Annex: Product Specification of Equipment Under Test

Brand Name	Product Specification	
Model Name	•	NOKIV
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 /4 /5 WCDMA Release, Category HSDPA Rel. 8, Cat. 24 HSDPA Rel. 7, Cat. 7 FDD Band 4, 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 7, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 17, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 17, Bandwidth: 5 M/10 M/15 M/20 M LTE Release, Category Rel. 10, Cat. 4 Wi-Fi Specification 802.11b/g/n HT20 802.11m/ HT20/HT40 802.11m/ HT20/HT40 Bluetooth Version Bluetooth v3.0 EDR., Bluetooth v4.1 LE GSM: PIFA Antenna GSM: PIFA Antenna GSM 900: -1.64 dBi WCDMA: PIFA Antenna FDD Band 2: -1.50 dBi FDD Band 2: -1.50 dBi FDD Band 3: -3.97 dBi LTE: PIFA Antenna FDD Band 6: -3.97 dBi LTE: PIFA Antenna FDD Band 7: -0.85 dBi FDD Band 7: -0.85 dBi FDD Band 7: -0.85 dBi FDD Band 7: -0.65 dBi FDD Band 7: -0.653 dB FDD Band 7: -0.653 dB FDD Band 7: -0.653 dBi FDD Band 7: -0.653 dB FDD Band 8: -1.5.02 dBi 5500-5250MHz: -2.29 dBi		
WCDMA Operating Band(s) FDD Band 2 /4 / 5 WCDMA Release, Category HSDPA Rel. 8, Cat. 24 LUPA Rel. 7, Cat. 7 FDD Band 2, Bandwidth: 1.4 W3 W/5 W/10 M/15 M/20 M FDD Band 3, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 7, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 12, Bandwidth: 5 M/10 M FDD Band 17, Bandwidth: 5 M/10 M FDD Band 38, Bandwidth: 5 M/10 M FDD Band 38, Bandwidth: 5 M/10 M LTE Release, Category Rel. 10, Cat. 4 Wi-Fi Specification 802.11b/g/n H720 802.11b/g/n H720 802.11b/g/n H720 802.11a/n H720/H740 Bluetooth Version Bluetooth V9.0 EDR , Bluetooth v4.1 LE GSM: PIFA Antenna GSM 850: -3.97 dBi GSM 1900: -1.64 dBi FDD Band 2: -1.64 dBi FDD Band 3: -1.65 dBi FDD Band 4: -1.50 dBi FDD Band 2: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 7: -0.85 dBi FDD Band 7: -0.85 dBi FDD Band 7: -0.85 dBi FDD Band 7: -0.85 dBi FDD Band 8: -2.01 dBi WLAN: PIFA Antenna 2400-2483.5MHz: -2.29 dBi 550-5850MHz: -2.29 d Bi 5725-5850MHz: -2.29 dBi 5725-5850MHz: -2.39 dBi 5725-5850MHz: -2.20 dBi <t< th=""><th> ,</th><th></th></t<>	,	
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HSUPA Rel. 7, Cat. 7	WCDMA Operating Band(s)	FDD Band 2 /4 / 5
FISHA Rel. 7, Cat. 7	WCDMA Release Category	HSDPA Rel. 8, Cat. 24
FDD Band 4, Bandwidth: 1.4 M/3 M/5 M/10 M/15 M/20 M FDD Band 7, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 17, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 17, Bandwidth: 5 M/10 M/15 M/20 M	Wobin's Release, Category	HSUPA Rel. 7, Cat. 7
FDD Band 7, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 12, Bandwidth: 1.4 M/3 M/5 M/10 M FDD Band 12, Bandwidth: 5 M/10 M FDD Band 17, Bandwidth: 5 M/10 M FDD Band 17, Bandwidth: 5 M/10 M FDD Band 17, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M FDD Band 21.1 m FDD/HT40 FDD		·
FDD Band 12, Bandwidth: 1.4 M/3 M/5 M/10 M FDD Band 17, Bandwidth: 5 M/10 M TDD Band 38, Bandwidth: 5 M/10 M TDD Band 38, Bandwidth: 5 M/10 M TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 30.2.11a/n HT20/HT40 Bluetooth V4.0 EDR, Bluetooth V4.1 LE GSM: PIFA Antenna GSM 850: -3.97 dBi GSM 1900: -1.64 dBi WCDMA: PIFA Antenna FDD Band 2: -1.64 dBi FDD Band 4: -1.50 dBi FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 4: -1.50 dB FDD Band 4: -1.50 dB FDD Band 4: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 7: -0.85 dBi FDD Band 38: -2.01 dBi WLAN: PIFA Antenna 2400-2483.5MHz: -2.22 dBi 5150-5250MHz: -2.24 dBi 5250-5350MHz: -2.43 dBi 5470-6725MHz: -2.39 dBi 5725-5850MHz: -5.20 dBi Bluetooth: PIFA Antenna / -2.22 dBi GPS / Glonass / Beldou: Monopole Antenna NFC: Loop Antenna NFC:		·
