



EVALUATION REPORT

EUT Description	GSM, WCDMA and LTE Cellular adapter card
Brand Name	Intel
Model Name	7262M2WW
FCC/IC ID	FCC ID: PD97262WW / IC ID: 1000M-7262WW
Antenna type	Dipole, Pulse, Part Number SPDA24700/2700
Hardware/Software Version	HW PR2.0, SW 1445
Features	2G: GSM/GPRS/EDGE 850 / 1900 3G: WCDMA/HSPA/DC-HSDPA FDD II / IV / V 4G: LTE-FDD 2, 4, 5, 17 (see section 3)

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Reference Standards	FCC CFR Title 47 Part 1.1310 FCC CFR Title 47 Part 2.1091 (see section 1)
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Test Report number	14112501.TR03
Revision Control	Rev. 00

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1. Standards, reference documents and applicable test methods

1. FCC CFR Title 47 Part 1.1310 – Radiofrequency radiation exposure limits.
2. FCC CFR Title 47 Part 2.1091 – Radiofrequency radiation exposure evaluation: mobile devices.

2. General conditions, competences and guarantees

- ✓ Intel Mobile Communications Wireless RF Lab (Intel WRF Lab) is a laboratory competent to perform this evaluation.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
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3. EUT features

These are the detailed bands and modes supported by the Equipment Under Test:

GSM / GPRS / EDGE	GSM 850 (824.0 – 849.0 MHz) PCS 1900 (1850.0 – 1910.0 MHz)
WCDMA / HSPA+	FDD II (1850.0 – 1910.0 MHz) FDD IV (1710.0 – 1755.0 MHz) FDD V (824.0 – 849.0 MHz)
LTE FDD	Band 2 (1850.0 – 1910.0 MHz) Band 4 (1710.0 – 1755.0 MHz) Band 5 (824.0 – 849.0 MHz) Band 17 (704.0 – 716.0 MHz)

4. Remarks and comments

1. The conducted output power values presented in this report are the corresponding maximum per band and they are taken from reports 14112501.TR01 and 14112501.TR02.

5. Evaluation Verdicts summary

Mode	Band	Highest Power Density @ 20cm (mW/cm ²)	Limit (mW/cm ²)	Verdict
GSM/GPRS/EDGE	GSM 850	0.162	0.558	P
	PCS 1900	0.100	1.000	P
WCDMA/HSPA+	FDD II	0.079	1.000	P
	FDD IV	0.078	1.000	P
	FDD V	0.075	0.557	P
LTE FDD	Band 2	0.056	1.000	P
	Band 4	0.057	1.000	P
	Band 5	0.056	0.558	P
	Band 17	0.056	0.473	P

P: Pass

F: Fail

NM: Not Measured

NA: Not Applicable

6. Document Revision History

Revision #	Date	Modified by	Details
Rev. 00	2015-02-20	J.M. Fortes	First Issue

Annex A. Evaluation Description

A.1.1 RF Exposure Limit

The EUT has been evaluated against the requirement of human Maximum Permissible Exposure (MPE) according to the standards and documents detailed in 1. *Standards, reference documents and applicable test methods.*

As per FCC CFR Title 47 Part 2.1091, a mobile device (i.e. transmitting device designed to be used in such way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons) operating in the services covered by Parts 22, 24, 27 and 90 are subject to RF Exposure evaluation according to the limits defined in FCC CFR Title 47 Part 1.1310, Table 1:

TABLE 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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) 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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

For the purpose of this evaluation, a minimum distance of 20cm was used to calculate the equivalent plan wave power density, to be compared with the power density limit, according to Friis transmission formula:

$$S_{eq} = \frac{P_{avg} \cdot G}{4 \cdot \pi \cdot R^2}$$

Where:

