



A Test Lab Techno Corp.

Changan Lab : No. 140 -1, Changan Street, Bade City, Taoyuan County, Taiwan R.O.C.
Tel : 886-3-271-0188 / Fax : 886-3-271-0190

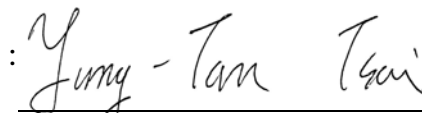


MPE Report

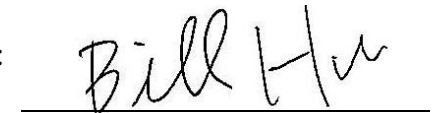
Test Report No.	:	1211FS22-01
Applicant	:	Telit Communications S.p.A.
Manufacturer	:	Telit Communications S.p.A.
Product Type	:	Wireless module
Trade Name	:	Telit
Model Number	:	HE920-NA
Date of Received	:	Nov. 12, 2012
Test Period	:	Nov. 20, 2012 ~ Mar. 14, 2013
Date of Issued	:	Apr. 09, 2013
Test Specification	:	47 CFR § 2.1091 47 CFR §1.1310 ANSI / IEEE Std.C95.1-1992 H46-2/99-237E
Location of Test Lab.	:	Chang-an Lab.

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full. This report shall not be reproduced except in full, without the written approval of A Test Lab Techno Corp.
4. This document may be altered or revised by A Test Lab Techno. Corp. personnel only, and shall be noted in the revision section of the document.

Approved By


(Yung Tan Tsai)

Tested By


(Bill Hu)



Contents

1. Description of Equipment under Test (EUT)	3
2. Human Exposure Assessment.....	4
3. RF Output Power.....	5
4. Test Result.....	10



1. Description of Equipment under Test (EUT)

Applicant	Telit Communications S.p.A.
Applicant Address	Viale Stazione di Prosecco 5/b, Trieste, 34010, Italy
Manufacturer	Telit Communications S.p.A.
Manufacturer Address	Via Stazione di Prosecco, 5/B 34010 Sgonico Italy
Product Type	Wireless module
Trade Name	Telit
Model Number	HE920-NA
FCC ID	RI7HE920NA
IC	5131A-HE920NA
Frequency Range	GSM/GPRS/EGPRS 850: 824.2 - 848.8 MHz PCS/GPRS/EGPRS 1900: 1850.2 - 1909.8 MHz WCDMA(RMC 12.2K)/HSDPA/HSUPA Band II: 1852.4 - 907.6 MHz WCDMA(RMC 12.2K)/HSDPA/HSUPA Band IV: 1712.4 - 1752.6 MHz WCDMA(RMC 12.2K)/HSDPA/HSUPA Band V: 826.4 - 846.6 MHz
Transmit Power (AVG. Conducted Power)	GSM/GPRS/EGPRS 850: 1.919 W / 32.83 dBm PCS/GPRS/EGPRS 1900: 0.800 W / 29.03 dBm WCDMA(RMC 12.2K)/HSDPA/HSUPA Band II: 0.222 W / 23.47 dBm WCDMA(RMC 12.2K)/HSDPA/HSUPA Band IV: 0.243 W / 23.85 dBm WCDMA(RMC 12.2K)/HSDPA/HSUPA Band V: 0.234 W / 23.70 dBm
Antenna Specification	GSM 850: 2.0 dBi PCS 1900: 2.0 dBi WCDMA Band II: 2.0 dBi WCDMA Band IV: 2.0 dBi WCDMA Band V: 2.0 dBi
Antenna Designation	Dipole Antenna
Temperature Range	-30 ~ +70°C

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1091 & 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties



2. Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR §1.1310 titled "Radiofrequency radiation exposure limits", generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as "a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons." This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: "IMPORTANT: To meet the FCC's RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna". Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a "mobile device" as defined in section § 2.1091 paragraph (b).

Exposure evaluation

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

Where

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna.



