



Appendix A. Spot Check Evaluation

1. Introduction Section

For WWAN :

This report referenced from the FCC ID: IHDT56WA3
(GSM 850 / 1900, WCDMA Band 2 / 5 and LTE Band 5 / 7)

For WLAN/BT :

This report referenced from the FCC ID: IHDT56WA1
(DTS, DSS and U-NII)

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID (FCC ID: IHDT56WA5).

2. Difference Section

For WWAN:

The WWAN (GSM 850 / 1900, WCDMA Band 2 / 5 and LTE Band 5 / 7) SAR measurement results from the original filling can be found in SAR test report FCC ID: IHDT56WA3, Sporton Report No: FA720310-04 or appendix B1~B7.

For WLAN/BT:

The WLAN / BT (DTS, DSS and U-NII) SAR measurement results from the original filling can be found in SAR test report FCC ID: IHDT56WA1, Sporton Report No: FA720310 or appendix B3~B7.

The WWAN, WLAN antennas and surrounding circuitry is the same between these below devices, and tune up power targets are identical for WWAN, WLAN operations; Therefore SAR data for WWAN, WLAN from the original filling was used for this model and spot checks for WWAN, WLAN were performed to ensure that the SAR measurements for IHDT56WA5 are the same with WLAN / BT of IHDT56WA1 and WWAN of IHDT56WA3, for details of similarity and difference between these devices which can be found in the Operating Description.

The product specification is outlined in the following table:

FCC ID			IHDT56WA1	IHDT56WA3	IHDT56WA5
Wireless Tech	Mode		Frequency (MHz)		
GSM	GSM Voice GPRS (GMSK) EDGE (8PSK)	Multi-Slot Class 12 DTM: No	850/1900	850/1900	850/1900
UMTS	AMR/RCM12.2Kbps HSDPA/HSUPA/DC-HSDPA		B2/B4/B5	B2/B5	B2/B5
CDMA	1xRTT/1xEv-Do(Rev.0)/ 1xEv-Do(Rev.A)		BC0/BC1/BC10	N/A	N/A
LTE (FDD/TDD)	QPSK 16QAM		B2/B4/B5/B7/B12/B13/ B17/B25/B26/B30/B66/ B38/B41	B5/B7/B38/B41	B5/B7
Wi-Fi	11b/11g/11n(HT20)		2412-2462		
	11a/11n(HT20)/11n(HT40)		5180-5240 5260-5320 5500-5720 5745-5825		
Bluetooth	BR/EDR/LE		2402-2480 MHz		
NFC	ASK		13.56 MHz		



3. Spot Check Verification Data Section

<Head SAR>

Band	Mode	Test Position	Ch.	Freq. (MHz)	Original Model(FCC ID: IHDT56WA3)				Spot Check Model (FCC ID: IHDT56WA5)				Deviation
					Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
GSM850	GPRS (4 Tx slots)	Right Cheek	189	836.4	25.71	27.50	0.118	0.178	25.57	27.50	0.120	0.187	5.1%
GSM1900	GPRS (4 Tx slots)	Right Cheek	810	1909.8	22.67	24.50	0.102	0.155	22.50	24.50	0.104	0.165	6.5%
WCDMA II	RMC 12.2Kbps	Right Cheek	9538	1907.6	22.83	24.00	0.362	0.474	22.98	24.00	0.352	0.445	-6.1%
WCDMA V	RMC12.2Kbps	Right Cheek	4182	836.4	22.96	24.00	0.282	0.358	22.58	24.00	0.243	0.337	-5.9%
LTE Band 5	10M_QPSK_1_49	Right Cheek	20525	836.5	23.19	24.00	0.188	0.227	22.49	24.00	0.182	0.258	13.7%
LTE Band 7	20M_QPSK_1_99	Left Cheek	21100	2535	22.61	24.00	0.314	0.432	22.57	24.00	0.252	0.350	-19.0%

