

# Annex: Product Specification of Equipment Under Test

Product Specification	
Brand Name	NOKIA
Model Name	TA-1004
GSM Operating Band(s)	GSM 850/1900 MHz
GPRS Multi-Slot Class	GPRS Class 24, EGPRS Class 24
WCDMA Operating Band(s)	FDD Band 2 / 5
WCDMA Release, Category	HSDPA Rel. 8, Cat. 24 HSUPA Rel. 8, Cat. 6
LTE Operating Band(s)	FDD Band 2, Bandwidth: 1.4 M/3 M/5 M/10 M/15 M/20 M FDD Band 4, Bandwidth: 1.4 M/3 M/5 M/10 M/15 M/20 M 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 41, Bandwidth: 5 M/10 M/15 M/20 M
LTE Release, Category	Rel. 9, Cat. 9
Wi-Fi Specification	802.11b/g/n HT20 802.11a/n HT20/HT40 802.11ac VHT20/VHT40/VHT80
Bluetooth Version	Bluetooth v3.0 EDR , Bluetooth v4.2 LE
NFC	Type A/B
Antenna Type / Gain	<p><b>GSM: PIFA Antenna</b> GSM 850: -4.10 dBi GSM 1900: -2.00 dBi</p> <p><b>WCDMA: PIFA Antenna</b> FDD Band 2: -2.00 dBi FDD Band 5: -4.10 dBi</p> <p><b>LTE: PIFA Antenna</b> FDD Band 2: -2.00 dBi FDD Band 4: -3.60 dBi FDD Band 5: -4.10 dBi FDD Band 7: -2.10 dBi TDD Band 38: -2.10 dBi TDD Band 41: -2.10 dBi</p> <p><b>WLAN Antenna 1: PIFA Antenna</b> 2400~2483.5MHz: -5.20 dBi 5150~5250MHz: -5.30 dBi 5250~5350MHz: -4.90 dBi 5470~5725MHz: -4.30 dBi 5725~5850MHz: -4.20 dBi</p> <p><b>WLAN Antenna 2: PIFA Antenna</b> 2400~2483.5MHz: -5.50 dBi 5150~5250MHz: -4.90 dBi 5250~5350MHz: -4.70 dBi 5470~5725MHz: -4.30 dBi 5725~5850MHz: -4.30 dBi</p> <p><b>Bluetooth: PIFA Antenna</b> / -5.20 dBi <b>GPS / Glonass / Beidou</b> : Monopole Antenna <b>NFC</b> : Loop Antenna</p>

<b>Type of Modulation</b>	GSM / GPRS: GMSK EGPRS: GMSK for MCS 0 ~ 4 & 8PSK for MCS5 ~9 WCDMA: QPSK (Uplink) HSDPA: 64QAM (Downlink) / HSUPA : QPSK (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) WLAN 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) GPS / Glonass / Beidou: BPSK NFC : ASK
<b>Transmitter Frequency Range</b>	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 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 38 : 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz WLAN 802.11b/g/n: 2412 MHz ~ 2462 MHz WLAN 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5720 MHz; 5745 MHz ~ 5825 MHz; Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
<b>Receiver Frequency Range</b>	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 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 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 41: 2498.5 MHz ~ 2687.5 MHz WLAN 802.11b/g/n: 2412 MHz ~ 2462 MHz WLAN 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5720 MHz; 5745 MHz ~ 5825 MHz; Bluetooth: 2402 MHz ~ 2480 MHz GPS: 1.57542 GHz Glonass: 1602 MHz + $n \times 0.5625\text{MHz}$ ( $n=-7,-6,-5,\dots,0,\dots,6$ ) Beidou: 1559.052MHz ~ 1591.788MHz NFC : 13.56 MHz