FDD Band 12, Bandwidth: 15 M/10 M FDD Band 38, Bandwidth: 5 M/10 M TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M TDD Band 11a/n HT20/HT40 Bluetooth Version Bluetooth v3.0 EDR , Bluetooth v4.1 LE GSM: PIFA Antenna GSM 850: -3.97 dBi GSM 1900: -1.64 dBi WCDMA: PIFA Antenna FDD Band 2: -1.64 dBi FDD Band 4: -1.50 dBi FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 2: -1.50 dBi FDD Band 2: -1.50 dB FDD Band 4: -0.85 dBi FDD Band 4: -0.85 dBi FDD Band 7: -6.85 dBi FDD Band 7: -6.85 dBi FDD Band 7: -6.53 dB TDD Band 38: -2.01 dBi WLAN: PIFA Antenna 2400-2483.5MHz: -2.22 dBi 5150-5250MHz: -2.43 dBi 5470-5725MHz: -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 NFC: Loop Antenna MFC: Loop Antenna MFC: Loop Antenna		
TDD Band 38, Bandwidth: 5 M/10 M/15 M/20 M LTE Release, Category Rel. 10, Cat. 4 802.11b/g/n HT20 802.11a/n HT20/HT40 Bluetooth Version Bluetooth v3.0 EDR , Bluetooth v4.1 LE GSM: PIFA Antenna GSM 850: -3.97 dBi GSM 1900: -1.64 dBi WCDMA: PIFA Antenna FDD Band 2: -1.64 dBi FDD Band 4: -1.50 dBi FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 2: -1.50 dB FDD Band 2: -1.50 dB FDD Band 4: -1.50 dB FDD Band 3: -0.85 dBi FDD Band 7: -6.83 dB FDD Band 7: -6.53 dB TDD Band 38: -2.01 dBi WLAN: PIFA Antenna 2400-2483.5MHz: -2.22 dBi 5150-5250MHz: -2.43 dBi 5470-5725MHz: -2.43 dBi 5470-5725MHz: -2.39 dBi Bluetooth: PIFA Antenna /-2.22 dBi GPS / Glonass / Beidou : Monopole Antenna NFC : Loop Antenna		
Rel. 10, Cat. 4		
### Specification ### Specific		
### Specification ### Specific		
Bluetooth Version	IVVI-EL Specification	
GSM: PIFA Antenna	·	
GSM 850: -3.97 dBi GSM 1900: -1.64 dBi WCDMA: PIFA Antenna FDD Band 2: -1.64 dBi FDD Band 4: -1.50 dBi FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 2: -1.50 dB FDD Band 4: -1.50 dB FDD Band 4: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 7: -0.85 dBi FDD Band 12: -6.93 dB FDD Band 17: -6.53 dB TDD Band 38: -2.01 dBi WLAN: PIFA Antenna 2400-2483.5MHz: -2.22 dBi 5150-5250MHz: -2.94 dBi 5250-5350MHz: -2.93 dBi 5470-5725MHz: -2.39 dBi 5470-5725MHz: -5.20 dBi Bluetoth: PIFA Antenna / -2.22 dBi GPS / Glonass / Beidou : Monopole Antenna NFC : Loop Antenna	Bluetooth Version	
GSM 1900: -1.64 dBi	1	
WCDMA: PIFA Antenna FDD Band 2: -1.64 dBi FDD Band 4: -1.50 dBi FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 2: -1.50 dB FDD Band 3: -1.50 dB FDD Band 4: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 7: -0.85 dBi FDD Band 12: -6.93 dB FDD Band 17: -6.53 dB TDD Band 38: -2.01 dBi WLAN: PIFA Antenna 2400-2483.5MHz: -2.22 dBi 5150-5250MHz: -2.94 dBi 5250-5350MHz: -2.43 dBi 5725-5850MHz: -5.20 dBi Bluetooth: PIFA Antenna / -2.22 dBi GPS / Glonass / Beidou : Monopole Antenna NFC : Loop Antenna		
FDD Band 2: -1.64 dBi FDD Band 4: -1.50 dBi FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 2: -1.50 dB FDD Band 4: -1.50 dB FDD Band 4: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 12: -6.93 dB FDD Band 38: -2.01 dBi WLAN: PIFA Antenna 2400~2483.5MHz: -2.22 dBi 5150~5250MHz: -2.94 dBi 5250~5350MHz: -2.94 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	1	
FDD Band 4: -1.50 dBi FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 2: -1.50 dB FDD Band 4: -1.50 dB FDD Band 4: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 12: -6.93 dB FDD Band 17: -6.53 dB TDD Band 38: -2.01 dBi WLAN: PIFA Antenna 2400~2483.5MHz: -2.22 dBi 5150~5250MHz: -2.43 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		
