidth: 5 M/10 M/15 M/20 M
LTE Release, Category	Rel. 10, Cat. 4
Wi-Fi Specification	802.11b/g/n HT20 802.11a/n HT20/HT40
Bluetooth Version	Bluetooth v3.0 EDR , Bluetooth v4.1 LE
Antenna Type / Gain	GSM: PIFA Antenna GSM 850: -3.97 dBi GSM 1900: -1.64 dBi WCDMA: PIFA Antenna FDD Band 2: -1.64 dBi FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 5: -3.97 dBi FDD Band 7: -0.85 dBi TDD Band 38: -2.01 dBi TDD Band 40: 0.37 dBi WLAN: PIFA Antenna 2400~2483.5MHz: -2.22 dBi 5150~5250MHz: -2.94 dBi 5250~5350MHz: -2.43 dBi 5470~5725MHz: -2.39 dBi 5725~5850MHz: -5.20 dBi Bluetooth: PIFA Antenna / -2.22 dBi GPS / Glonass / Beidou : Monopole Antenna NFC : Loop Antenna ANT+ : PIFA Antenna
Type of Modulation	GSM / GPRS: GMSK EGPRS: GMSK for MCS 0 ~ 4 & 8PSK for MCS5 ~9 WCDMA: QPSK (Uplink) HSDPA: 64QAM (Downlink) / HSUPA : 16QAM (Uplink) LTE: QPSK / 16QAM Bluetooth: GFSK, $\pi/4$ -DQPSK, 8-DPSK WLAN 802.11b: DSSS (DBPSK / DQPSK / CCK) WLAN 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) GPS / Glonass / Beidou: BPSK NFC : ASK ANT+ : GFSK

Transmitter Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band 2: 1852.4 MHz ~ 1907.6 MHz WCDMA Band 5: 826.4 MHz ~ 846.6 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz LTE Band 40 : 2302.5 MHz ~ 2397.5 MHz WLAN 802.11a/b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz ANT+ : 2402 MHz ~ 2480 MHz
Receiver Frequency Range	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band 2: 1932.4 MHz ~ 1987.6 MHz WCDMA Band 5: 871.4 MHz ~ 891.6 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz LTE Band 40 : 2302.5 MHz ~ 2397.5 MHz WLAN 802.11a/b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS / Beidou: 1.57542 GHz Glonass: 1602 MHz + $n \times 0.5625\text{MHz}$ ($n=-7,-6,-5,\dots,0,\dots,6$) NFC : 13.56 MHz ANT+ : 2402 MHz ~ 2480 MHz