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Federal Communications Commission,
Authorization & Evaluation Division,
7435 Oakland Mills Road,
Columbia, MD. 21046

Attention: Test data re-use

Test data re-use to demonstrate compliance in a new application.

With this application we are asking permission to re-use partially FCC ID: V27SD-41 test data to demonstrate compliance of FCC ID: V27SD-42. FCC ID: V27SD-42 is a LTE band variant of FCC ID: V27SD-41.

Brief description of the changes:

In V27SD-42 FCC LTE bands B13 and B17 have been replaced with non-FCC LTE bands B28a and LTE B28b. All signal paths between V27SD-41 and V27SD-42 are identical, band replacement is done by changing component values.

Non-FCC LTE bands B1 and B8 have been activated by SW.

In addition LTE B14 TX tuning has been changed by changing tuning parameters and memory is upgraded from 16GB to 32GB. PWB, antenna radiators and mechanical parts are identical between V27SD-41 and V27SD-42.

Attestation from the grantee:

Bittium takes full responsibility that test data referenced below represent compliance for V27SD-42.

Internal conclusion was to retest V27SD-42 as follows:

- §2.1093 FCC SAR (complete retest for LTE B14, for other technologies a worst case check)
- §22.913, §24.232, §27.250 RF power output (for used cellular technologies)
- §22.917, §24.238, §27.53, §90.210, §90.669 Spurious emissions at antenna terminals (for used cellular technologies)
- §22.917, §24.238, §27.53 Field strength of spurious radiation (for used cellular technologies)
- §22.917, §24.238, §27.53, §90.691 Band edge compliance (for used cellular technologies)
- §90.205, §90.542 Maximum Channel Power (for used cellular technologies)
- §90.209 Occupied Bandwidth (for LTE B14)
- §90.230 Frequency stability (for LTE B14)

Test reports related to this change are:

- FCC SAR Compliance Test Report for V27SD-42
- 9304523ECB0022 FCC Spot Check Test Report For V27SD-42
- SA150623C04 (FCC SAR Report for V27SD-41)

Reference FCC ID cross reference table:

Equipment Class	Reference FCC ID	Type Grant/ Permissive Change	Date	Reference Application	Folder Test/RF Exposure	Report Title
PCE	V27SD-41	Grant	08-Dec-2015	MDE_ELEKT_1502_FCCg	Test Report	Sections 3.5.2, 3.5.5, 3.5.8, 3.5.11, 3.5.14 (LTE4) 3.5.17
PCE	V27SD-41	Grant	08-Dec-2015	MDE_ELEKT_1502_FCCh	Test Report	Sections 3.5.2, 3.5.5, 3.5.7, 3.5.9, 3.5.12, 3.5.14, 3.5.16 (LTE4), 3.5.19, 3.5.21
PCE	V27SD-41	Grant	08-Dec-2015	MDE_ELEKT_1502_FCCi	Test Report	Section 3.5.7
DTS	V27SD-41	Grant	08-Dec-2015	MDE_ELEKT_1502_FCCa	Test Report	All sections
DTS	V27SD-41	Grant	08-Dec-2015	MDE_ELEKT_1502_FCCf	Test Report	All sections
NII	V27SD-41	Grant	08-Dec-2015	MDE_ELEKT_1502_FCCb_rev2	Test Report	All sections
NII	V27SD-41	Grant	08-Dec-2015	137269-676311	Test Report	All Sections
DSS	V27SD-41	Grant	08-Dec-2015	MDE_ELEKT_1502_FCCc	Test Report	All sections
JBP	V27SD-41	Grant	08-Dec-2015	MDE_ELEKT_1502_FCCd	Test Report	All sections
DXX	V27SD-41	Grant	08-Dec-2015	MDE_ELEKT_1502_FCCe	Test Report	All sections
SAR	V27SD-41	Grant	08-Dec-2015	SA150623C04_7Layers_Tough Mobile_FCC SAR	RF Exposure	All sections except LTE14 related

Spot check summary table (parts 2, 22h, 24e, 27, 90):

