

only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

This device supports LAA with downlink carrier aggregation only. It uses carrier aggregation in the downlink to combine LTE in the unlicensed spectrum (i.e. LTE Band 46) with LTE in the licensed band (served as PCC). All uplink communications and acknowledgements on the PCC remain identical to specifications when downlink carrier aggregation is inactive.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the maximum average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive. All bands required for SAR testing per FCC KDB procedures were considered. Based on the measured maximum powers below, no additional SAR tests were required for DLCA SAR configurations.

General PCC and SCC configuration selection procedure

- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)ii) of KDB 941225 D05 V01r02. All LTE bandwidth conducted powers needed for PCC uplink configuration selection can be found in Section 9.3 and appendix I. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
- To maximize aggregated bandwidth, highest channel bandwidth available for that CA combination was selected for SCC. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
- All selected PCC and SCC(s) remained fully within the uplink/downlink transmission band of the respective component carrier.

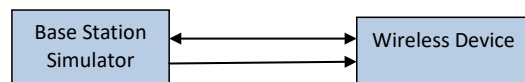


Figure J-1
DL CA Power Measurement Setup

FCC ID: PY7-76056F	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Portable Handset		APPENDIX J: Page 2 of 10

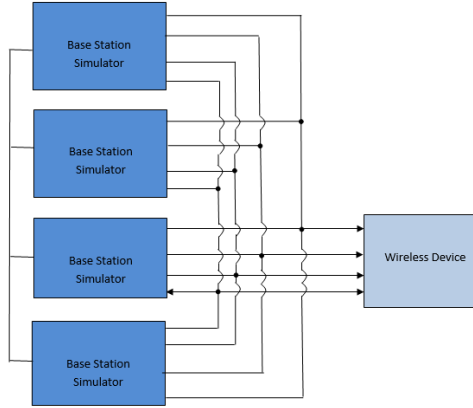


Figure J-2
DL CA with DL 4x4 MIMO Power Measurement Setup

J.2 Downlink Carrier Aggregation RF Conducted Powers

J.2.1 LTE Band 71 as PCC

Table J-3
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC			PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 1			SCC 2			SCC 3			Power			
				Mod.	PCC (UL) Freq. [MHz]	SCC Band					SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 4A-4A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	23.84	24.04	
CA 2A-2A-4A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B4	20	2175	2132.5	23.88	24.04
CA 2A-2A-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	23.83	24.04
CA 2A-66A-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	67236	2190	23.91	24.04
CA 2A-66C-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	23.96	24.04

J.2.2 LTE Band 12 as PCC

Table J-4
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL# RB	PCC UL# RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC 1			SCC 2			SCC 3			SCC 4			Power	
										SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 12A-66A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	24.06	23.91
CA 12A-66A (2)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	-	-	-	-	24.06	23.91
CA 2A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	24.03	23.91
CA 4A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	24.03	23.91
CA 4A-12A (2)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	-	-	-	-	24.03	23.91
CA 12B-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B66	20	66786	2145	-	-	-	-	23.75	23.91
CA 2A-4A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	23.72	23.91
CA 4A-12B	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B12	5	5047	732.7	LTE B4	20	2175	2132.5	-	-	-	-	23.70	23.91
CA 4A-4A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	-	-	-	-	23.74	23.91
CA 2A-12A-66C	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	23.70	23.91
CA 2A-2A-12A-66A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	LTE B2	20	700	1940	LTE B66	20	66786	2145	23.75	23.91

