



Spot Check Evaluation

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REVISION HISTORY

VERSION	DESCRIPTION	ISSUED DATE
Rev. 01	Initial issue of report	Mar. 06, 2018



1. Introduction Section

The original model (FCC ID: IHDT56XC2) and the variant model (FCC ID: IHDT56XC4) 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 IHDT56XC4 references the test data of IHDT56XC2

The original model (FCC ID: IHDT56XC2) and the variant model (FCC ID: IHDT56XC4) has identical PCB layout, antenna, SW implementation for LTE Band 12 and 17. Based on their similarity, Part 27, (equipment class: PCE) test data issued test data of IHDT56XC4 references the test data of IHDT56XC2

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID (FCC ID: IHDT56XC4).



2. Difference Section

The original model (FCC ID: IHDT56XC2) and the variant model (FCC ID: IHDT56XC4) has identical PCB layout, antenna, SW implementation for Bluetooth/Wi-Fi/GPS. The details of similarity and difference can be found in the Operating Description.

The original model (FCC ID: IHDT56XC2) and the variant model (FCC ID: IHDT56XC4) has identical PCB layout, antenna, SW implementation for LTE Band 12 and 17. The details of similarity and difference can be found in the Product Equality Declaration.

Cellular transmitter RF components are different in IHDT56XC4, to support capability for different cellular bands.

The product specification is outlined in the following table:

FCC ID		IHDT56XC2	IHDT56XC4
Wireless Tech	Mode	Frequency (MHz)	
GSM	GSM Voice GPRS (GMSK) EDGE (8PSK)	Multi-Slot Class 12 DTM: No	850/1900
UMTS	AMR/RCM12.2Kbps HSDPA/HSUPA/DC-HSDPA	B5/B4/B2	B5/B4/B2
LTE (FDD)	QPSK 16QAM	B2/B4/B5/B7/B12/B13/ B17/B25/B26/B38/B41/ B66/B71	B2/B4/B5/B12/B14/B17/ B30/B66
CDMA	RC1/RC3	BC0/BC1/BC10	-
Wi-Fi	11b/11g/11n(HT20)	2412-2462	
	11a/11n(HT20)/11n(HT40)	5180-5240 5260-5320 5500-5700 5745-5825 *5600-5650 notched	
Bluetooth	V4.2 LE	2402-2480 MHz	



3. Spot Check Verification Data Section

Summary of the spot check:

Test Item	Mode	IHDT56XC2 Worst Result	IHDT56XC4 Worst Result	Difference (dB)	
Average Conducted Power (dBm)	802.11b	18.49	18.48	0.01	
	802.11g	10.98	10.83	0.15	
	11n HT20	8.91	8.93	-0.02	
	BT (1Mbps)	11.82	12.00	-0.18	
	BT (2Mbps)	9.95	10.23	-0.28	
	BT (3Mbps)	9.96	10.29	-0.33	
	BT-LE	2.89	2.96	-0.07	
	11a, 5.2GHz	15.97	15.94	0.03	
	11n HT20, 5.2GHz	10.98	10.94	0.04	
	11n HT40, 5.2GHz	9.83	9.85	-0.02	
	11a, 5.3GHz	15.97	15.99	-0.02	
	11n HT20, 5.3GHz	10.97	10.96	0.01	
	11n HT40, 5.3GHz	9.91	9.90	0.01	
	11a, 5.5GHz	15.89	15.99	-0.1	
	11n HT20, 5.5GHz	10.96	10.97	-0.01	
	11n HT40, 5.5GHz	9.93	9.83	0.1	
	11a, 5.8GHz	15.97	15.98	-0.01	
	11n HT20, 5.8GHz	10.97	10.92	0.05	
	11n HT40, 5.8GHz	9.90	9.93	-0.03	
	LTE B12 (FDD - QPSK)	23.26	23.01	0.15	
LTE B17 (FDD - QPSK)	23.09	23.21	-0.12		
IMEI of test sample	990005440056357	351840090009840	351840090009741		
Test date	2017/12/22~2018/1/18	2018/01/05~2018/1/17			
Radiated Spurious Emission (Band Edge. Harmonic) (dBuV/m)	802.11b	44.3	43.38	0.92	
	802.1g	48.51	48.72	-0.21	
	BT (1Mbps)	45.27	48.08	-2.81	
	BT-LE	42.4	43.56	-1.16	
	11n HT40, 5.2GHz	50.12	47.38	2.74	
	11n HT40, 5.3GHz	50.29	47.41	2.88	
	11n HT40, 5.5GHz	46.59	44.97	1.62	
	11a, 5.8GHz	46.69	46.76	-0.07	
	LTE B12 (FDD - QPSK)	-55.07	-57.05	-2.02	
	IMEI of test sample	990005440074244	351840090009840	351840090009741	
	Test date	2017/12/25~2018/01/16	2018/01/04~2018/1/23		



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	IHDT56XC2	Original Grant	FCC RF Test Report	IHDT56XC4	Part 15C (FR7D2018B, FR7D2018C)
	DSS	Bluetooth	2400~2483.5	IHDT56XC2	Original Grant	FCC RF Test Report	IHDT56XC4	Part 15C (FR7D2018A)
15E	Nil	Wi-Fi	5150~5250 5250~5350 5470~5725 5725~5850	IHDT56XC2	Original Grant	FCC RF Test Report	IHDT56XC4	Part 15E (FR7D2018E, FR7D2018F)
Part 22.24.27	PCE	LTE	LTE B12/B17	IHDT56XC2	Original Grant	FCC RF Test Report	IHDT56XC4	Part 22.24.27 (FG7D2018B)

End of this report