

FCC Test Report (Part 90 – LTE B14/B26)

Report No.: RFBHKI-WTW-P21120244-3

FCC ID: NKRUMC-MT2731CBN

Test Model: UMC-MT2731CBN

Received Date: Nov. 01, 2021

Test Date: Jan. 17 ~ Feb. 24, 2022

Issued Date: Jun. 09, 2022

Applicant: Wistron NeWeb Corporation

Address: 20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan

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



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.

Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 Summary of Test Results	5
2.1 Measurement Uncertainty	5
2.2 Test Site and Instruments	6
3 General Information	7
3.1 General Description of EUT	7
3.2 Configuration of System under Test	9
3.2.1 Description of Support Units	9
3.3 Test Mode Applicability and Tested Channel Detail	10
3.4 EUT Operating Conditions	13
3.5 General Description of Applied Standards and References	13
4 Test Types and Results	14
4.1 Output Power Measurement	14
4.1.1 Limits of Output Power Measurement	14
4.1.2 Test Procedures	14
4.1.3 Test Setup	14
4.1.4 Test Results	15
4.2 Modulation Characteristics Measurement	27
4.2.1 Limits of Modulation Characteristics	27
4.2.2 Test Procedure	27
4.2.3 Test Setup	27
4.2.4 Test Results	28
4.3 Frequency Stability Measurement	30
4.3.1 Limits of Frequency Stability Measurement	30
4.3.2 Test Procedure	30
4.3.3 Test Setup	30
4.3.4 Test Results	31
4.4 Occupied Bandwidth Measurement	37
4.4.1 Limits of Occupied Bandwidth Measurement	37
4.4.2 Test Procedure	37
4.4.3 Test Setup	37
4.4.4 Test Result	38
4.5 Emission Mask Measurement	44
4.5.1 Limits of Emission Mask Measurement	44
4.5.2 Test Setup	44
4.5.3 Test Procedures	44
4.5.4 Test Results	45
4.6 Conducted Spurious Emissions	54
4.6.1 Limits of Conducted Spurious Emissions Measurement	54
4.6.2 Test Setup	54
4.6.3 Test Procedure	54
4.6.4 Test Results	55
4.7 Radiated Emission Measurement	63
4.7.1 Limits of Radiated Emission Measurement	63
4.7.2 Test Procedure	63
4.7.3 Deviation from Test Standard	63
4.7.4 Test Setup	64
4.7.5 Test Results	65
5 Pictures of Test Arrangements	77
Appendix – Information of the Testing Laboratories	78

Release Control Record

Issue No.	Description	Date Issued
RFBHKI-WTW-P21120244-3	Original release	Jun. 09, 2022

1 Certificate of Conformity

Product: Cellular module

Brand: WNC

Test Model: UMC-MT2731CBN

Sample Status: Engineering sample

Applicant: Wistron NeWeb Corporation

Test Date: Jan. 17 ~ Feb. 24, 2022

Standards: FCC Part 90, Subpart I, S

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 : Celine Chou , **Date:** Jun. 09, 2022
Celine Chou / Senior Specialist

Approved by : Jeremy Lin , **Date:** Jun. 09, 2022
Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 90 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 90.635 (b)	Effective Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement of limit.
2.1055 90.213	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 90.209	Occupied Bandwidth	Pass	Meet the requirement of limit.
90.691	Emission Mask	Pass	Meet the requirement of limit.
2.1051 90.691	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 90.691	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -16.89dB at 1586.00MHz.

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

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	2.93 dB
	200MHz ~ 1000MHz	2.95 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 03, 2021	Dec. 02, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 12, 2021	Apr. 11, 2022
Broadband Horn Antenna SCHWARZBECK	BBHA 9170	148	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 14, 2021	Nov. 13, 2022
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Oct. 28, 2021	Oct. 27, 2022
Fixed Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	Apr. 13, 2021	Apr. 12, 2022
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier EMCI	EMC001340	980201	Sep. 15, 2021	Sep. 14, 2022
Preamplifier EMCI	EMC 012645	980115	Oct. 05, 2021	Oct. 04, 2022
Preamplifier EMCI	EMC 184045	980116	Oct. 05, 2021	Oct. 04, 2022
Preamplifier EMCI	EMC 330H	980112	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable EMCI	EMC104-SM-SM-800 0	171005	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000 (140807)	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 05, 2021	Oct. 04, 2022
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	Jan. 03, 2022	Jan. 02, 2023
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 02, 2021	Jun. 01, 2022
DC power supply Keysight	U8002A	MY56330015	NA	NA
Radio Communication Analyzer Anritsu	MT8821C	6272278310	Jun. 23, 2021	Jun. 22, 2022

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.