J.2.3 LTE Band 13 as PCC

Table J-5
Maximum Output Powers

Combination	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC				SCC 1				SCC 2				SCC 3				Power			
				Mod.	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 13A-46A-46A	LTE B13	10	23230	762	QPSK	1	49	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	47090	5180	-	-	-	-	23.93	24.09
CA 13A-46C-46A	LTE B13	10	23230	762	QPSK	1	49	5230	751	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	LTE B66	20	66786	2145	24.02	24.09
CA 13A-46A-66B	LTE B13	10	23230	762	QPSK	1	49	5230	751	LTE B46	20	50665	5537.5	LTE B66	15	66786	2145	LTE B66	5	66979	2154.3	24.03	24.09
CA 13A-46A-66C	LTE B13	10	23230	762	QPSK	1	49	5230	751	LTE B46	20	50665	5537.5	LTE B66	20	66786	2145	LTE B66	20	66984	2164.8	24.00	24.09
CA 2A-13A-46C	LTE B13	10	23230	762	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B46	20	50665	5537.5	LTE B46	20	50467	5517.7	23.94	24.09

FCC ID: PY7-76056F

SAR EVALUATION REPORT

Approved by:
Technical Manager

DUT Type:
Portable Handset

APPENDIX J:
Page 3 of 10

J.2.4 LTE Band 5 as PCC

Table J-6
Maximum Output Powers

[illegible]

J.2.5 LTE Band 66 as PCC

Table J-7
Maximum Output Powers

Combination	PCC Band	PCC RW [MHz]	PCC				SCC Band	SCC 1				SCC Band	SCC 2				SCC Band	SCC 3				SCC Band	SCC 4				SCC Band	SCC 5				Power			
			PCC (DL Ch)	PCC (UL Freq. [MHz])	Mod.	SCC UAR #B		SCC UL RB Offset	PCC (DL Ch)	PCC (DL Freq. [MHz])	SCC (DL Ch)		SCC (DL Freq. [MHz])	SCC Band	SCC (DL Ch)	SCC (DL Freq. [MHz])		SCC Band	SCC (DL Ch)	SCC (DL Freq. [MHz])	SCC Band		SCC (DL Ch)	SCC (DL Freq. [MHz])	SCC Band	SCC (DL Ch)		SCC (DL Freq. [MHz])	SCC Band	SCC (DL Ch)	SCC (DL Freq. [MHz])		SCC Band	SCC (DL Ch)	SCC (DL Freq. [MHz])
CA 12A0-1A1	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A2	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A3	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A4	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A5	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A6	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A7	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A8	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A9	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A10	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A11	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A12	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A13	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A14	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A15	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A16	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A17	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A18	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A19	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A20	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A21	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A22	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A23	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A24	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A25	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A26	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A27	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A28	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A29	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A30	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A31	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A32	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A33	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A34	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A35	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5	6066	727.5	24.0	24.0
CA 12A0-1A36	LTE-B80	S	130967	1712.5	QPSK	1	12	06661	212.5	LTE-B12	10	6066	727.5	S	130967	1712.5	6066	727.5	S	130967	1712.5														