Band	Mode	Test Position	Ch.	Freq. (MHz)	Original Model(FCC ID: IHDT56WA1)					Spot Check Model (FCC ID: IHDT56WA5)					Deviation
					Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
WLAN2.4GHz	802.11b 1Mbps	Left Cheek	1	2412	15.92	16.00	97.63	1.240	1.292	15.92	16.00	97.63	1.170	1.219	-5.7%
WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	54	5270	15.31	15.50	85.14	0.949	1.165	15.04	15.50	85.14	0.850	1.110	-4.7%
WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	134	5670	15.46	15.50	85.14	1.080	1.281	15.40	15.50	85.14	1.060	1.275	-0.5%
WLAN5GHz	802.11n-HT40 MCS0	Left Cheek	151	5755	15.31	15.50	85.14	1.060	1.301	15.05	15.50	85.14	0.856	1.116	-14.2%

<Hotspot SAR>

Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Original Model(FCC ID: IHDT56WA3)				Spot Check Model (FCC ID: IHDT56WA5)				Deviation
						Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
GSM850	GPRS (4 Tx slots)	Front	10mm	189	836.4	25.71	27.50	0.549	0.829	25.93	27.50	0.551	0.791	-4.6%
GSM1900	GPRS (4 Tx slots)	Front	10mm	810	1909.8	22.67	24.50	0.396	0.604	22.50	24.50	0.376	0.596	-1.3%
WCDMA II	RMC 12.2Kbps	Front	10mm	9538	1907.6	20.15	21.30	0.768	1.001	19.88	21.30	0.696	0.965	-3.6%
WCDMA V	RMC 12.2Kbps	Front	10mm	4182	836.4	22.07	23.20	0.920	1.193	21.70	23.20	0.790	1.116	-6.5%
LTE Band 5	10M_QPSK_1_49	Front	10mm	20525	836.5	23.19	24.00	0.800	0.964	22.49	24.00	0.683	0.967	0.3%
LTE Band 7	20M_QPSK_1_99	Front	10mm	21350	2560	22.04	22.90	0.853	1.040	21.56	22.90	0.755	1.028	-1.2%

Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Original Model(FCC ID: IHDT56WA1)					Spot Check Model (FCC ID: IHDT56WA5)					Deviation
						Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
WLAN2.4GHz	802.11b 1Mbps	Back	10mm	6	2437	18.63	19.00	97.63	0.361	0.403	18.80	19.00	97.63	0.321	0.344	-14.6%
WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	46	5230	20.08	20.50	85.14	0.364	0.471	19.28	20.50	85.14	0.300	0.467	-0.8%
WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	159	5795	18.50	19.00	85.14	0.226	0.298	18.20	19.00	85.14	0.206	0.291	-2.3%

<Product specific SAR>

Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Original Model(FCC ID: IHDT56WA3)				Spot Check Model (FCC ID: IHDT56WA5)				Deviation
						Average Power (dBm)	Tune-Up Limit (dBm)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	
LTE Band 7	20M_QPSK_1_99	Bottom Side	0mm	21350	2560	22.53	24.00	2.480	3.479	22.68	24.00	2.260	3.063	-12.0%

Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Original Model(FCC ID: IHDT56WA1)					Spot Check Model (FCC ID: IHDT56WA5)					Deviation
						Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	
WLAN5GHz	802.11n-HT40 MCS0	Front	0mm	54	5270	19.66	19.70	85.14	1.910	2.265	18.83	19.70	85.14	1.540	2.211	-2.4%
WLAN5GHz	802.11n-HT40 MCS0	Front	0mm	110	5550	18.87	19.20	85.14	2.180	2.764	18.40	19.20	85.14	1.930	2.726	-1.4%

