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# Appendix B

LTE-NB1 BAND26(824MHz-849MHz)

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### 1 Effective (Isotropic) Radiated Power Output Data

Test Band	Test Mode	Sub-carrier Spacing (kHz)	Test channel	Number of T	Measured (dBm)	ERP (dBm)	limit (dBm)	Verdict
			LCH	1T0	22.85	19.3	38.45	PASS
				1T47	22.88	19.33	38.45	PASS
	TM1	3.75	MCH HCH	1T0	22.91	19.36	38.45	PASS
	I IVI I	3.75		1T47	22.82	19.27	38.45	PASS
				1T0	22.81	19.26	38.45	PASS
BAND26				1T47	22.76	19.21	38.45	PASS
DANDZO			LCH	1T0	22.71	19.16	38.45	PASS
			LCH	1T47	22.72	19.17	38.45	PASS
	TM2	3.75	МСН	1T0	22.78	19.23	38.45	PASS
		5.75		1T47	22.77	19.22	38.45	PASS
			НСН	1T0	22.84	19.29	38.45	PASS
				1T47	22.72	19.17	38.45	PASS

Test Band	Test Mode	Sub-carrier Spacin (kHz)	Test channel	Number of T	Measured (dBm)	ERP (dBm)	limit (dBm)	Verdict
			LCH	1T0	22.88	19.33	38.45	PASS
			LON	1T11	22.75	19.2	38.45	PASS
	TM1	15	MCH	1T0	23.32	19.77	38.45	PASS
	1 171 1	15		1T11	23.29	19.74	38.45	PASS
			НСН	1T0	22.88	19.33	38.45	PASS
				1T11	22.91	19.36	38.45	PASS
			LCH	1T0	22.91	19.36	38.45	PASS
BAND26				1T11	22.84	19.29	38.45	PASS
				12T0	21.15	17.6	38.45	PASS
				1T0	23.27	19.72	38.45	PASS
	TM2	15	MCH	1T11	23.34	19.79	38.45	PASS
				12T0	21.45	17.9	38.45	PASS
				1T0	22.95	19.4	38.45	PASS
			HCH	1T11	23	19.45	38.45	PASS
				12T0	21.26	17.71	38.45	PASS

Note:

a: For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should be taken to calculate it,

ERP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBd] b: SGP=Signal Generator Level



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### 2 Peak-to-Average Ratio

#### Part I - Test Results

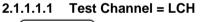
Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
		LCH	4.67	13	PASS
	TM1/1T	MCH	4.70	13	PASS
		НСН	4.72	13	PASS
	TM2/1T	LCH	4.70	13	PASS
BAND26		MCH	4.20	13	PASS
		НСН	4.72	13	PASS
		LCH	3.10	13	PASS
	TM2/Full T	MCH	3.36	13	PASS
		НСН	3.94	13	PASS