J.2.6 LTE Band 41 as PCC

Table J-8
Maximum Output Powers

		SSC 1														SSC 2				SSC 3				SSC 4				Power	
CA Combination	PCC Band	PCC BW [MHz]	PCC [UL] Ch	PCC [UL] Freq. [MHz]	PCC	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC [DL] Channel	SSC [DL] Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC [DL] Channel	SSC [DL] Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC [DL] Channel	SSC [DL] Freq. [MHz]	SSC Band	SSC BW [MHz]	SSC [DL] Channel	SSC [DL] Freq. [MHz]	LTE Tx Power with CA (dBm)	LTE Single Carrier Tx Power (dBm)		
CA 41A-60A	LTE B41	20	40000	2593	QPSK	1	0	40000	2593	LTE B46	20	50005	5037.5	-	-	-	-	-	-	-	-	-	-	-	-	-	23.49	23.49	
CA 41C (1)	LTE B41	20	40000	2593	QPSK	1	0	40000	2593	LTE B41	20	40818	2012.8	-	-	-	-	-	-	-	-	-	-	-	-	-	23.48	23.48	
CA 41A-60C	LTE B41	20	40000	2593	QPSK	1	0	40000	2593	LTE B46	20	50005	5037.5	LTE B46	20	50497	5017.7	-	-	-	-	-	-	-	-	-	23.51	23.49	
CA 41D	LTE B41	20	40000	2593	QPSK	1	0	40000	2593	LTE B41	20	45422	2537.2	LTE B41	20	45428	2512.8	-	-	-	-	-	-	-	-	-	23.49	23.49	
CA 41A-60D	LTE B41	20	40000	2593	QPSK	1	0	40000	2593	LTE B46	20	50005	5037.5	LTE B46	20	50497	5017.7	LTE B46	20	50003	5007.7	-	-	-	-	-	23.49	23.49	
CA 41A-60E	LTE B41	20	40000	2593	QPSK	1	0	40000	2593	LTE B46	20	50003	5007.7	LTE B46	20	50497	5017.7	LTE B46	20	50003	5007.7	-	-	-	-	-	23.47	23.49	
CA 41A-60F	LTE B41	20	40000	2593	QPSK	1	0	40000	2593	LTE B46	20	50003	5007.7	LTE B46	20	50497	5017.7	LTE B46	20	50003	5007.7	-	-	-	-	-	23.47	23.49	
CA 41A-60G	LTE B41	20	40000	2593	QPSK	1	0	40000	2593	LTE B46	20	50003	5007.7	LTE B46	20	50497	5017.7	LTE B46	20	50003	5007.7	-	-	-	-	-	23.47	23.49	

FCC ID: PY7-76056F

DUT Type:
Portable Handset

SAR EVALUATION REPORT

Approved by:

Technical Manager

APPENDIX J:
Page 4 of 10

J.2.1 LTE Band 48 as PCC

Table J-9
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power	
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Channel	PCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC [DL] Channel	SCC [DL] Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 48A-48A	LTE B48	5	56715	3697.5	QPSK	1	12	56715	3697.5	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	23.96	23.97	
CA 48A-48C	LTE B48	5	56715	3697.5	QPSK	1	12	56715	3697.5	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	23.93	23.97	
CA 48C-48C	LTE B48	5	56715	3697.5	QPSK	1	12	56715	3697.5	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	23.96	23.97	
CA 48A-48D	LTE B48	5	56715	3697.5	QPSK	1	12	56715	3697.5	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	23.89	23.97	
CA 48C-48D	LTE B48	5	56715	3697.5	QPSK	1	12	56715	3697.5	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	23.90	23.97	
CA 48A-48E	LTE B48	5	56715	3697.5	QPSK	1	12	56715	3697.5	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	23.83	23.97	
CA 48C-48E	LTE B48	5	56715	3697.5	QPSK	1	12	56715	3697.5	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	LTE B48	20	55340	3590	23.94	23.97	

J.3 DL CA with DL 4x4 MIMO RF Conduction Powers

This device supports downlink 4x4 MIMO operations for some LTE bands. Uplink transmission is limited to a single output stream. When carrier aggregation was applicable, the general test selection and setup procedures described in Section J.1 were applied.

Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

J.3.1 LTE 4x4 MIMO DL Standalone Powers

Table J-10
Maximum Output Powers

LTE Band	Bandwidth [MHz]	Channel	Frequency [MHz]	Modulation	RB Size	RB Offset	4x4 DL MIMO Tx. Power [dBm]	Single Antenna Tx. Power [dBm]	Target Power [dBm]
5	5	20525	836.5	QPSK	1	12	24.01	24.03	24.0
66	5	131997	1712.5	QPSK	1	12	24.29	24.09	24.0
41	20	40620	2593	QPSK	1	0	23.53	23.45	24.0
48	5	56715	3697.5	QPSK	1	12	24.02	23.97	24.0