<Body-Worn SAR>

Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Original Model(FCC ID: IHDT56WA3)				Spot Check Model (FCC ID: IHDT56WA5)				Deviation
						Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
GSM850	GPRS (4 Tx slots)	Front	10mm	189	836.4	25.71	27.50	0.549	0.829	25.93	27.50	0.551	0.791	-4.6%
GSM1900	GPRS (4 Tx slots)	Front	10mm	810	1909.8	22.67	24.50	0.396	0.604	22.50	24.50	0.376	0.596	-1.3%
WCDMA II	RMC 12.2Kbps	Front	10mm	9538	1907.6	20.15	21.30	0.768	1.001	19.88	21.30	0.696	0.965	-3.6%
WCDMA V	RMC 12.2Kbps	Front	10mm	4182	836.4	22.07	23.20	0.920	1.193	21.70	23.20	0.790	1.116	-6.5%
LTE Band 5	10M_QPSK_1_49	Front	10mm	20525	836.5	23.19	24.00	0.800	0.964	22.49	24.00	0.683	0.967	0.3%
LTE Band 7	20M_QPSK_1_99	Front	10mm	21350	2560	22.04	22.90	0.853	1.040	21.56	22.90	0.755	1.028	-1.2%

Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Original Model(FCC ID: IHDT56WA1)					Spot Check Model (FCC ID: IHDT56WA5)					Deviation
						Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Duty Cycle %	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
WLAN2.4GHz	802.11b 1Mbps	Back	10mm	6	2437	18.63	19.00	97.63	0.361	0.403	18.80	19.00	97.63	0.321	0.344	-14.6%
WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	54	5270	19.66	19.70	85.14	0.437	0.518	18.95	19.70	85.14	0.370	0.517	-0.2%
WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	142	5710	18.30	19.20	85.14	0.373	0.539	17.72	19.20	85.14	0.276	0.456	-15.4%
WLAN5GHz	802.11n-HT40 MCS0	Back	10mm	159	5795	18.50	19.00	85.14	0.226	0.298	18.20	19.00	85.14	0.206	0.291	-2.3%
Bluetooth	1Mbps	Back	10mm	39	2441	11.96	12.00	76.60	0.060	0.066	11.96	12.00	76.60	0.051	0.056	-15.2%

Note:

1. The spot check verification shows the WWAN SAR performance of IHDT56WA3 represents the performance of IHDT56WA5.
2. The spot check verification shows the WLAN SAR performance of IHDT56WA1 represents the performance of IHDT56WA5.

4. Reference detail Section

Rule Part	Frequency Band (MHz)	Wireless Technology	Reference FCC ID	Reference Report Title	Reference Report No.	Reference Report Sections
22	824.2 ~ 848.8	GSM 850	IHDT56WA3	FCC SAR Test Report	FA720310-04	Sections related to GSM 850 test data
24	1850.2 ~ 1909.8	GSM1900	IHDT56WA3	FCC SAR Test Report	FA720310-04	Sections related to GSM 1900 test data
24	1852.4 ~ 1907.6	WCDMA B2	IHDT56WA3	FCC SAR Test Report	FA720310-04	Sections related to WCDMA B2 test data
22	826.4 ~ 846.6	WCDMA B5	IHDT56WA3	FCC SAR Test Report	FA720310-04	Sections related to WCDMA B5 test data
22	824.7 ~ 848.3	LTE B5	IHDT56WA3	FCC SAR Test Report	FA720310-04	Sections related to LTE B5 test data
27	2502.5 ~ 2567.5	LTE B7	IHDT56WA3	FCC SAR Test Report	FA720310-04	Sections related to LTE B7 test data
15C	2402~2480	Bluetooth	IHDT56WA1	FCC SAR Test Report	FA720310	Sections related to Bluetooth test data
15C	2412~2462	Wi-Fi	IHDT56WA1	FCC SAR Test Report	FA720310	Sections related to WiFi test data
15E	5180~5240 5260~5320 5500~5720 5745~5825	Wi-Fi	IHDT56WA1	FCC SAR Test Report	FA720310	Sections related to WiFi test data