3 General Information

3.1 General Description of EUT

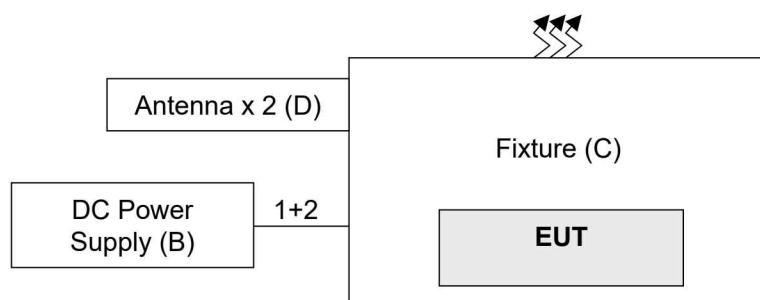
Product	Cellular module			
Brand	WNC			
Test Model	UMC-MT2731CBN			
Sample Status	Engineering sample			
Power Supply Rating	4.0Vdc			
Modulation Type	QPSK, 16QAM, 64QAM			
Operating Frequency	LTE Band 14 (Channel Bandwidth 5MHz)	790.5MHz ~ 795.5MHz		
	LTE Band 14 (Channel Bandwidth 10MHz)	793.0MHz		
	LTE Band 26 (Channel Bandwidth 1.4MHz)	814.7MHz ~ 823.3MHz		
	LTE Band 26 (Channel Bandwidth 3MHz)	815.5MHz ~ 822.5MHz		
	LTE Band 26 (Channel Bandwidth 5MHz)	816.5MHz ~ 821.5MHz		
	LTE Band 26 (Channel Bandwidth 10MHz)	819.0MHz		
Max. ERP Power		QPSK	16QAM	64QAM
	LTE Band 14 (Channel Bandwidth 5MHz)	214.783mW (23.32dBm)	185.780mW (22.69dBm)	153.109mW (21.85dBm)
	LTE Band 14 (Channel Bandwidth 10MHz)	201.372mW (23.04dBm)	185.353mW (22.68dBm)	150.314mW (21.77dBm)
	LTE Band 26 (Channel Bandwidth 1.4MHz)	205.116mW (23.12dBm)	175.388mW (22.44dBm)	136.773mW (21.36dBm)
	LTE Band 26 (Channel Bandwidth 3MHz)	210.378mW (23.23dBm)	181.552mW (22.59dBm)	134.586mW (21.29dBm)
	LTE Band 26 (Channel Bandwidth 5MHz)	202.768mW (23.07dBm)	181.552mW (22.59dBm)	132.130mW (21.21dBm)
	LTE Band 26 (Channel Bandwidth 10MHz)	211.349mW (23.25dBm)	182.390mW (22.61dBm)	134.586mW (21.29dBm)
Emission Designator		QPSK	16QAM	64QAM
	LTE Band 14 (Channel Bandwidth 5MHz)	4M50G7D	4M50D7W	4M50D7W
	LTE Band 14 (Channel Bandwidth 10MHz)	8M98G7D	8M98D7W	8M98D7W
	LTE Band 26 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09D7W	1M09D7W
	LTE Band 26 (Channel Bandwidth 3MHz)	2M69G7D	2M69D7W	2M69D7W
	LTE Band 26 (Channel Bandwidth 5MHz)	4M50G7D	4M49D7W	4M49D7W
	LTE Band 26 (Channel Bandwidth 10MHz)	8M97G7D	8M97D7W	8M97D7W
Antenna Type	Refer to note			
Antenna Connector	Refer to note			
Accessory Device	NA			
Cable Supplied	NA			

Note: The antenna information is listed as below. (For support unit only)

Type	Connector	Gain (dBi)											
		GSM 850	GSM 1900	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	LTE B14	LTE B17	LTE B25	LTE B26	LTE B66
Dipole	SMA	1.82	1.80	1.80	1.57	1.82	2.15	2.02	2.02	2.02	1.80	1.82	1.57

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Configuration of System under Test