J.3.1 LTE Band 71 as PCC

Table J-11
Maximum Output Powers

Power																														
Combination	PCC Band	PCC										SCC1				SCC2				SCC3				LTE TxPower with DL CA Enabled (dBm)	LTE Single Carrier Power (dBm)					
		PCC BW [MHz]	PCC [UL] Ch.	PCC [DL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.			SCC [DL] Freq. [MHz]	DL Ant. Config.			
CA [4A]-[4A]-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	2x2	-	-	-	-	-	-	-	23.85	24.04	
CA [4A]-[4A]-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B4	20	2175	2132.5	4x4	LTE B4	10	2350	2150	4x4	-	-	-	-	-	-	-	23.86	24.04	
CA [2A]-[2A]-4A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B4	20	2175	2132.5	2x2	-	-	-	23.85	24.04
CA [2A]-[2A]-4A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	23.83	24.04
CA 2A-2A-16A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	2x2	LTE B2	20	700	1940	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	23.82	24.04
CA 2A-2A-16A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	2x2	LTE B2	20	700	1940	2x2	LTE B4	20	2175	2132.5	4x4	-	-	-	23.83	24.04
CA [2A]-[2A]-4A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B4	20	2175	2132.5	2x2	-	-	-	23.83	24.04
CA [2A]-2A-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	2x2	LTE B6B	20	66786	2145	2x2	-	-	-	23.82	24.04
CA [2A]-2A-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B6B	20	66786	2145	2x2	-	-	-	23.83	24.04
CA [2A]-2A-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	2x2	LTE B6B	20	66786	2145	2x2	LTE B6B	20	66786	2145	4x4	-	-	-	23.86	24.04
CA [2A]-[2A]-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	2x2	LTE B6B	20	66786	2145	2x2	LTE B6B	20	66786	2145	4x4	-	-	-	23.86	24.04
CA [2A]-[2A]-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B2	20	700	1940	4x4	LTE B6B	20	66786	2145	2x2	-	-	-	23.81	24.04
CA [2A]-66A-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B6B	20	66786	2145	2x2	LTE B6B	20	67236	2190	2x2	-	-	-	23.75	24.04
CA 2A-16A-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	2x2	LTE B6B	20	66786	2145	2x2	LTE B6B	20	67236	2190	2x2	-	-	-	23.77	24.04
CA 2A-16A-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	2x2	LTE B6B	20	66786	2145	2x2	LTE B6B	20	67236	2190	2x2	-	-	-	23.79	24.04
CA [2A]-[66A]-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B6B	20	66786	2145	2x2	LTE B6B	20	67236	2190	2x2	-	-	-	23.93	24.04
CA [16A]-[66A]-66A-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B6B	20	66786	2145	4x4	LTE B6B	20	67236	2190	2x2	-	-	-	23.79	24.04
CA [2A]-[66C]-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B6B	20	66786	2145	2x2	LTE B6B	20	66984	2164.8	2x2	-	-	-	23.92	24.04
CA [2A]-[66C]-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B6B	20	66786	2145	4x4	LTE B6B	20	66984	2164.8	2x2	-	-	-	23.94	24.04
CA [2A]-[66C]-71A	LTE B71	5	133147	665.5	QPSK	1	12	68611	619.5	2x2	LTE B2	20	900	1960	4x4	LTE B6B	20	66786	2145	4x4	LTE B6B	20	66984	2164.8	4x4	-	-	-	23.95	24.04

FCC ID: PY7-76056F	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Portable Handset		APPENDIX J: Page 5 of 10