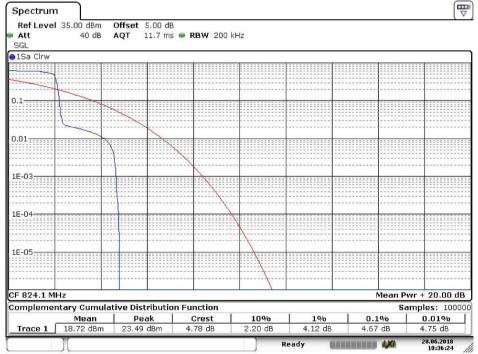
#### Part II - Test Plots

### 2.1 For LTE-NB1

### 2.1.1 Test Band = LTE-NB1 BAND26(824MHz-849MHz)

#### 2.1.1.1 Test Mode = LTE-NB1/TM1.Sub-carrier spacing=15kHz.T size=1T0

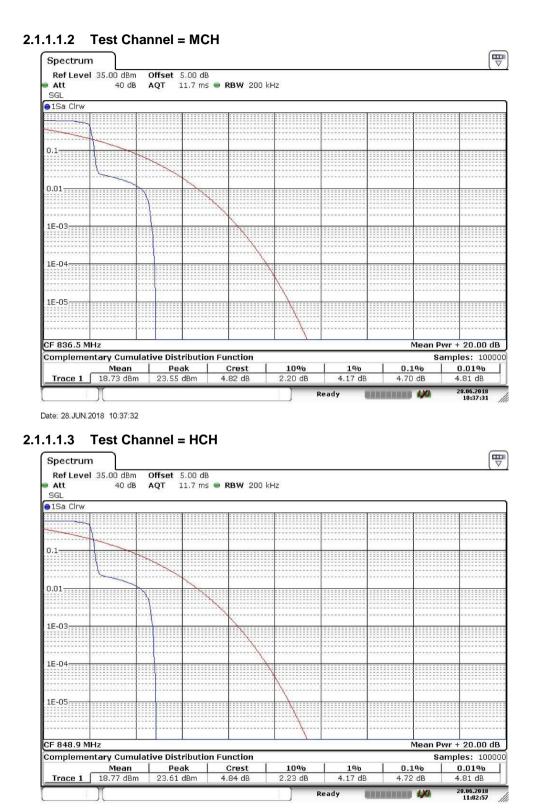




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#### 2.1.1.2.1 Test Channel = LCH Spectrum Ref Level 35.00 dBm Offset 5.00 dB Att 40 dB AQT 11.7 ms 👄 RBW 200 kHz SGL ●1Sa Clrw 0.1 0.01 1E-03 1E-04-1E-05: CF 824.1 MHz Mean Pwr + 20.00 dB Samples: 100000 **Complementary Cumulative Distribution Function** Mean Peak Crest 10% **1%** 3.97 dB 0.1% 0.01% 23.05 dBm 18.20 dBm 2.70 dB Trace 1 4.85 dB 4.70 dB 4.81 dB 28.06.2018 Ready 1X 10:35:21 Date: 28.JUN.2018 10:35:22 2.1.1.2.2 Test Channel = MCH



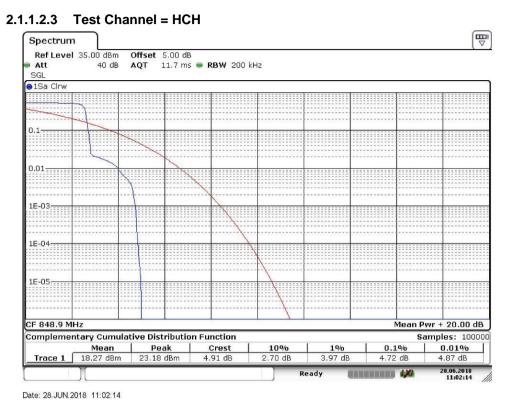
Date: 28.JUN.2018 10:37:56

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2.1.1.2 Test Mode = LTE-NB1/TM2.Sub-carrier spacing=15kHz.T size=1T0

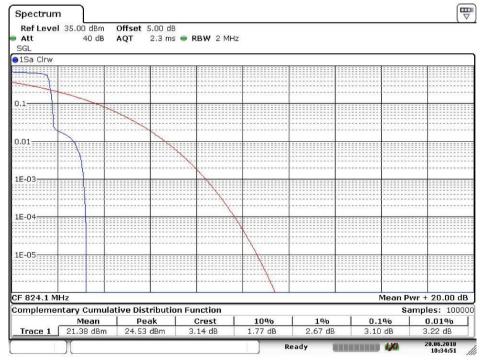


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#### 2.1.1.3 Test Mode = LTE-NB1/TM2.Sub-carrier spacing=15kHz.T size=12T0

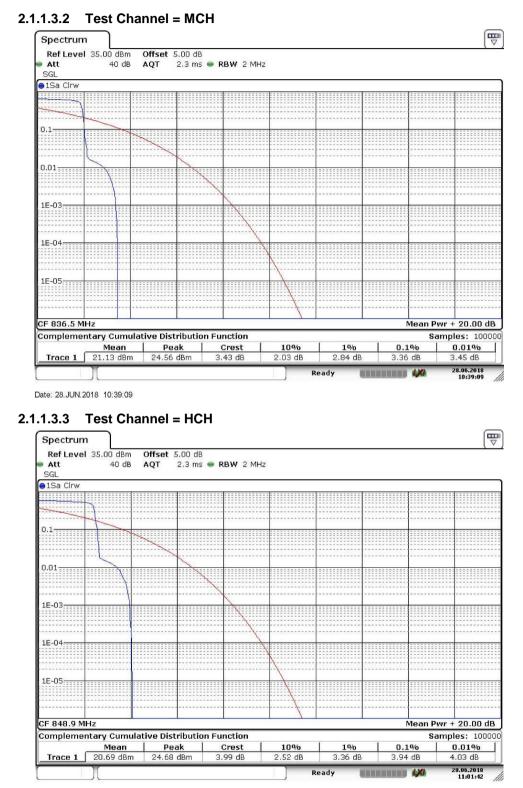
#### 2.1.1.3.1 Test Channel = LCH



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### **3 Modulation Characteristics**