FDD Band 5: -3.97 dBi LTE: PIFA Antenna FDD Band 2: -1.50 dB FDD Band 4: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 12: -6.93 dB FDD Band 38: -2.01 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		
LTE: PIFA Antenna FDD Band 2: -1.50 dB FDD Band 4: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 12: -6.93 dB FDD Band 17: -6.53 dB TDD Band 38: -2.01 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		
FDD Band 2: -1.50 dB FDD Band 4: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 12: -6.93 dB FDD Band 17: -6.53 dB FDD Band 38: -2.01 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		
FDD Band 4: -1.50 dB FDD Band 7: -0.85 dBi FDD Band 12: -6.93 dB FDD Band 17: -6.53 dB TDD Band 38: -2.01 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		
Antenna Type / Gain FDD Band 7: -0.85 dBi FDD Band 17: -6.53 dB FDD Band 38: -2.01 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		
Antenna Type / Gain FDD Band 12: -6.93 dB FDD Band 38: -2.01 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		
FDD Band 17: -6.53 dB TDD Band 38: -2.01 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		
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	Antenna Type / Gain	FDD Band 17: -6.53 dB
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	!	TDD Band 38: -2.01 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		WLAN: PIFA Antenna
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		2400~2483.5MHz: -2.22 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		5150~5250MHz: -2.94 dBi
5725~5850MHz: -5.20 dBi Bluetooth: PIFA Antenna / -2.22 dBi GPS / Glonass / Beidou : Monopole Antenna NFC : Loop Antenna		
Bluetooth: PIFA Antenna / -2.22 dBi GPS / Glonass / Beidou : Monopole Antenna NFC : Loop Antenna		
GPS / Glonass / Beidou : Monopole Antenna NFC : Loop Antenna		
NFC : Loop Antenna		
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GSM / GPRS: GMSK	Type of Modulation	
EGPRS: GMSK for MCS 0 ~ 4 & 8PSK for MCS5 ~9		
WCDMA: QPSK (Uplink)		
HSDPA: 64QAM (Downlink) / HSUPA: 16QAM (Uplink)		· · · /
LTE: QPSK / 16QAM		
WLAN 802.11b: DSSS (DBPSK / DQPSK / CCK)		
WLAN 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)		·
GPS / Glonass / Beidou: BPSK		· · · · · · · · · · · · · · · · · · ·
NFC : ASK		NFC : ASK
ANT+: GFSK		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 4 : 1712.4 MHz ~ 1752.6 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 7 : 2502.5 MHz ~ 2567.5 MHz
	LTE Band 12 : 699.7 MHz ~ 715.3 MHz
	LTE Band 17 : 706.5 MHz ~ 713.5 MHz
	LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz
	WLAN 802.11b/g/n: 2412 MHz ~ 2462 MHz
	WLAN 802.11a/n: 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
	ANT+ : 2402 MHz ~ 2480 MHz
	GSM850: 869.2 MHz ~ 893.8 MHz
Receiver Frequency Range	GSM1900: 1930.2 MHz ~ 1989.8 MHz
	WCDMA Band 2: 1932.4 MHz ~ 1987.6 MHz
	WCDMA Band 4 : 2112.4 MHz ~ 2152.6 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 7 : 2622.5 MHz ~ 2687.5 MHz
	LTE Band 12 : 729.7 MHz ~ 745.3 MHz
	LTE Band 17 : 736.5 MHz ~ 743.5 MHz
	LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz
	WLAN 802.11b/g/n: 2412 MHz ~ 2462 MHz
	WLAN 802.11a/n: 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 + nx 0.5625MHz (n=-7,-6,-5,0,,6)
	Beidou: 1559.052MHz ~ 1591.788MHz
	NFC : 13.56 MHz
	ANT+: 2402 MHz ~ 2480 MHz