3. RF Output Power

Band	Data Rate	CH	Frequency (MHz)	Conducted power (dBm)		Worst Case
				Time-Avg.	Avg.-Burst	
GSM 850	1Down1Up Duty Factor 1/8	128	824.2	23.63	32.66	<input type="checkbox"/>
		190	836.6	23.80	32.83	<input checked="" type="checkbox"/>
		251	848.8	23.72	32.75	<input type="checkbox"/>
GPRS 850	4Down1Up Duty Factor 1/8	128	824.2	23.58	32.61	<input type="checkbox"/>
		190	836.6	23.68	32.71	<input checked="" type="checkbox"/>
		251	848.8	23.63	32.66	<input type="checkbox"/>
	3Down2Up Duty Factor 2/8	128	824.2	26.35	32.37	<input type="checkbox"/>
		190	836.6	26.43	32.45	<input type="checkbox"/>
		251	848.8	26.40	32.42	<input type="checkbox"/>
	2Down3Up Duty Factor 3/8	128	824.2	26.80	31.06	<input type="checkbox"/>
		190	836.6	26.90	31.16	<input type="checkbox"/>
		251	848.8	26.83	31.09	<input type="checkbox"/>
	1Down4Up Duty Factor 4/8	128	824.2	26.56	29.57	<input type="checkbox"/>
		190	836.6	26.62	29.63	<input type="checkbox"/>
		251	848.8	26.60	29.61	<input type="checkbox"/>
EGPRS 850	4Down1Up Duty Factor 1/8	128	824.2	17.68	26.71	<input type="checkbox"/>
		190	836.6	17.75	26.78	<input checked="" type="checkbox"/>
		251	848.8	17.71	26.74	<input type="checkbox"/>
	3Down2Up Duty Factor 2/8	128	824.2	20.56	26.58	<input type="checkbox"/>
		190	836.6	20.63	26.65	<input type="checkbox"/>
		251	848.8	20.62	26.64	<input type="checkbox"/>
	2Down3Up Duty Factor 3/8	128	824.2	21.26	25.52	<input type="checkbox"/>
		190	836.6	21.33	25.59	<input type="checkbox"/>
		251	848.8	21.35	25.61	<input type="checkbox"/>
	1Down4Up Duty Factor 4/8	128	824.2	21.41	24.42	<input type="checkbox"/>
		190	836.6	21.44	24.45	<input type="checkbox"/>
		251	848.8	21.46	24.47	<input type="checkbox"/>
DTM 850	GSM+GPRS 2Down3Up Duty Factor 3/8	128	824.2	26.76	31.02	<input type="checkbox"/>
		190	836.6	26.85	31.11	<input checked="" type="checkbox"/>
		251	848.8	26.80	31.06	<input type="checkbox"/>
	GSM+EGPRS 2Down3Up Duty Factor 3/8	128	824.2	21.00	25.26	<input type="checkbox"/>
		190	836.6	21.07	25.33	<input type="checkbox"/>
		251	848.8	21.10	25.36	<input type="checkbox"/>



Band	Data Rate	CH	Frequency (MHz)	Conducted power (dBm)		Worst Case
				Time-Avg.	Avg.-Burst	
PCS1900	1Down1Up Duty Factor 1/8	512	1850.2	20.00	29.03	■
		661	1880.0	19.91	28.94	□
		810	1909.8	19.56	28.59	□
GPRS1900	4Down1Up Duty Factor 1/8	512	1850.2	19.88	28.91	■
		661	1880.0	19.78	28.81	□
		810	1909.8	19.42	28.45	□
	3Down2Up Duty Factor 2/8	512	1850.2	22.71	28.73	□
		661	1880.0	22.59	28.61	□
		810	1909.8	22.29	28.31	□
	2Down3Up Duty Factor 3/8	512	1850.2	23.16	27.42	□
		661	1880.0	23.01	27.27	□
		810	1909.8	23.02	27.28	□
	1Down4Up Duty Factor 4/8	512	1850.2	23.23	26.24	□
		661	1880.0	23.08	26.09	□
		810	1909.8	23.10	26.11	□
EGPRS1900	4Down1Up Duty Factor 1/8	512	1850.2	16.13	25.16	■
		661	1880.0	15.93	24.96	□
		810	1909.8	15.83	24.86	□
	3Down2Up Duty Factor 2/8	512	1850.2	19.01	25.03	□
		661	1880.0	18.79	24.81	□
		810	1909.8	18.74	24.76	□
	2Down3Up Duty Factor 3/8	512	1850.2	19.81	24.07	□
		661	1880.0	19.55	23.81	□
		810	1909.8	19.52	23.78	□
	1Down4Up Duty Factor 4/8	512	1850.2	20.01	23.02	□
		661	1880.0	19.71	22.72	□
		810	1909.8	19.70	22.71	□
DTM 1900	GSM+GPRS 2Down3Up Duty Factor 3/8	512	1850.2	23.00	27.26	■
		661	1880.0	22.87	27.13	□
		810	1909.8	22.93	27.19	□
	GSM+EGPRS 2Down3Up Duty Factor 3/8	512	1850.2	19.70	23.96	□
		661	1880.0	19.56	23.82	□
		810	1909.8	19.48	23.74	□