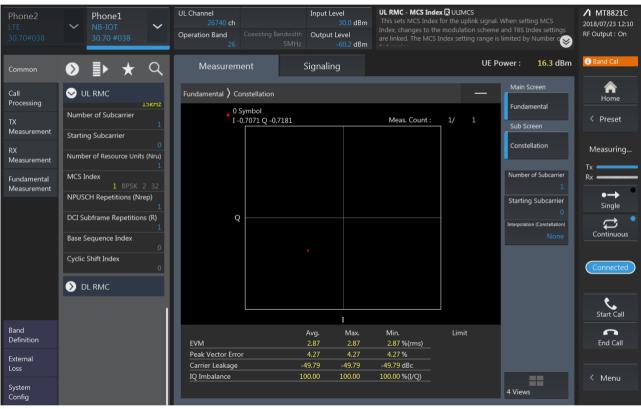
Part I - Test Plots

### 3.1 For LTE-NB1

#### 3.1.1 Test Band = LTE-NB1 BAND26(824MHz-849MHz)

3.1.1.1 Test Mode = LTE-NB1/TM1.Sub-carrier spacing=15kHz.T size=1T0

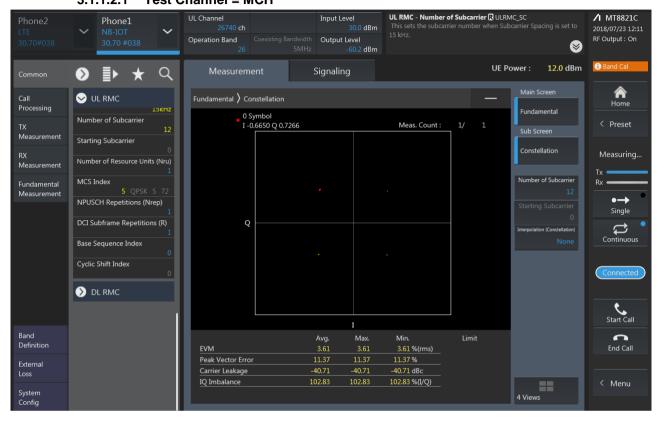
#### 3.1.1.1.1 Test Channel = MCH





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#### 3.1.1.2 Test Mode = LTE-NB1/TM2.Sub-carrier spacing=15kHz.T size=12T0 3.1.1.2.1 Test Channel = MCH





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### 4 Bandwidth

#### Part I - Test Results

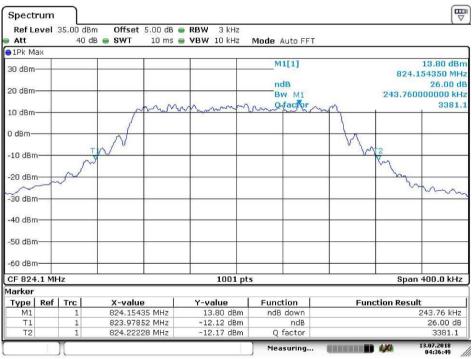
Test Band	Test Mode	Test Channel	Occupied Bandwidth [kHz]	Emission Bandwidth [kHz]	Verdict
		LCH	185.01	243.76	PASS
Band 13	TM2/15kHz	MCH	185.01	243.76	PASS
		HCH	185.01	243.36	PASS

