FCC RF Exposure Report

Report No.:	MFBHQC-WTW-P21030610F
FCC ID:	QIPMV31-W
Test Model:	MV31-W
Received Date:	Sep. 06, 2021
Test Date:	Sep. 29 ~ Oct. 10, 2021
Issued Date:	Jun. 24, 2022
Applicant:	THALES DIS AIS Deutschland GmbH
Address:	Siemensdamm 50, Berlin, 13629, German
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
MFBHQC-WTW-P21030610F	Original release	Jun. 24, 2022

1 Certificate of Conformity

Product:	Cinterion MV31-W
Brand:	CINTERION
Test Model:	MV31-W
Sample Status:	Engineering Sample
Applicant:	THALES DIS AIS Deutschland GmbH
Test Date:	Sep. 29 ~ Oct. 10, 2021
Standards:	FCC Part 2 (Section 2.1091)
References Test Guidance:	KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen , **Date:** Jun. 24, 2022

Pettie Chen / Senior Specialist

Approved by : Jeremy Lin , **Date:** Jun. 24, 2022

Jeremy Lin / Project Engineer

Note: This report is prepared for FCC class II permissive change. This report is issued as a duplicate report of BV CPS report no.: SABHQC-WTW-P21030610B (FCC ID: 2AQ68T99W175). Difference compared with the original report is changing applicant, FCC ID, product name, brand and model. Due to no effect any test item, we didn't re-calculated MPE value.

2 RF Exposure

3.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	…	…	f/1500	30
1500-100,000	…	…	1.0	30

f = Frequency in MHz; *Plane-wave equivalent power density

3.2 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

pi = 3.1416

r = distance between observation point and center of the radiator in cm

3.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Density Power

Function	Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WCDMA Band 2	1850.7-1909.3	27.79	20	0.120	1
WCDMA Band 4	1710.7-1754.3	27.74	20	0.118	1
LTE Band 2	1850.7-1909.3	28.09	20	0.128	1
LTE Band 4	1710.7-1754.3	28.25	20	0.133	1
LTE Band 7	2502.5-2567.5	28.66	20	0.146	1
LTE Band 25	1850.7-1914.3	27.99	20	0.125	1
LTE Band 30	2307.5-2312.5	23.50	20	0.045	1
LTE Band 38	2572.5-2617.5	28.85	20	0.153	1
LTE Band 41	2547.5-2652.5	32.03	20	0.317	1
LTE Band 48 (Per 10M)	3552.5-3697.5	22.78	20	0.038	1
LTE Band 48 (Full Power)	3552.5-3697.5	22.92	20	0.039	1
LTE Band 42 (Per 10M)	3552.5-3597.5	22.56	20	0.036	1
LTE Band 42 (Full Power)	3552.5-3597.5	22.79	20	0.038	1
LTE Band 66	1710.7-1779.3	27.95	20	0.124	1
LTE Band 7C	2507.8-2560.0	28.71	20	0.148	1
LTE Band 38C	2580.0-2610.0	30.26	20	0.211	1
LTE Band 41C	2506.0-2680.0	30.23	20	0.210	1
LTE Band 48C (Per 10M)	3560.0-3690.0	22.53	20	0.036	1
LTE Band 48C (Full Power)	3560.0-3690.0	22.89	20	0.039	1
LTE Band 42C (Per 10M)	3552.5-3697.5	22.25	20	0.033	1
LTE Band 42C (Full Power)	3552.5-3697.5	22.68	20	0.037	1
LTE Band 66C	1720.0-1770.0	28.89	20	0.154	1
LTE Band 66B	1715.0-1775.0	28.63	20	0.145	1
5GNR (n38)	2580.0-2610.0	28.51	20	0.141	1
5GNR (n41)	2506.02-2679.99	30.81	20	0.240	1

Function	Frequency Band (MHz)	ERP (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WCDMA Band 5	826.4-846.6	25.15	27.30	20	0.107	0.551
LTE Band 5	824.7-848.3	25.84	27.99	20	0.125	0.550
LTE Band 26 (Part 22)	824.7-848.3	25.64	27.79	20	0.120	0.550
LTE Band 12	699.7-715.3	26.35	28.50	20	0.141	0.466
LTE Band 13	779.5-784.5	26.41	28.56	20	0.143	0.520
LTE Band 14	790.5-795.5	26.41	28.56	20	0.143	0.527
LTE Band 17	706.5-713.5	26.27	28.42	20	0.138	0.471
LTE Band 26 (Part 90)	814.7-823.3	25.78	27.93	20	0.124	0.543
LTE Band 71	665.5-695.5	25.97	28.12	20	0.129	0.444
LTE Band 5B	829.0-844.0	25.79	27.94	20	0.124	0.553