J.3.2 LTE Band 12 as PCC

Table J-12
Maximum Output Powers

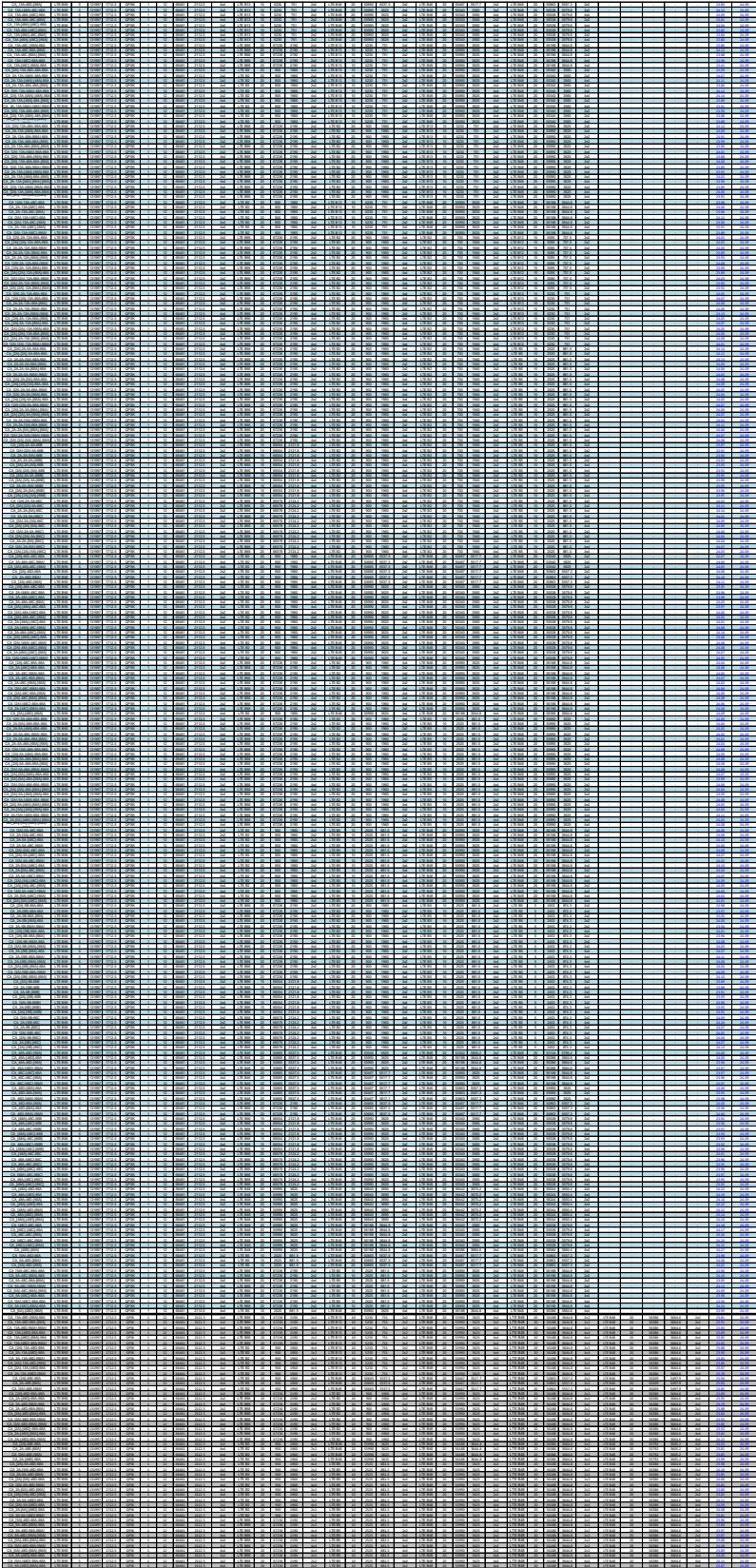
[illegible]

J.3.3 LTE Band 13 as PCC

Table J-13
Maximum Output Powers

[illegible]

APPENDIX J:
Page 8 of 10



FCC ID: PY7-76056F	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Portable Handset		APPENDIX J: Page 9 of 10