### 4.1 For LTE-NB1

### 4.1.1 Test Band = LTE-NB1 BAND26(824MHz-849MHz)

### 4.1.1.1 Test Mode = LTE-NB1/TM2.Sub-carrier spacing=15kHz.T size=12T0

#### 4.1.1.1.1 Test Channel = LCH



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Date: 13.JUL.2018 04:37:11

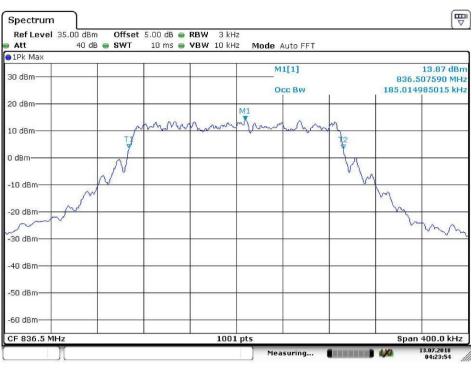
#### 4.1.1.1.2 Test Channel = MCH



Date: 13.JUL.2018 04:24:21



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Date: 13.JUL.2018 04:23:54

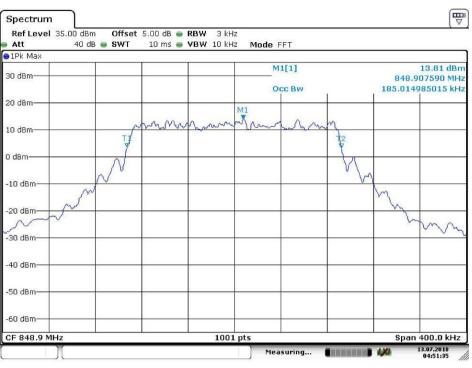
#### 4.1.1.1.3 Test Channel = HCH



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### 5 Band Edges Compliance

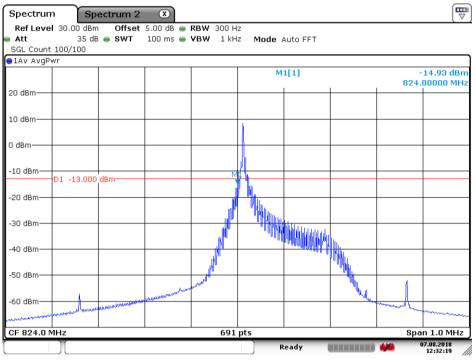
### 5.1 For LTE-NB1

### 5.1.1 Test Band = LTE-NB1 BAND26(824MHz-849MHz)

#### 5.1.1.1 Test Mode = LTE-NB1/TM1.Sub-carrier spacing=3.75kHz

#### 5.1.1.1.1 Test Channel = LCH

#### 5.1.1.1.1.1 Test T size=1T

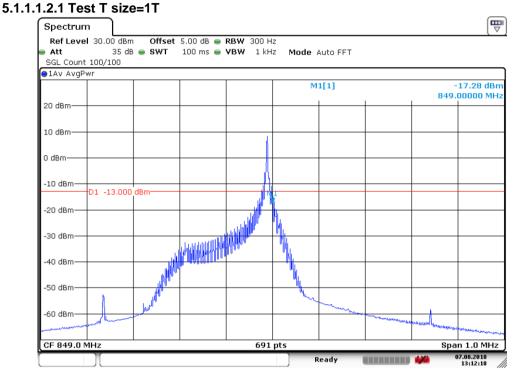


Date: 7.AUG.2018 12:32:20



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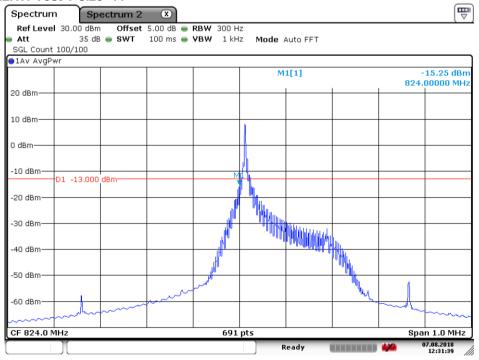
#### 5.1.1.1.2 Test Channel = HCH