S_{eq} = Equivalent Plane Wave Power Density

P_{avg} = Source-Based Average Power at antenna terminals

G = Gain of the Transmitting Antenna

R = Distance from the Transmitting Antenna

Annex B. Results of RF Exposure Evaluation

B.1 GSM/GPRS/EDGE

B.1.1 GSM 850

Antenna Peak Gain = 2dBi

Mod.	#UL Slots	CH #	Freq [MHz]	Burst Avg Power [dBm]	Frame Avg Power [dBm]	ERP/EIRP Avg [dBm]	ERP/EIRP Avg [mW]	Power density @ 20cm [mW/cm ²]	Limit [mW/cm ²]
GMSK	1	128	824.2	32.55	23.52	25.52	356.38	0.071	0.549
		190	836.6	32.60	23.57	25.57	360.50	0.072	0.558
		251	848.8	32.57	23.54	25.54	358.02	0.071	0.566
	2	128	824.2	32.45	26.43	28.43	696.53	0.139	0.549
		190	836.6	31.77	25.75	27.75	595.58	0.118	0.558
		251	848.8	31.68	25.66	27.66	583.36	0.116	0.566
	3	128	824.2	31.77	27.51	29.51	893.37	0.178	0.549
		190	836.6	31.21	26.95	28.95	785.29	0.156	0.558
		251	848.8	31.19	26.93	28.93	781.68	0.156	0.566
	4	128	824.2	30.11	27.10	29.10	812.77	0.162	0.549
		190	836.6	30.12	27.11	29.11	814.65	0.162	0.558
		251	848.8	29.99	26.98	28.98	790.62	0.157	0.566
8PSK	1	128	824.2	26.39	17.36	19.36	86.28	0.017	0.549
		190	836.6	26.98	17.95	19.95	98.83	0.020	0.558
		251	848.8	27.03	18.00	20.00	99.98	0.020	0.566
	2	128	824.2	27.02	21.00	23.00	199.50	0.040	0.549
		190	836.6	27.04	21.02	23.02	200.42	0.040	0.558
		251	848.8	27.07	21.05	23.05	201.81	0.040	0.566
	3	128	824.2	26.22	21.96	23.96	248.90	0.050	0.549
		190	836.6	26.36	22.10	24.10	257.06	0.051	0.558
		251	848.8	26.28	22.02	24.02	252.37	0.050	0.566
	4	128	824.2	24.95	21.94	23.94	247.73	0.049	0.549
		190	836.6	25.34	22.33	24.33	271.00	0.054	0.558
		251	848.8	25.20	22.19	24.19	262.40	0.052	0.566

$$Frame\ Average\ Power = Burst\ Average\ Power - 10 \cdot \log\left(\frac{1}{\#UL\ Slots/8}\right)$$

B.1.2 PCS 1900

Antenna Peak Gain = 2dBi

Mod.	#UL Slots	CH #	Freq [MHz]	Burst Avg Power [dBm]	Frame Avg Power [dBm]	ERP/EIRP Avg [dBm]	ERP/EIRP Avg [mW]	Power density @ 20cm [mW/cm ²]	Limit [mW/cm ²]
GMSK	1	512	1850.2	29.59	20.56	22.56	180.26	0.036	1.000
		661	1880.0	29.34	20.31	22.31	170.18	0.034	1.000
		810	1909.8	29.37	20.34	22.34	171.36	0.034	1.000
	2	512	1850.2	29.57	23.55	25.55	358.87	0.071	1.000
		661	1880.0	29.30	23.28	25.28	337.24	0.067	1.000
		810	1909.8	29.20	23.18	25.18	329.56	0.066	1.000
	3	512	1850.2	29.06	24.80	26.80	478.66	0.095	1.000
		661	1880.0	28.84	24.58	26.58	455.02	0.091	1.000
		810	1909.8	28.83	24.57	26.57	453.97	0.090	1.000
	4	512	1850.2	28.01	25.00	27.00	501.15	0.100	1.000
		661	1880.0	27.80	24.79	26.79	477.50	0.095	1.000
		810	1909.8	27.95	24.94	26.94	494.28	0.098	1.000
8PSK	1	512	1850.2	25.98	16.95	18.95	78.51	0.016	1.000
		661	1880.0	25.75	16.72	18.72	74.46	0.015	1.000
		810	1909.8	25.75	16.72	18.72	74.46	0.015	1.000
	2	512	1850.2	26.72	20.70	22.70	186.18	0.037	1.000
		661	1880.0	26.55	20.53	22.53	179.04	0.036	1.000
		810	1909.8	26.42	20.40	22.40	173.76	0.035	1.000
	3	512	1850.2	25.88	21.62	23.62	230.16	0.046	1.000
		661	1880.0	25.72	21.46	23.46	221.84	0.044	1.000
		810	1909.8	25.63	21.37	23.37	217.29	0.043	1.000
	4	512	1850.2	24.75	21.74	23.74	236.58	0.047	1.000
		661	1880.0	24.50	21.49	23.49	223.34	0.044	1.000
		810	1909.8	24.45	21.44	23.44	220.79	0.044	1.000

$$Frame\ Average\ Power = Burst\ Average\ Power - 10 \cdot \log\left(\frac{1}{\#UL\ Slots/8}\right)$$