J.3.6 LTE Band 41 as PCC

Table J-16
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power						
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]	
CA [41A]-4BA	LTE B41	20	40620	2593	QPSK	1	0	40620	2593	4x4	LTE B40	20	50653	5537.5	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.52	23.45	
CA [41C]-1T	LTE B41	20	40620	2593	QPSK	1	0	40620	2593	4x4	LTE B41	20	40618	2612.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.55	23.45
CA [41A]-4BC	LTE B41	20	40620	2593	QPSK	1	0	40620	2593	4x4	LTE B40	20	50653	5537.5	2x2	LTE B40	20	50667	5517.7	2x2	-	-	-	-	-	-	-	-	-	-	-	23.53	23.45
CA [41C]-1T	LTE B41	20	40620	2593	QPSK	1	0	40620	2593	4x4	LTE B41	20	40618	2612.8	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.55	23.45
CA [41A]-4BD	LTE B41	20	40620	2593	QPSK	1	0	40620	2593	4x4	LTE B40	20	50653	5537.5	2x2	LTE B46	20	50667	5517.7	2x2	LTE B40	20	50663	5557.3	2x2	-	-	-	-	-	-	23.38	23.45
CA [41A]-4BE	LTE B41	20	40620	2593	QPSK	1	0	40620	2593	4x4	LTE B40	20	50653	5537.5	2x2	LTE B46	20	50667	5517.7	2x2	LTE B40	20	50663	5557.3	2x2	LTE B40	20	51001	5577.1	2x2	23.37	23.45	

J.3.1 LTE Band 48 as PCC

Table J-17
Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				SCC 4				Power					
	PCC Band	PCC BW [MHz]	PCC [UL] Ch.	PCC [UL] Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC [DL] Ch.	PCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	SCC Band	SCC BW [MHz]	SCC [DL] Ch.	SCC [DL] Freq. [MHz]	DL Ant. Config.	LTE Tx Power with DL CA Enabled [dBm]	LTE Single Carrier Tx Power [dBm]
CA 48A-48A	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	2x2	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.85	23.97	
CA 48A-48A	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	55340	3560	2x2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.96	23.97	
CA 48A-48A	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.98	23.97	
CA 48A-48C	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	55340	3560	2x2	LTE B48	20	55338	3579.8	2x2	-	-	-	-	-	-	-	-	-	-	23.96	23.97
CA 48C-48A	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	2x2	LTE B48	20	56098	3685.8	2x2	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	23.95	23.97
CA 48A-48C	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	55340	3560	4x4	LTE B48	20	55338	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	24.02	23.97
CA 48C-48A	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	56098	3685.8	4x4	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	23.96	23.97
CA 48A-48C	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	2x2	LTE B48	20	55340	3560	4x4	LTE B48	20	55338	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	23.94	23.97
CA 48C-48A	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	56098	3685.8	4x4	LTE B48	20	55340	3560	2x2	-	-	-	-	-	-	-	-	-	-	23.93	23.97
CA 48A-48D	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	55340	3560	2x2	LTE B48	20	55338	3579.8	2x2	LTE B48	20	55736	3595.6	2x2	-	-	-	-	-	23.98	23.97
CA 48A-48D	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	55340	3560	4x4	LTE B48	20	55338	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	23.96	23.97
CA 48A-48D	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	55340	3560	4x4	LTE B48	20	55338	3579.8	4x4	-	-	-	-	-	-	-	-	-	-	23.98	23.97
CA 48C-48D	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	2x2	LTE B48	20	56098	3685.8	2x2	LTE B48	20	55340	3560	2x2	LTE B48	20	55736	3595.6	2x2	-	-	-	-	-	23.95	23.97
CA 48C-48D	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	56098	3685.8	4x4	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	23.93	23.97
CA 48C-48D	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	56098	3685.8	4x4	LTE B48	20	55340	3560	4x4	-	-	-	-	-	-	-	-	-	-	23.95	23.97
CA 48A-48E	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	55340	3560	2x2	LTE B48	20	56098	3685.8	2x2	LTE B48	20	55736	3595.6	2x2	LTE B48	20	55934	3616.4	2x2	23.92	23.97
CA 48A-48E	LTE B48	5	56715	5697.5	QPSK	1	12	56715	5697.5	4x4	LTE B48	20	55340	3560	4x4	LTE B48	20	56098	3685.8	4x4	-	-	-	-	-	-	-	-	-	-	23.94	23.97

FCC ID: PY7-76056F	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Portable Handset		APPENDIX J: Page 10 of 10