Date: 7.AUG.2018 13:12:19

#### 5.1.1.2 Test Mode = LTE-NB1/TM2.Sub-carrier spacing=3.75kHz 5.1.1.2.1 Test Channel = LCH

#### 5.1.1.2.1.1 Test T size=1T



Date: 7.AUG.2018 12:31:39



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**T** 

~~~~

Span 1.0 MHz

07.08.2018 13:11:13

#### 5.1.1.2.2.1 Test T size=1T Spectrum Ref Level 30.00 dBm Offset 5.00 dB 👄 RBW 300 Hz 35 dB 👄 SWT 100 ms 👄 VBW 1 kHz Att Mode Auto FFT SGL Count 100/100 ●1Av AvaPwr M1[1] -16.80 dBm 849.00000 MHz 20 dBm-10 dBm-0 dBm--10 dBm-D1 -13.000 dBm--20 dBm -30 dBm -40 dBm·

#### 5.1.1.2.2 Test Channel = HCH

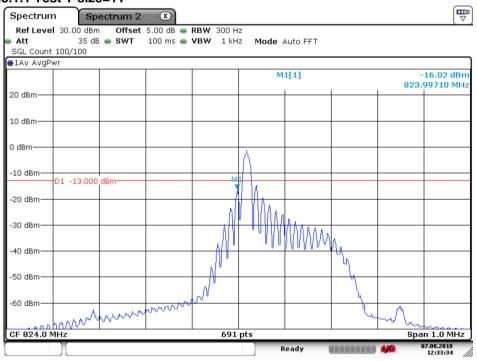
Date: 7.AUG.2018 13:11:13

CF 849.0 MHz

-50 dBm--60 dBm-~~^

#### 5.1.1.3 Test Mode = LTE-NB1/TM1.Sub-carrier spacing=15kHz 5.1.1.3.1 Test Channel = LCH

#### 5.1.1.3.1.1 Test T size=1T



691 pts

Ready

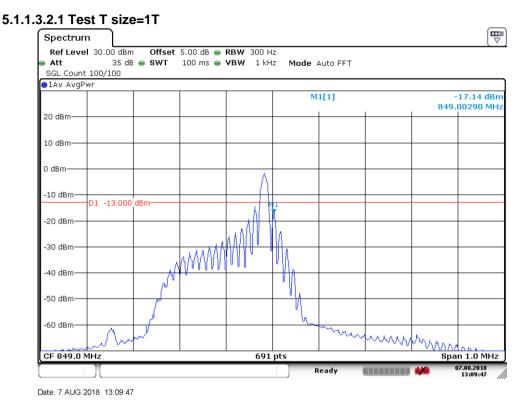
Date: 7.AUG.2018 12:33:35

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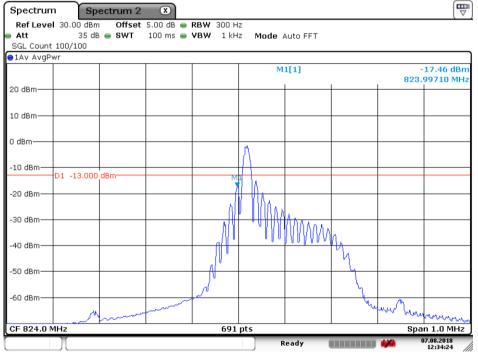
#### 5.1.1.3.2 Test Channel = HCH



### 5.1.1.4 Test Mode = LTE-NB1/TM2.Sub-carrier spacing=15kHz

### 5.1.1.4.1 Test Channel = LCH

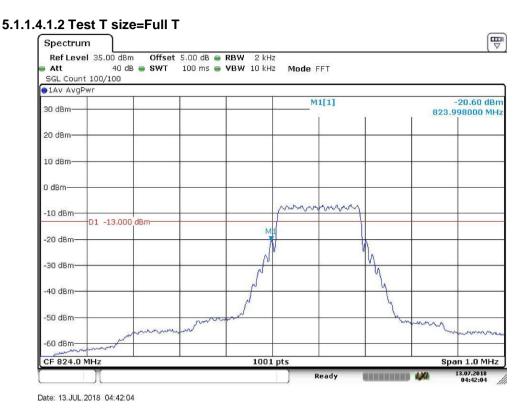




Date: 7.AUG.2018 12:34:25



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#### 5.1.1.4.2 Test Channel = HCH

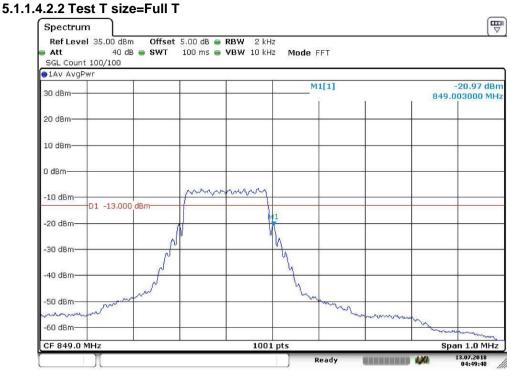
#### 5.1.1.4.2.1 Test T size=1T



Date: 7.AUG.2018 13:08:05



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### 6 Spurious Emission at Antenna Terminal

NOTE1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of < RBW/2 so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = k \* (Span / RBW)" with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

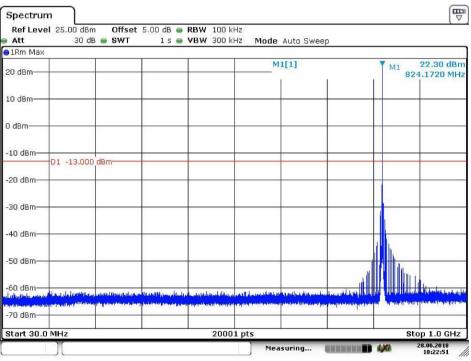
NOTE2: only the worst case data displayed in this report.

Part I - Test Plots

### 6.1 For LTE-NB1

#### 6.1.1 Test Band = LTE-NB1 BAND26(824MHz-849MHz)

#### 6.1.1.1 Test Mode = LTE-NB1/TM1.Sub-carrier spacing=3.75kHz

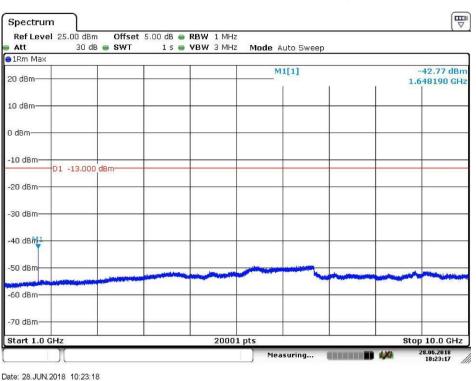


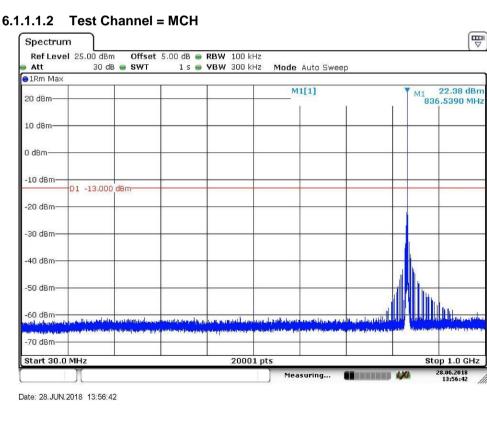
### 6.1.1.1.1 Test Channel = LCH

Date: 28.JUN.2018 10:22:51



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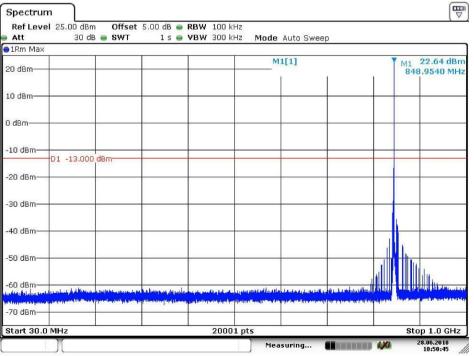


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Spectrum Ref Level 25.00 dBm Offset 5.00 dB 📾 RBW 1 MHz Att 30 dB 👄 SWT 1 s 👄 VBW 3 MHz 🛛 Mode Auto Sweep ●1Rm Max M1[1] 43.12 dBm 20 dBm 1.672940 GH 10 dBm-0 dBm -10 dBm-D1 -13.000 dBm -20 dBm--30 dBm -40 dBm1 -50 dBm -60 dBm -70 dBm-20001 pts Start 1.0 GHz Stop 10.0 GHz 28.06.2018 Measuring... LXI an an an an an an an an a

Date: 28.JUN.2018 10:48:03

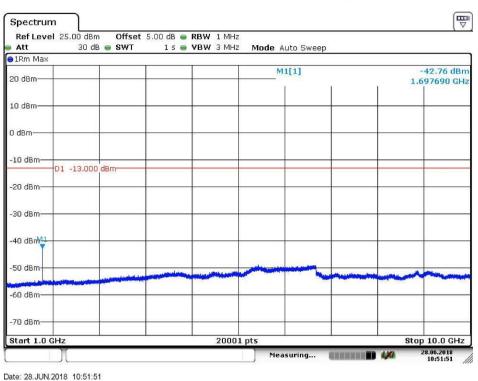
#### 6.1.1.1.3 Test Channel = HCH



Date: 28.JUN.2018 10:50:46

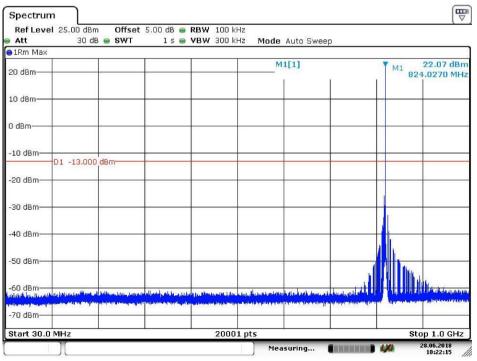


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#### 6.1.1.2 Test Mode = LTE-NB1/TM2.Sub-carrier spacing=3.75kHz

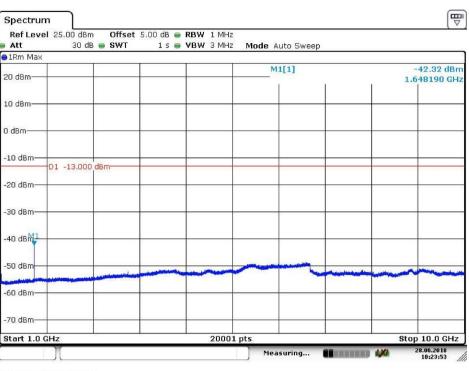




Date: 28.JUN.2018 10:22:15

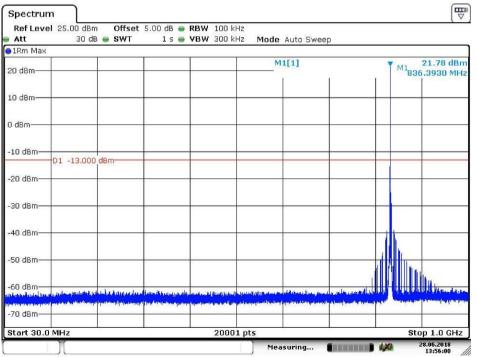


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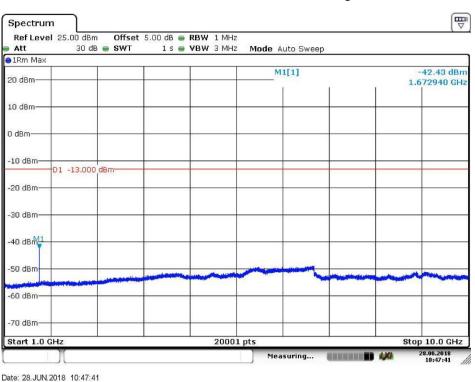
#### 6.1.1.2.2 Test Channel = MCH



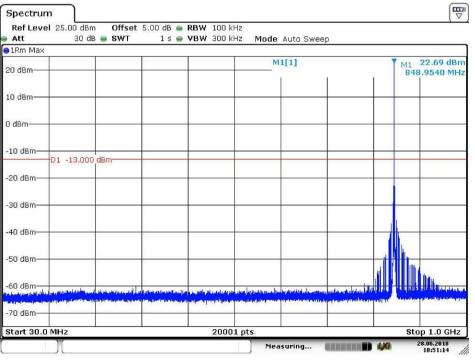
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#### 6.1.1.2.3 Test Channel = HCH



Date: 28.JUN.2018 10:51:14

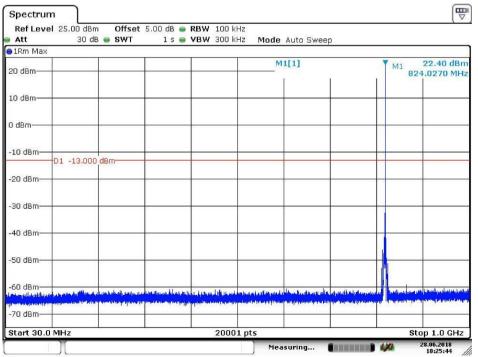


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Spectrum Ref Level 25.00 dBm Offset 5.00 dB 📾 RBW 1 MHz Att 30 dB 👄 SWT 1 s 👄 VBW 3 MHz 🛛 Mode Auto Sweep ●1Rm Max M1[1] 42.84 dBm 20 dBm 1.697690 GH 10 dBm-0 dBm -10 dBm-D1 -13.000 dBm -20 dBm--30 dBm -40 dBm -50 dBm -60 dBm -70 dBm-20001 pts Start 1.0 GHz Stop 10.0 GHz Measuring... 28.06.2018 an an an an an an an an a LXI Date: 28.JUN.2018 10:51:32

#### 6.1.1.3 Test Mode = LTE-NB1/TM1.Sub-carrier spacing=15kHz

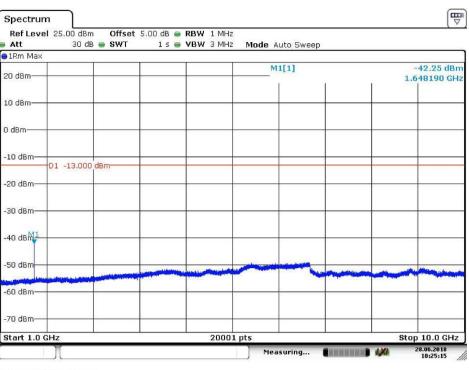




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Date: 28.JUN.2018 10:25:15

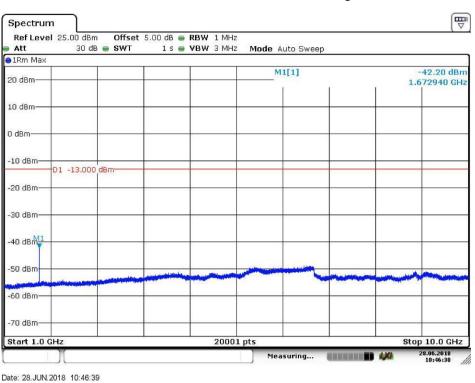
#### 6.1.1.3.2 Test Channel = MCH

| Att     | 30 dB                                       | SWT                                      | 1 s 👄                     | <b>VBW</b> 300 k                                                                                                 | Hz Mode                                                                                                        | Auto Sweep                         | )                     |        |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------|---------------------------------------------|------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------|--------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1Rm Max |                                             |                                          |                           |                                                                                                                  |                                                                                                                |                                    |                       |        |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 20 dBm  |                                             |                                          |                           |                                                                                                                  | M                                                                                                              | 1[1]                               |                       | ,      | M1<br>830           | 21.84 dBm<br>6.4420 MHz<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 10 dBm  |                                             |                                          |                           |                                                                                                                  |                                                                                                                |                                    |                       |        | N]                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ) dBm   |                                             |                                          |                           |                                                                                                                  |                                                                                                                |                                    |                       |        |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -10 dBm | D1 -13.000                                  | dBm                                      | -                         |                                                                                                                  |                                                                                                                |                                    |                       |        |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 20 dBm  |                                             | pre-162.                                 |                           |                                                                                                                  | -                                                                                                              | -                                  |                       |        |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -30 dBm |                                             | 13                                       |                           |                                                                                                                  |                                                                                                                |                                    |                       |        | 4                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -40 dBm |                                             | 6                                        |                           |                                                                                                                  |                                                                                                                |                                    |                       |        |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -50 dBm |                                             | 99                                       |                           |                                                                                                                  |                                                                                                                |                                    |                       |        |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -60 dBm | langu kanan Aladam k                        | 1. Alle such a fire party                | ally had all it. I. and i | h of defilies and and a                                                                                          | and front and the                                                                                              | الدر المالينية عن <mark>الم</mark> | م الرالي (الروميسان   | hand   | Such and the second | the different start of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 70 dBm  | <mark>a line yezhoù ze ( line) eo de</mark> | an a | ana gana mana matang      | and the second | a and the second se | d laporen estánte                  | -treasures (Distance) | Presil | 1. Allertonia       | and a second state of the |

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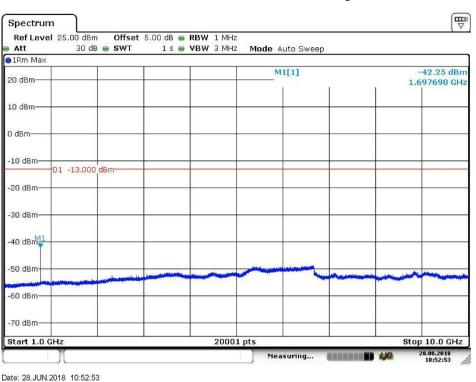
#### 6.1.1.3.3 Test Channel = HCH

| Att     | 30 dE                     | B 🗑 SWT                                                                                                         | 1 s 👄                        | <b>VBW</b> 300 k                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Hz Mode                                   | Auto Sweep                               | )                    |                  |                                                                                                                  |
|---------|---------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------|----------------------|------------------|------------------------------------------------------------------------------------------------------------------|
| 1Rm Max |                           |                                                                                                                 |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                           |                                          |                      |                  |                                                                                                                  |
| 0 dBm   |                           |                                                                                                                 |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | M                                         | 1[1]                                     |                      | M                | 1 22.18 dBm<br>348.8090 MHz                                                                                      |