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Radio Communication Analyzer	Anritsu	MT8821C	6261806803	NA	-
B.	DC Power Supply	JIN YIH Technology	SP3051	SP30512050388	NA	-
C.	Fixture	NA	NA	NA	NA	Provided by manufacturer
D.	Antenna x 2	WNC	RF21S00802A	NA	NA	Provided by manufacturer

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Power Cable	1	1.8	N	0	-
2.	DC Cable	1	0.12	N	0	-

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	Radiated Emission
LTE Band 14	Z-plane
LTE Band 26	Z-plane

LTE Band 14

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	RB #
-	ERP	23305 to 23355	23305 (790.5MHz), 23330 (793.0MHz), 23355 (795.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1 Half Full
		23330	23330 (793.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1 Half Full
-	Modulation Characteristics	23330	23330 (793.0MHz)	10MHz	QPSK / 16QAM / 64QAM	Full
-	Frequency Stability	23305 to 23355	23305 (790.5MHz), 23355 (795.5MHz)	5MHz	QPSK	Full
		23330	23330 (793.0MHz)	10MHz	QPSK	Full
-	Occupied Bandwidth	23305 to 23355	23305 (790.5MHz), 23330 (793.0MHz), 23355 (795.5MHz)	5MHz	QPSK	Full
		23330	23330 (793.0MHz)	10MHz	QPSK	Full
-	Emission Mask	23305 to 23355	23305 (790.5MHz), 23330 (793.0MHz), 23355 (795.5MHz)	5MHz	QPSK	1 Half Full
		23330	23330 (793.0MHz)	10MHz	QPSK	1 Half Full
-	Conducted Emission	23305 to 23355	23305 (790.5MHz), 23330 (793.0MHz), 23355 (795.5MHz)	5MHz	QPSK	1
		23330	23330 (793.0MHz)	10MHz	QPSK	1
-	Radiated Emission	23305 to 23355	23305 (790.5MHz), 23330 (793.0MHz), 23355 (795.5MHz)	5MHz	QPSK	1
		23330	23330 (793.0MHz)	10MHz	QPSK	1

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521-1 Section 6.6.3.1.4.1, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM, and 64QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under worse mode according to the maximum output power.

LTE Band 26

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	RB #
-	ERP	26697 to 26783	26697 (814.7MHz), 26740 (819.0MHz), 26783 (823.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1 Half Full
		26705 to 26775	26705 (815.5MHz), 26740 (819.0MHz), 26775 (822.5MHz)	3MHz	QPSK / 16QAM / 64QAM	1 Half Full
		26715 to 26765	26715 (816.5MHz), 26740 (819.0MHz), 26765 (821.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1 Half Full
		26740	26740 (819.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1 Half Full
-	Modulation Characteristics	26740	26740 (819.0MHz)	10MHz	QPSK / 16QAM / 64QAM	Full
-	Frequency Stability	26697 to 26783	26697 (814.7MHz), 26783 (823.3MHz)	1.4MHz	QPSK	Full
		26705 to 26775	26705 (815.5MHz), 26775 (822.5MHz)	3MHz	QPSK	Full
		26715 to 26765	26715 (816.5MHz), 26765 (821.5MHz)	5MHz	QPSK	Full
		26740	26740 (819.0MHz)	10MHz	QPSK	Full
-	Occupied Bandwidth	26697 to 26783	26697 (814.7MHz), 26740 (819.0MHz), 26783 (823.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	Full
		26705 to 26775	26705 (815.5MHz), 26740 (819.0MHz), 26775 (822.5MHz)	3MHz	QPSK / 16QAM / 64QAM	Full
		26715 to 26765	26715 (816.5MHz), 26740 (819.0MHz), 26765 (821.5MHz)	5MHz	QPSK / 16QAM / 64QAM	Full
		26740	26740 (819.0MHz)	10MHz	QPSK / 16QAM / 64QAM	Full
-	Emission Masks	26697 to 26783	26697 (814.7MHz), 26783 (823.3MHz)	1.4MHz	QPSK	1 Half Full
		26705 to 26775	26705 (815.5MHz), 26775 (822.5MHz)	3MHz	QPSK	1 Half Full
		26715 to 26765	26715 (816.5MHz), 26765 (821.5MHz)	5MHz	QPSK	1 Half Full
		26740	26740 (819.0MHz)	10MHz	QPSK	1 Half Full

