



Spot Check Evaluation

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History of this test report

Version	Description	Issued Date
01	Initial issue of report	Dec. 04, 2018



1. Introduction Section

The original model (FCC ID: IHDT56XC1) and the variant model (FCC ID: IHDT56XC3) has identical PCB layout, antenna, SW implementation for Bluetooth/Wi-Fi/GPS. Based on their similarity, the FCC Part 15C (equipment class: DTS, DSS) and Part 15E (equipment class: NII) test data issued test data of IHDT56XC3 references the test data of IHDT56XC1

The original model (FCC ID: IHDT56XC1) and the variant model (FCC ID: IHDT56XC3) has identical PCB layout, antenna, SW implementation for GSM/WCDMA/LTE. Based on their similarity, the FCC Part 22, 24, 27 (equipment class: PCE) test data issued test data of IHDT56XC3 references the test data of IHDT56XC1

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID (FCC ID: IHDT56XC3).



2. Difference Section

The original model (FCC ID: IHDT56XC1) and the variant model (FCC ID: IHDT56XC3) has identical PCB layout, antenna, SW implementation for Bluetooth/Wi-Fi/NFC/GPS. The details of similarity and difference can be found in the Operating Description.

The original model (FCC ID: IHDT56XC1) and the variant model (FCC ID: IHDT56XC3) has identical PCB layout, antenna, SW implementation for GSM/WCDMA/LTE. Based on their similarity, the FCC Part 22, 24, 27 (equipment class: PCE) test data issued test data of IHDT56XC3 references the test data of IHDT56XC1

Cellular transmitter RF components are different in IHDT56XC3, to support capability for different cellular bands.

The product specification is outlined in the following table:

FCC ID			IHDT56XC1	IHDT56XC3
Wireless Tech	Mode		Frequency (MHz)	
GSM	GSM Voice GPRS (GMSK) EDGE (8PSK)	Multi-Slot Class 12 DTM: No	850/1900	850/1900
UMTS	AMR/RCM12.2Kbps HSDPA/HSUPA/DC-HSDPA		B5/B4/B2	B5/B2
LTE (FDD)	QPSK 16QAM		B2/B4/B5/B7/B12/B13/ B17/B25/B26//B30/B38/ B41/B66	B2/B4/B5/B13
CDMA	RC1/RC3		BC0/BC1/BC10	BC0/BC1/BC10
Wi-Fi	11b/11g/11n(HT20)		2412-2462	
	11a/11n(HT20)/11n(HT40)		5180-5240 5260-5320 5500-5720 5745-5825	
Bluetooth	V4.2 LE		2402-2480 MHz	



3. Spot Check Verification Data Section

Summary of the spot check:

Test Item	Mode	IHDT56XC1 Worst Result	IHDT56XC3 Worst Result	Difference (dB)
Average Conducted Power (dBm)	802.11b	17.99	17.95	0.04
	802.11g	10.49	10.30	0.19
	11n HT20	9.49	9.45	0.04
	BT (1Mbps)	11.24	11.19	0.05
	BT (2Mbps)	9.20	9.16	0.04
	BT (3Mbps)	9.21	9.17	0.04
	BT-LE	1.90	1.72	0.18
	11a, 5.2GHz	15.49	15.80	-0.31
	11n HT20, 5.2GHz	9.99	9.92	0.07
	11n HT40, 5.2GHz	9.97	9.99	-0.02
	11a, 5.3GHz	15.99	15.75	0.24
	11n HT20, 5.3GHz	9.98	9.99	-0.01
	11n HT40, 5.3GHz	9.99	9.78	0.21
	11a, 5.5GHz	15.98	15.79	0.19
	11n HT20, 5.5GHz	9.99	9.94	0.05
	11n HT40, 5.5GHz	9.94	9.77	0.17
	11a, 5.8GHz	15.99	15.82	0.17
	11n HT20, 5.8GHz	9.98	9.98	0.00
	11n HT40, 5.8GHz	9.99	9.91	0.08
	GSM 850	33.49	32.95	0.54
	GSM 1900	30.65	29.98	0.67
	WCDMA B2	22.87	23.36	-0.49
	WCDMA B5	22.87	23.59	-0.72
	CDMA BC0 1xRTT	24.38	24.11	0.27
	CDMA BC0 1xEVDO	24.37	24.09	0.28
	CDMA BC1 1xRTT	24.27	24.39	-0.12
	CDMA BC1 1xEVDO	24.26	24.41	-0.15
	CDMA BC10 1xRTT	24.47	24.14	0.33
	CDMA BC10 1xEVDO	24.46	24.08	0.38
	LTE B2 (FDD - QPSK)	23.36	23.63	-0.27
	LTE B4 (FDD - QPSK)	23.48	23.92	-0.44
	LTE B5 (FDD - QPSK)	23.21	23.48	-0.27
	LTE B13 (FDD - QPSK)	23.32	23.25	0.07
	IMEI of test sample	351838090015965 351838090015015	359543090002839 359543090013406 359543090013737	
	Test date	2018/01/02~2018/01/20	2018/10/12~2018/10/13	