| 0 dBm   |                           |                                                                                                                 |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                           |                                          |                      |                  |                                                                                                                  |
| dBm     |                           |                                                                                                                 |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                           |                                          |                      |                  |                                                                                                                  |
| 10 dBm  | D1 -13.000                | ) dBm                                                                                                           | °                            | [                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                          |                      |                  |                                                                                                                  |
| 20 dBm  |                           |                                                                                                                 |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4                                         |                                          |                      |                  |                                                                                                                  |
| 30 dBm  |                           | 25                                                                                                              |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                           | S                                        |                      |                  | _                                                                                                                |
| 40 dBm  |                           | 7                                                                                                               | -                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                           |                                          |                      |                  |                                                                                                                  |
| 50 dBm  |                           | 72                                                                                                              |                              | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                          |                      |                  |                                                                                                                  |
| 50 dBm  |                           |                                                                                                                 |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                           |                                          |                      |                  | un der Haussellen der Staten der Sterne                                                                          |
| 70 dBm  | and all the second second | and the state of the | and the High State Party and | a the particular sector of the | teriliperingeligt <sup>an</sup> ingetiete | ang pang pang pang pang pang pang pang p | pedipension di Alama | phage def ballen | and the second |

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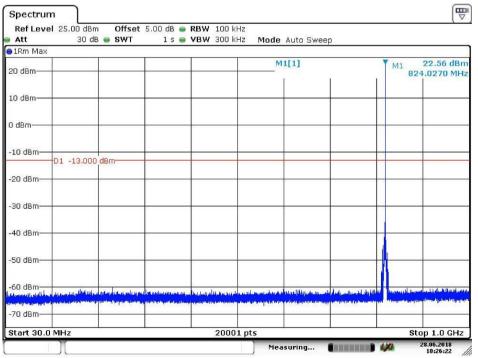


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#### 6.1.1.4 Test Mode = LTE-NB1/TM2.Sub-carrier spacing=15kHz

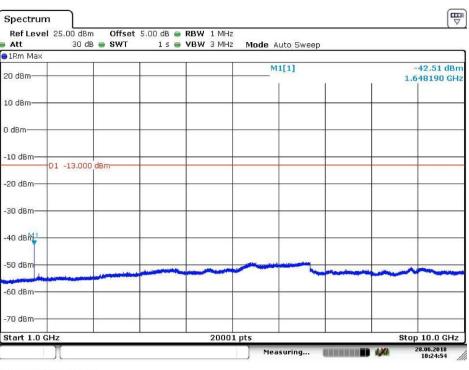




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#### Date: 28.JUN.2018 10:24:54

#### 6.1.1.4.2 Test Channel = MCH

| Ref Level<br>Att | l 25.00 dBm<br>30 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Offset                                                                                                         | 5.00 dB 👄<br>1 s 👄            | RBW 100 k<br>VBW 300 k     |                              | Auto Swee                                                                                                        | n                                                                                                               |       |                           |                                    |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------|---------------------------|------------------------------------|
| 1Rm Max          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                |                               |                            | 17.02                        |                                                                                                                  | E                                                                                                               |       |                           |                                    |
| 20 dBm           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                |                               |                            | M                            | 1[1]                                                                                                             | r i                                                                                                             |       |                           | 22.12 dBm<br>5.4420 MHz            |