Function		Frequency Band (MHz)	ERP (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Co-located Ratio<1
ENDC n2		1852.5-1907.5	-	27.55	20	0.113	1	-
ENDC n2	LTE Band 5	824.7-848.3	25.04	27.19	20	0.104	0.550	0.303
	LTE Band 12	699.7-715.3	25.45	27.60	20	0.114	0.466	0.359
	LTE Band 13	779.5-784.5	25.46	27.61	20	0.115	0.520	0.334
	LTE Band 30	2307.5-2312.5	-	23.30	20	0.043	1	0.156
	LTE Band 48 (Per 10M)	3552.5-3697.5	-	22.71	20	0.037	1	0.150
	LTE Band 48 (Full Power)	3552.5-3697.5	-	22.71	20	0.037	1	0.150
	LTE Band 66	1710.7-1779.3		27.47	20	0.111	1	0.224
ENDC n5		826.5-846.5	24.96	27.11	20	0.102	0.551	-
ENDC n5	LTE Band 2	1850.7-1909.3	-	27.66	20	0.116	1	0.302
	LTE Band 7	2502.5-2567.5	-	28.49	20	0.141	1	0.326
	LTE Band 12	699.7-715.3	25.45	27.60	20	0.114	0.466	0.431
	LTE Band 48 (Per 10M)	3552.5-3697.5	-	22.71	20	0.037	1	0.223
	LTE Band 48 (Full Power)	3552.5-3697.5	-	22.69	20	0.037	1	0.223
	LTE Band 66	1710.7-1779.3	-	27.44	20	0.110	1	0.296
ENDC n7		2507.8-2560.0	-	28.51	20	0.141	1	-
ENDC n7	LTE Band 5	824.7-848.3	25.05	27.20	20	0.104	0.550	0.331
	LTE Band 12	699.7-715.3	25.45	27.60	20	0.114	0.466	0.387
ENDC n12		699.7-715.3	25.56	27.71	20	0.193	0.466	-
ENDC n12	LTE Band 2	1850.7-1909.3	-	27.66	20	0.116	1	0.368
	LTE Band 66	1710.7-1779.3	-	27.47	20	0.111	1	0.363
ENDC n41 (HPUE)		2506.02-2679.99	-	31.21	20	0.263	1	-
ENDC n41		2506.02-2679.99	-	28.90	20	0.154	1	-
ENDC n41	LTE Band 2	1850.7-1909.3	-	27.47	20	0.111	1	0.374
	LTE Band 25	1850.7-1914.3	-	27.47	20	0.111	1	0.374
	LTE Band 26 (Part 22)	824.7-848.3	24.86	27.01	20	0.100	0.550	0.445
	LTE Band 26 (Part 90)	814.7-823.3	24.86	27.01	20	0.100	0.543	0.447
	LTE Band 41 (HPUE)	2498.5-2687.5	-	30.80	20	0.239	1	0.502
	LTE Band 41	2498.5-2687.5	-	28.21	20	0.132	1	0.395
	LTE Band 66	1710.7-1779.3	-	27.46	20	0.111	1	0.374

Function		Frequency Band (MHz)	ERP (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Co-located Ratio<1
ENDC n66		1712.5-1777.9	-	27.67	20	0.116	1	-
ENDC n66	LTE Band 5	824.7-848.3	24.86	27.01	20	0.100	0.550	0.298
	LTE Band 12	699.7-715.3	25.46	27.61	20	0.115	0.466	0.363
	LTE Band 13	779.5-784.5	25.45	27.60	20	0.114	0.520	0.336
	LTE Band 71	665.5-695.5	25.46	27.61	20	0.115	0.444	0.375
	LTE Band 30	2307.5-2312.5	-	23.20	20	0.042	1	0.158
	LTE Band 48 (Per 10M)	3552.5-3697.5	-	22.72	20	0.037	1	0.154
	LTE Band 48 (Full Power)	3552.5-3697.5	-	22.71	20	0.037	1	0.153
ENDC n71		665.5-695.5	25.45	27.60	20	0.114	0.444	-
ENDC n71	LTE Band 2	1850.7-1909.3	-	27.67	20	0.116	1	0.374
	LTE Band 7	2502.5-2567.5	-	28.46	20	0.140	1	0.397
	LTE Band 66	1710.7-1779.3	-	27.47	20	0.111	1	0.369
ENDC n25		1852.5-1912.5	-	29.48	20	0.176	1	-
ENDC n25	LTE Band 12	699.7-715.3	27.30	29.45	20	0.175	1	0.351
ENDC n77 (Part 27O)		3710.01-3969.99	-	29.60	20	0.181	1	-
ENDC n77 (Part 27Q)		3460.02-3540.00	-	29.58	20	0.181	1	-
ENDC n77	LTE Band 2	1850.7-1909.3	-	29.13	20	0.163	1	0.344
	LTE Band 5	824.7-848.3	26.77	28.92	20	0.155	0.550	0.463
	LTE Band 7	2502.5-2567.5	-	30.45	20	0.221	1	0.402
	LTE Band 12	699.7-715.3	27.30	29.45	20	0.175	0.466	0.557
	LTE Band 13	779.5-784.5	27.32	29.47	20	0.176	0.520	0.519
	LTE Band 14	790.5-795.5	27.31	29.46	20	0.176	0.527	0.515
	LTE Band 30	2307.5-2312.5	-	23.93	20	0.049	1	0.230
	LTE Band 41	2498.5-2687.5	-	32.97	20	0.394	1	0.575
	LTE Band 66	1710.7-1779.3	-	29.16	20	0.164	1	0.345

*Part 27Q: n77, n78 (3450-3550MHz)
Part 27O: n77 (3700-3980MHz) / n78 (3700-3800MHz)
*EIRP = ERP + 2.15dB

*Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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