Band	Date Rate	CH	Frequency (MHz)	Conducted power Avg.-Burst (dBm)	Worst Case
WCDMA Band II	---	9262	1852.4	23.32	<input type="checkbox"/>
		9400	1880.0	23.21	<input type="checkbox"/>
		9538	1907.6	23.47	<input checked="" type="checkbox"/>
HSDPA Band II	1	9262	1852.4	22.27	<input type="checkbox"/>
		9400	1880.0	22.14	<input type="checkbox"/>
		9538	1907.6	22.38	<input type="checkbox"/>
	2	9262	1852.4	22.23	<input type="checkbox"/>
		9400	1880.0	22.10	<input type="checkbox"/>
		9538	1907.6	22.33	<input type="checkbox"/>
	3	9262	1852.4	21.74	<input type="checkbox"/>
		9400	1880.0	21.61	<input type="checkbox"/>
		9538	1907.6	21.86	<input type="checkbox"/>
	4	9262	1852.4	21.71	<input type="checkbox"/>
		9400	1880.0	21.57	<input type="checkbox"/>
		9538	1907.6	21.82	<input type="checkbox"/>
HSUPA Band II	1	9262	1852.4	21.99	<input type="checkbox"/>
		9400	1880.0	21.59	<input type="checkbox"/>
		9538	1907.6	22.16	<input type="checkbox"/>
	2	9262	1852.4	19.98	<input type="checkbox"/>
		9400	1880.0	19.62	<input type="checkbox"/>
		9538	1907.6	20.13	<input type="checkbox"/>
	3	9262	1852.4	21.07	<input type="checkbox"/>
		9400	1880.0	20.59	<input type="checkbox"/>
		9538	1907.6	21.11	<input type="checkbox"/>
	4	9262	1852.4	19.93	<input type="checkbox"/>
		9400	1880.0	19.61	<input type="checkbox"/>
		9538	1907.6	20.25	<input type="checkbox"/>
	5	9262	1852.4	21.98	<input type="checkbox"/>
		9400	1880.0	21.59	<input type="checkbox"/>
		9538	1907.6	22.15	<input type="checkbox"/>



Band	Date Rate	CH	Frequency (MHz)	Conducted power Time-Avg. (dBm)	Worst Case
WCDMA Band IV	---	1312	1712.4	23.73	<input type="checkbox"/>
		1413	1732.6	23.54	<input type="checkbox"/>
		1513	1752.6	23.85	<input checked="" type="checkbox"/>
HSDPA Band IV	1	1312	1712.4	22.82	<input type="checkbox"/>
		1413	1732.6	22.69	<input type="checkbox"/>
		1513	1752.6	23.05	<input type="checkbox"/>
	2	1312	1712.4	22.81	<input type="checkbox"/>
		1413	1732.6	22.71	<input type="checkbox"/>
		1513	1752.6	23.07	<input type="checkbox"/>
	3	1312	1712.4	22.30	<input type="checkbox"/>
		1413	1732.6	22.21	<input type="checkbox"/>
		1513	1752.6	22.52	<input type="checkbox"/>
	4	1312	1712.4	22.32	<input type="checkbox"/>
		1413	1732.6	22.20	<input type="checkbox"/>
		1513	1752.6	22.54	<input type="checkbox"/>
HSUPA Band IV	1	1312	1712.4	22.37	<input type="checkbox"/>
		1413	1732.6	22.32	<input type="checkbox"/>
		1513	1752.6	22.78	<input type="checkbox"/>
	2	1312	1712.4	20.35	<input type="checkbox"/>
		1413	1732.6	20.30	<input type="checkbox"/>
		1513	1752.6	20.76	<input type="checkbox"/>
	3	1312	1712.4	21.36	<input type="checkbox"/>
		1413	1732.6	21.30	<input type="checkbox"/>
		1513	1752.6	21.75	<input type="checkbox"/>
	4	1312	1712.4	20.36	<input type="checkbox"/>
		1413	1732.6	20.30	<input type="checkbox"/>
		1513	1752.6	20.77	<input type="checkbox"/>
	5	1312	1712.4	22.36	<input type="checkbox"/>
		1413	1732.6	22.27	<input type="checkbox"/>
		1513	1752.6	22.74	<input type="checkbox"/>