Test case	Frequency band	V27SD-42 worst case	V27SD-41 worst case
Spurious emissions at antenna terminals §2.1051, §22.917	GSM850	-34.4 dBm	-13.6 dBm
	WCDMA FDD5	< -43 dBm	-32.5 dBm
	LTE FDD5	< -43 dBm	-31.6 dBm
Field strength of spurious radiation §2.1053, §22.917	GSM850	< -33 dBm	-24.30 dBm
	WCDMA FDD5	< -33 dBm	-26.21 dBm
	LTE FDD5	< -33 dBm	-41.68 dBm
Band edge compliance §2.1053, §22.917	GSM850	-14.1 dBm	-13.29 dBm
	WCDMA FDD5	-35.1 dBm	-33.02 dBm
	LTE FDD5	-28.3 dBm	-27.2 dBm
Spurious emissions at antenna terminals §2.1051, §24.238	GSM1900	-19.1 dBm	-18.8 dBm
	WCDMA FDD2	< -33 dBm	-21.0 dBm
	LTE FDD2	< -33 dBm	-26.5 dBm
Field strength of spurious radiation §2.1053, §24.238	GSM1900	< -33 dBm	-19.39 dBm
	WCDMA FDD2	< -33 dBm	-16.52 dBm
	LTE FDD2	< -33 dBm	-24.25 dBm
Band edge compliance §2.1053, §24.238	GSM1900	-15.4 dBm	-18.76 dBm
	WCDMA FDD2	-22.2 dBm	-30.74 dBm
	LTE FDD2	-27.3 dBm	-23.38 dBm

Spurious emissions at antenna terminals §2.1051, §27.53	WCDMA FDD4	< -33 dBm	-20.6 dBm
	LTE FDD4	< -33 dBm	-20.8 dBm
Field strength of spurious radiation §2.1053, 27.53	WCDMA FDD4	< -33 dBm	-15.59 dBm
	LTE FDD4	< -33 dBm	-31.52 dBm
Band edge compliance §2.1053, §27.53	WCDMA FDD4	-36.9 dBm	-29.92 dBm
	LTE FDD4	-27.4 dBm	-23.34 dBm
Occupied Bandwidth §2.1046, §90.209	LTE FDD14 BW 5MHz	4.5 MHz	4.5 MHz
	LTE FDD14 BW 10MHz	8.9 MHz	9.1 MHz
Frequency stability §2.1055, §90.230	LTE FDD14	2.42 Hz	22 Hz
Spurious emissions at antenna terminals §2.1051, §90.210 & §90.669	LTE FDD14	< -33 dBm	-22.5 dBm
Radiated spurious emission §2.1053, §90.210	LTE FDD14	< -33 dBm	-23.82 dBm
Band edge compliance §2.1053, §90.691	LTE FDD14	-30.8 dBm	-30.32 dBm

SAR highest SAR value spot check summary table:

Equipment class	System	Highest reported SAR 1g(W/kg) in Head Exposure Condition		Highest reported SAR 1g(W/kg) in Body-Worn Exposure Condition		Highest reported SAR 1g(W/kg) in Hotspot Mode	
		V27SD-42	V27SD-41	V27SD-42	V27SD-41	V27SD-42	V27SD-41
PCE	GSM850	0.22	0.24	0.42	0.38	0.42	0.38
	PCS1900	0.34	0.32	0.28	0.30	0.28	0.30
	WCDMA II	0.78	0.88	0.67	0.55	0.67	0.55
	WCDMA IV	0.49	0.68	0.62	0.76	0.62	0.76
	WCDMA V	0.21	0.26	0.37	0.39	0.37	0.39
	LTE 2	0.59	0.61	0.44	0.60	0.44	0.60
	LTE 4	0.46	0.40	0.44	0.52	0.44	0.52
	LTE 5	0.18	0.24	0.29	0.35	0.29	0.35
	LTE 7	0.75	0.55	1.27	1.36	1.27	1.36
	LTE 14	0.14	0.25	0.31	0.49	0.31	0.49
DTS	2.4 GHz WLAN	0.11	0.08	0.13	0.11	0.13	0.18
NII	5.3 GHz WLAN	0.13	0.06	0.22	0.55	n/a	n/a
	5.6 GHz WLAN	0.24	0.21	0.12	0.09	n/a	n/a
	5.8 GHz WLAN	0.04	0.03	0.01	0.01	n/a	n/a

Highest Simultaneous Transmission SAR	SAR 1g(W/kg) in Head Exposure Condition		SAR 1g(W/kg) in Body-Worn Condition		SAR 1g(W/kg) in Hotspot Mode	
	V27SD-42	V27SD-41	V27SD-42	V27SD-41	V27SD-42	V27SD-41
PCE(Low Band) + PCE(High Band) + DTS	**	1.13	1.22	1.36	1.22	1.36
PCE(Low Band) + PCE(High Band) + NII	**	1.15	1.31	1.54	n/a	n/a
PCE(LTE 7) + DTS	**	0.55	1.40	1.47	1.4	1.47
PCE(LTE 7) + NII	**	0.57	1.49	1.36	n/a	n/a
PCE(LTE 7) + DSS	**	n/a	**	1.36	**	n/a

** not evaluated

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