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	RB #
-	Conducted Emission	26697 to 26783	26697 (814.7MHz), 26740 (819.0MHz), 26783 (823.3MHz)	1.4MHz	QPSK	1
		26705 to 26775	26705 (815.5MHz), 26740 (819.0MHz), 26775 (822.5MHz)	3MHz	QPSK	1
		26715 to 26765	26715 (816.5MHz), 26740 (819.0MHz), 26765 (821.5MHz)	5MHz	QPSK	1
		26740	26740 (819.0MHz)	10MHz	QPSK	1
-	Radiated Emission	26697 to 26783	26697 (814.7MHz), 26740 (819.0MHz), 26783 (823.3MHz)	1.4MHz	QPSK	1
		26715 to 26765	26715 (816.5MHz), 26740 (819.0MHz), 26765 (821.5MHz)	5MHz	QPSK	1
		26740	26740 (819.0MHz)	10MHz	QPSK	1

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521-1 Section 6.6.3.1.4.1, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM, and 64QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under worse mode according to the maximum output power.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP	25deg. C, 60%RH	4.0Vdc	James Yang
Modulation characteristics	25deg. C, 60%RH	4.0Vdc	James Yang
Frequency Stability	25deg. C, 60%RH	4.0Vdc	James Yang
Occupied Bandwidth	25deg. C, 60%RH	4.0Vdc	James Yang
Emission Mask	25deg. C, 60%RH	4.0Vdc	James Yang
Conducted Emission	25deg. C, 60%RH	4.0Vdc	James Yang
Radiated Emission	22deg. C, 64%RH	4.0Vdc	Vincent Chen

3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test Standard:

FCC 47 CFR Part 2

FCC 47 CFR Part 90

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

All test items have been performed and recorded as per the above standards.

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

KDB 971168 D02 Misc Rev Approv License Devices v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

For LTE Band 14:

Control stations and mobile stations transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 30 watts ERP. Portable stations (hand-held devices) transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 3 watts ERP.

For LTE Band 26:

The output power shall be according to the specific rule Part 90.635 that "Mobile station are limited to 100 watts e.r.p".

4.1.2 Test Procedures

Conducted Power Measurement:

The EUT was set up for the maximum power with LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\text{EIRP} = P_{\text{Meas}} + G_T$$

$$\text{ERP} = P_{\text{Meas}} + G_T - 2.15$$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively
(expressed in the same units as P_{Meas} , e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

4.1.3 Test Setup

Conducted Power Measurement:



4.1.4 Test Results

Conducted Output Power (dBm)

LTE Band 14				
BW	MCS Index	RB Size	RB Offset	Mid
		Channel		23330
		Frequency (MHz)		793
10M	QPSK	1	0	23.16
		1	24	23.17
		1	49	23.07
		25	0	22.05
		25	12	22.67
		25	25	22.03
		50	0	22.58
10M	16QAM	1	0	22.32
		1	24	22.81
		1	49	22.54
		25	0	21.37
		25	12	21.50
		25	25	21.43
		50	0	21.28
10M	64QAM	1	0	21.39
		1	24	21.90
		1	49	21.04
		25	0	20.38
		25	12	20.55
		25	25	20.23
		50	0	20.30

LTE Band 14						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23305	23330	23355
		Frequency (MHz)		790.5	793	795.5
5M	QPSK	1	0	23.12	23.00	22.95
		1	12	23.45	23.28	23.31
		1	24	23.16	23.12	22.94
		12	0	22.33	22.61	22.56
		12	6	22.38	22.67	22.61
		12	13	22.32	22.34	22.14
		25	0	22.30	22.33	22.31
5M	16QAM	1	0	22.34	22.06	22.38
		1	12	22.68	22.57	22.82
		1	24	22.50	22.54	22.22
		12	0	21.38	21.65	21.17
		12	6	21.36	21.12	21.39
		12	13	21.35	21.39	21.40
		25	0	21.25	21.39	21.19
5M	64QAM	1	0	21.31	21.25	21.53
		1	12	21.79	21.79	21.98
		1	24	21.34	21.13	21.63
		12	0	20.33	20.53	20.18
		12	6	20.34	20.05	20.42
		12	13	20.22	20.37	19.96
		25	0	20.27	20.23	19.99