Band	Date Rate	CH	Frequency (MHz)	Conducted power Avg.-Burst (dBm)	Worst Case
WCDMA Band V	---	4132	826.4	23.68	<input type="checkbox"/>
		4183	836.6	23.70	<input checked="" type="checkbox"/>
		4233	846.4	23.62	<input type="checkbox"/>
HSDPA Band V	1	4132	826.4	22.36	<input type="checkbox"/>
		4183	836.6	22.84	<input type="checkbox"/>
		4233	846.4	22.20	<input type="checkbox"/>
	2	4132	826.4	22.35	<input type="checkbox"/>
		4183	836.6	22.82	<input type="checkbox"/>
		4233	846.4	22.20	<input type="checkbox"/>
	3	4132	826.4	21.87	<input type="checkbox"/>
		4183	836.6	22.36	<input type="checkbox"/>
		4233	846.4	21.72	<input type="checkbox"/>
	4	4132	826.4	21.86	<input type="checkbox"/>
		4183	836.6	22.32	<input type="checkbox"/>
		4233	846.4	21.71	<input type="checkbox"/>
HSUPA Band V	1	4132	826.4	22.29	<input type="checkbox"/>
		4183	836.6	22.31	<input type="checkbox"/>
		4233	846.4	21.68	<input type="checkbox"/>
	2	4132	826.4	20.28	<input type="checkbox"/>
		4183	836.6	20.29	<input type="checkbox"/>
		4233	846.4	19.64	<input type="checkbox"/>
	3	4132	826.4	21.27	<input type="checkbox"/>
		4183	836.6	21.27	<input type="checkbox"/>
		4233	846.4	20.65	<input type="checkbox"/>
	4	4132	826.4	20.28	<input type="checkbox"/>
		4183	836.6	20.30	<input type="checkbox"/>
		4233	846.4	19.64	<input type="checkbox"/>
	5	4132	826.4	22.24	<input type="checkbox"/>
		4183	836.6	22.28	<input type="checkbox"/>
		4233	846.4	21.63	<input type="checkbox"/>



4. Test Result

Band	Data Rate	Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Max tune-up power upper limit) (dBm) [P]	ANT Gain (dBi) [G]	Duty Cycle	[P]+ [G] with Duty cycle (W) [TP]	Power Density (mw/cm ²) [S]	
GSM 850	1Down1Up	824.2	0.549	20	33.00	2.00	0.125	0.395	0.079	
		836.6	0.558	20	33.00	2.00	0.125	0.395	0.079	
		848.8	0.566	20	33.00	2.00	0.125	0.395	0.079	
GPRS 850	4Down1Up	824.2	0.549	20	33.00	2.00	0.125	0.395	0.079	
		836.6	0.558	20	33.00	2.00	0.125	0.395	0.079	
		848.8	0.566	20	33.00	2.00	0.125	0.395	0.079	
	3Down2Up	824.2	0.549	20	33.00	2.00	0.250	0.791	0.157	
		836.6	0.558	20	33.00	2.00	0.250	0.791	0.157	
		848.8	0.566	20	33.00	2.00	0.250	0.791	0.157	
	2Down3Up	824.2	0.549	20	32.00	2.00	0.375	0.942	0.187	
		836.6	0.558	20	32.00	2.00	0.375	0.942	0.187	
		848.8	0.566	20	32.00	2.00	0.375	0.942	0.187	
	1Down4Up	824.2	0.549	20	30.50	2.00	0.500	0.889	0.177	
		836.6	0.558	20	30.50	2.00	0.500	0.889	0.177	
		848.8	0.566	20	30.50	2.00	0.500	0.889	0.177	
	EGPRS 850	4Down1Up	824.2	0.549	20	27.00	2.00	0.125	0.099	0.020
			836.6	0.558	20	27.00	2.00	0.125	0.099	0.020
			848.8	0.566	20	27.00	2.00	0.125	0.099	0.020
3Down2Up		824.2	0.549	20	27.00	2.00	0.250	0.199	0.040	
		836.6	0.558	20	27.00	2.00	0.250	0.199	0.040	
		848.8	0.566	20	27.00	2.00	0.250	0.199	0.040	
2Down3Up		824.2	0.549	20	26.00	2.00	0.375	0.237	0.047	
		836.6	0.558	20	26.00	2.00	0.375	0.237	0.047	
		848.8	0.566	20	26.00	2.00	0.375	0.237	0.047	
1Down4Up		824.2	0.549	20	25.00	2.00	0.500	0.251	0.050	
		836.6	0.558	20	25.00	2.00	0.500	0.251	0.050	
		848.8	0.566	20	25.00	2.00	0.500	0.251	0.050	
DTM 850	GSM+GPRS 2Down3Up	824.2	0.549	20	32.00	2.00	0.375	0.942	0.187	
		836.6	0.558	20	32.00	2.00	0.375	0.942	0.187	
		848.8	0.566	20	32.00	2.00	0.375	0.942	0.187	
	GSM+EGPRS 2Down3Up	824.2	0.549	20	26.00	2.00	0.375	0.237	0.047	
		836.6	0.558	20	26.00	2.00	0.375	0.237	0.047	
		848.8	0.566	20	26.00	2.00	0.375	0.237	0.047	