B.2 WCDMA/HSPA+

B.2.1 FDD II

Antenna Peak Gain = 2dBi

Mode	CH #	Freq [MHz]	Avg Power [dBm]	ERP/EIRP Avg [dBm]	ERP/EIRP Avg [mW]	Power density @ 20cm [mW/cm ²]	Limit [mW/cm ²]
RMC	9262	1852.4	24.01	26.01	399.02	0.079	1.000
	9400	1880.0	23.86	25.86	385.48	0.077	1.000
	9538	1907.6	23.87	25.87	386.37	0.077	1.000

B.2.2 FDD IV

Antenna Peak Gain = 2dBi

Mode	CH #	Freq [MHz]	Avg Power [dBm]	ERP/EIRP Avg [dBm]	ERP/EIRP Avg [mW]	Power density @ 20cm [mW/cm ²]	Limit [mW/cm ²]
RMC	1312	1712.4	23.59	25.59	362.24	0.072	1.000
	1413	1732.6	23.96	25.96	394.46	0.078	1.000
	1513	1752.6	23.85	25.85	384.59	0.077	1.000

B.2.3 FDD V

Antenna Peak Gain = 2dBi

Mode	CH #	Freq [MHz]	Avg Power [dBm]	ERP/EIRP Avg [dBm]	ERP/EIRP Avg [mW]	Power density @ 20cm [mW/cm ²]	Limit [mW/cm ²]
RMC	4132	826.4	23.66	25.66	368.13	0.073	0.551
	4180	836.0	23.74	25.74	374.97	0.075	0.557
	4230	846.0	23.63	25.63	365.59	0.073	0.564

B.3 LTE

B.3.1 Band 2

Antenna Peak Gain = 2dBi

Mod.	CH #	Freq [MHz]	Avg Power [dBm]	ERP/EIRP Avg [dBm]	ERP/EIRP Avg [mW]	Power density @ 20cm [mW/cm ²]	Limit [mW/cm ²]
QPSK	18615	1851.5	22.49	24.49	281.19	0.056	1.000
	18900	1880.0	22.40	24.40	275.42	0.055	1.000
	19150	1905.0	22.12	24.12	258.23	0.051	1.000
16QAM	18615	1851.5	21.60	23.60	229.09	0.046	1.000
	18900	1880.0	21.47	23.47	222.33	0.044	1.000
	19185	1908.5	21.36	23.36	216.77	0.043	1.000

B.3.2 Band 4

Antenna Peak Gain = 2dBi

Mod.	CH #	Freq [MHz]	Avg Power [dBm]	ERP/EIRP Avg [dBm]	ERP/EIRP Avg [mW]	Power density @ 20cm [mW/cm ²]	Limit [mW/cm ²]
QPSK	19957	1710.7	22.46	24.46	279.25	0.056	1.000
	20175	1732.5	22.55	24.55	285.10	0.057	1.000
	20385	1753.5	22.54	24.54	284.45	0.057	1.000
16QAM	19965	1711.5	21.68	23.68	233.35	0.046	1.000
	20175	1732.5	21.77	23.77	238.23	0.047	1.000
	20385	1753.5	21.81	23.81	240.44	0.048	1.000

B.3.3 Band 5

Antenna Peak Gain = 2dBi

Mod.	CH #	Freq [MHz]	Avg Power [dBm]	ERP/EIRP Avg [dBm]	ERP/EIRP Avg [mW]	Power density @ 20cm [mW/cm ²]	Limit [mW/cm ²]
QPSK	20407	824.7	22.41	24.41	276.06	0.055	0.550
	20525	836.5	22.47	24.47	279.90	0.056	0.558
	20600	844.0	22.35	24.35	272.27	0.054	0.563
16QAM	20407	824.7	21.68	23.68	233.35	0.046	0.550
	20525	836.5	21.61	23.61	229.61	0.046	0.558
	20635	847.5	21.45	23.45	221.31	0.044	0.565

B.3.4 Band 17

Antenna Peak Gain = 2dBi

Mod.	CH #	Freq [MHz]	Avg Power [dBm]	ERP/EIRP Avg [dBm]	ERP/EIRP Avg [mW]	Power density @ 20cm [mW/cm ²]	Limit [mW/cm ²]
QPSK	23780	709.0	22.52	24.52	283.14	0.056	0.473
	23790	710.0	22.52	24.52	283.14	0.056	0.473
	23800	711.0	22.50	24.50	281.84	0.056	0.474
16QAM	23780	709.0	21.72	23.72	235.50	0.047	0.473
	23790	710.0	21.69	23.69	233.88	0.047	0.473
	23800	711.0	21.67	23.67	232.81	0.046	0.474