Test Item	Mode	IHDT56XC1 Worst Result	IHDT56XC3 Worst Result	Difference (dB)
Radiated Spurious Emission (Band Edge. Harmonic) (dBuV/m)	802.11b	50.26	50.99	-0.73
	802.11g	47.31	49.11	-1.8
	BT (1Mbps)	50.75	48.38	2.37
	BT-LE	44.09	44.44	-0.35
	11n HT40, 5.2GHz	50.19	47.25	2.94
	11a , 5.3GHz	50.08	49.33	0.75
	11a , 5.6GHz	48.72	49.07	-0.35
	111n HT40, 5.8GHz	48.84	50.07	-1.23
	GSM 850	-31.16	-33.62	2.46
	GSM 1900	-45.04	-46.24	1.2
	WCDMA B2	-45.41	-48.34	2.93
	WCDMA B5	-49.32	-48.26	-1.06
	CDMA BC0	-46.26	-45.35	-0.91
	CDMA BC1	-45.47	-46.29	0.82
	CDMA BC10	-47.92	-46.11	-1.81
	LTE B2 (FDD - QPSK)	-45.26	-47.54	2.28
	LTE B4 (FDD - QPSK)	-46.56	-44.03	-2.53
	LTE B5 (FDD - QPSK)	-45.29	-42.72	-2.57
	LTE B13 (FDD - QPSK)	-52.99	-50.33	-2.66
	IMEI of test sample	351838090014992 351838090014406	359543090003555 359543090013406 359543090013737 359543090013752	
	Test date	2018/1/03~2018/1/23	2018/10/13~2018/10/17	

Conclusion:

Radiated spurious emission test against the variant model for non-cellular part based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

Based on the spot check test result (power levels measured are within 1dB, and the worst case of RSE spot check verification based on the worst condition from the original model is within 3dB, and are compliance with the limits), the test data from the original model is representative for the variant model.

The unwanted, harmonics, radiated spurious emission is reported peak measurement only due to spurious lower than 20dB than the limit, 74dBuV/m



4. Reference detail Section

Rule Part	Equipment Class	Wireless Technology	Frequency Band (MHz)	Reference FCC ID	Type Grant/Permissive Change	Reference Report Title	Reference Application	Reference Report Sections
15C	DTS	Bluetooth – LE Wii-Fi	2400~2483.5	IHDT56XC1	Original Grant	FCC RF Test Report	IHDT56XC3	Part 15C (FR7D2018-03B, FR7D2018-03C)
	DSS	Bluetooth	2400~2483.5	IHDT56XC1	Original Grant	FCC RF Test Report	IHDT56XC3	Part 15C (FR7D2018-03A)
15E	NII	Wi-Fi	5150~5250 5250~5350 5470~5725 5725~5850	IHDT56XC1	Original Grant	FCC RF Test Report	IHDT56XC3	Part 15E (FR7D2018-03E, FR7D2018-03F)
	NII	DFS	5470~5725	IHDT56XC1	Original Grant	FCC RF Test Report	IHDT56XC3	Part 15E (FZ7D2018-03)
Part 22.24.27	PCE	GSM/WCDMA/ CDMA	GSM 850/1900 WCDMA B2/5 BC0/1	IHDT56XC1	Original Grant	FCC RF Test Report	IHDT56XC3	Part 22.24.27 (FG7D2018-03A)
		LTE	LTE B2/4/5/13	IHDT56XC1	Original Grant	FCC RF Test Report	IHDT56XC3	Part 22.24.27 (FG7D2018-03C)
Part 90s	PCE	CDMA	BC10	IHDT56XC1	Original Grant	FCC RF Test Report	IHDT56XC3	Part 90s (FG7D2018-03B)

End of this report