Band	Data Rate	Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Max tune-up power upper limit) (dBm) [P]	ANT Gain (dBi) [G]	Duty Cycle	[P]+ [G] with Duty cycle (W) [TP]	Power Density (mw/cm ²) [S]
PCS 1900	1Down1Up	1850.2	1.000	20	29.60	2.00	0.125	0.181	0.036
		1880.0	1.000	20	29.60	2.00	0.125	0.181	0.036
		1909.8	1.000	20	29.60	2.00	0.125	0.181	0.036
GPRS 1900	4Down1Up	1850.2	1.000	20	29.40	2.00	0.125	0.173	0.034
		1880.0	1.000	20	29.40	2.00	0.125	0.173	0.034
		1909.8	1.000	20	29.40	2.00	0.125	0.173	0.034
	3Down2Up	1850.2	1.000	20	29.30	2.00	0.250	0.337	0.067
		1880.0	1.000	20	29.30	2.00	0.250	0.337	0.067
		1909.8	1.000	20	29.30	2.00	0.250	0.337	0.067
	2Down3Up	1850.2	1.000	20	28.00	2.00	0.375	0.375	0.075
		1880.0	1.000	20	28.00	2.00	0.375	0.375	0.075
		1909.8	1.000	20	28.00	2.00	0.375	0.375	0.075
	1Down4Up	1850.2	1.000	20	27.00	2.00	0.500	0.397	0.079
		1880.0	1.000	20	27.00	2.00	0.500	0.397	0.079
		1909.8	1.000	20	27.00	2.00	0.500	0.397	0.079
EGPRS 1900	4Down1Up	1850.2	1.000	20	25.80	2.00	0.125	0.075	0.015
		1880.0	1.000	20	25.80	2.00	0.125	0.075	0.015
		1909.8	1.000	20	25.80	2.00	0.125	0.075	0.015
	3Down2Up	1850.2	1.000	20	25.50	2.00	0.250	0.141	0.028
		1880.0	1.000	20	25.50	2.00	0.250	0.141	0.028
		1909.8	1.000	20	25.50	2.00	0.250	0.141	0.028
	2Down3Up	1850.2	1.000	20	24.50	2.00	0.375	0.168	0.033
		1880.0	1.000	20	24.50	2.00	0.375	0.168	0.033
		1909.8	1.000	20	24.50	2.00	0.375	0.168	0.033
	1Down4Up	1850.2	1.000	20	23.50	2.00	0.500	0.177	0.035
		1880.0	1.000	20	23.50	2.00	0.500	0.177	0.035
		1909.8	1.000	20	23.50	2.00	0.500	0.177	0.035
DTM 1900	GSM+GPRS 2Down3Up	1850.2	1.000	20	28.00	2.00	0.375	0.375	0.075
		1880.0	1.000	20	28.00	2.00	0.375	0.375	0.075
		1909.8	1.000	20	28.00	2.00	0.375	0.375	0.075
	GSM+EGPRS 2Down3Up	1850.2	1.000	20	24.50	2.00	0.375	0.168	0.033
		1880.0	1.000	20	24.50	2.00	0.375	0.168	0.033
		1909.8	1.000	20	24.50	2.00	0.375	0.168	0.033



Band	Sub-Test	Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Max tune-up power upper limit) (dBm) [P]	ANT Gain (dBi) [G]	Duty Cycle	[P]+ [G] with Duty cycle (W) [TP]	Power Density (mw/cm ²) [S]
WCDMA Band II	-----	1852.4	1.000	20	24.00	2.00	1.000	0.398	0.079
		1880.0	1.000	20	24.00	2.00	1.000	0.398	0.079
		1907.6	1.000	20	24.00	2.00	1.000	0.398	0.079
WCDMA Band IV	-----	1712.4	1.000	20	24.00	2.00	1.000	0.398	0.079
		1732.6	1.000	20	24.00	2.00	1.000	0.398	0.079
		1752.6	1.000	20	24.00	2.00	1.000	0.398	0.079
WCDMA Band V	-----	826.4	0.551	20	24.00	2.00	1.000	0.398	0.079
		836.6	0.558	20	24.00	2.00	1.000	0.398	0.079
		846.6	0.564	20	24.00	2.00	1.000	0.398	0.079