LTE Band 26				
BW	MCS Index	RB Size	RB Offset	Mid
		Channel		26740
		Frequency (MHz)		819
10M	QPSK	1	0	23.45
		1	24	23.58
		1	49	23.30
		25	0	22.37
		25	12	22.39
		25	25	22.16
		50	0	22.31
10M	16QAM	1	0	22.40
		1	24	22.94
		1	49	22.35
		25	0	21.43
		25	12	21.04
		25	25	20.98
		50	0	21.40
10M	64QAM	1	0	21.26
		1	24	21.38
		1	49	21.62
		25	0	20.01
		25	12	20.47
		25	25	20.00
		50	0	20.33

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26715	26740	26765
		Frequency (MHz)		816.5	819	821.5
5M	QPSK	1	0	23.37	23.26	23.23
		1	12	23.37	23.23	23.40
		1	24	23.34	23.07	23.08
		12	0	22.46	22.38	22.04
		12	6	22.27	22.24	22.16
		12	13	22.10	22.13	22.00
		25	0	22.43	22.51	22.35
5M	16QAM	1	0	22.77	22.31	22.65
		1	12	22.92	22.88	22.75
		1	24	22.59	22.42	22.36
		12	0	21.30	21.03	21.49
		12	6	21.57	21.12	21.45
		12	13	21.06	21.48	21.36
		25	0	21.31	21.03	21.15
5M	64QAM	1	0	21.54	21.11	21.17
		1	12	21.43	21.43	21.41
		1	24	21.23	21.45	21.21
		12	0	20.51	20.43	20.10
		12	6	20.16	20.28	20.19
		12	13	20.38	20.37	20.28
		25	0	20.28	20.31	20.36

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26705	26740	26775
		Frequency (MHz)		815.5	819	822.5
3M	QPSK	1	0	23.45	22.90	22.93
		1	7	23.45	23.56	23.09
		1	14	22.91	22.99	23.16
		8	0	22.04	22.58	22.05
		8	3	22.43	22.25	22.35
		8	7	22.25	22.44	22.48
		15	0	22.00	22.50	22.01
3M	16QAM	1	0	22.27	22.68	22.19
		1	7	22.92	22.82	22.45
		1	14	22.57	22.42	22.66
		8	0	21.36	21.29	21.29
		8	3	21.24	21.40	21.19
		8	7	21.04	21.04	21.07
		15	0	21.08	21.27	21.36
3M	64QAM	1	0	21.28	21.48	21.38
		1	7	21.49	21.47	21.41
		1	14	21.19	21.07	21.62
		8	0	20.59	20.26	20.51
		8	3	19.96	20.22	20.35
		8	7	20.30	20.34	20.29
		15	0	20.08	20.10	20.02

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26697	26740	26783
		Frequency (MHz)		814.7	819	823.3
1.4M	QPSK	1	0	23.09	23.29	23.41
		1	2	23.14	23.45	23.12
		1	5	22.76	23.13	23.31
		3	0	22.08	22.49	22.04
		3	1	22.52	22.59	22.19
		3	3	22.21	22.07	22.32
		6	0	22.32	22.15	22.28
1.4M	16QAM	1	0	22.77	22.70	22.38
		1	2	22.68	22.74	22.46
		1	5	22.50	22.63	22.46
		3	0	21.18	21.17	21.10
		3	1	21.35	21.34	21.29
		3	3	21.12	21.34	21.03
		6	0	21.02	21.48	21.30
1.4M	64QAM	1	0	21.13	21.15	21.45
		1	2	21.64	21.69	21.58
		1	5	21.33	21.45	21.34
		3	0	20.24	20.59	20.49
		3	1	20.52	19.96	20.41
		3	3	20.15	20.10	20.22
		6	0	20.24	20.50	20.29

ERP Power (dBm)

LTE Band 14				
BW	MCS Index	RB Size	RB Offset	Mid
		Channel		23330
		Frequency (MHz)		793
10M	QPSK	1	0	23.03
		1	24	23.04
		1	49	22.94
		25	0	21.92
		25	12	22.54
		25	25	21.90
		50	0	22.45
10M	16QAM	1	0	22.19
		1	24	22.68
		1	49	22.41
		25	0	21.24
		25	12	21.37
		25	25	21.30
		50	0	21.15
10M	64QAM	1	0	21.26
		1	24	21.77
		1	49	20.91
		25	0	20.25
		25	12	20.42
		25	25	20.10
		50	0	20.17

*ERP = Conducted + antenna gain (2.02dBi) - 2.15