| 10 dBm           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                |                               |                            |                              |                                                                                                                  |                                                                                                                 |       |                           |                                    |
| D dBm            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                |                               | ·                          |                              |                                                                                                                  |                                                                                                                 |       |                           |                                    |
| -10 dBm          | D1 -13.000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | dBm                                                                                                            |                               | [                          |                              |                                                                                                                  |                                                                                                                 |       |                           |                                    |
| -20 dBm          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5.                                                                                                             |                               |                            | 1                            |                                                                                                                  |                                                                                                                 |       |                           |                                    |
| -30 dBm          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 13                                                                                                             |                               |                            |                              |                                                                                                                  |                                                                                                                 |       |                           |                                    |
| -40 dBm          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | %                                                                                                              |                               |                            |                              |                                                                                                                  |                                                                                                                 |       |                           |                                    |
| -50 dBm          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 99                                                                                                             |                               | 0                          |                              |                                                                                                                  |                                                                                                                 | _     |                           |                                    |
| -60 dBm          | la de la calencia de la c | والمراجع المتركب والمحال                                                                                       | يول فرك فر و روانين ورواني ال | here fit de tit han som    | te and the lot of the sector | and the state of the second                                                                                      | adaon al mark lassed it                                                                                         |       | Information for           | in the second second second second |
| -70 dBm          | ferbelen et an been                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | and growing and the second | agester source 1              | and a second second second | and from the second          | and the second | a sa na s | and a | a <mark>lanasa</mark> ter | laster fasses i agitatis           |
| Start 30.0       | MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                |                               | 2000                       | 1 nts                        |                                                                                                                  |                                                                                                                 |       | Sto                       | p 1.0 GHz                          |

Date: 28.JUN.2018 10:43:46

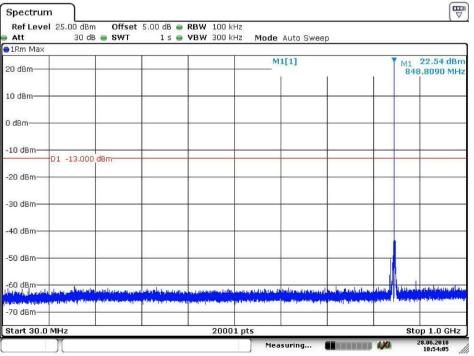


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Spectrum Ref Level 25.00 dBm Offset 5.00 dB 📾 RBW 1 MHz Att 30 dB 👄 SWT 1 s 👄 VBW 3 MHz 🛛 Mode Auto Sweep ●1Rm Max M1[1] 42.27 dBm 20 dBm 1.672940 GH 10 dBm-0 dBm -10 dBm-D1 -13.000 dBm -20 dBm--30 dBm -40 dBm -50 dBm -60 dBm -70 dBm-20001 pts Start 1.0 GHz Stop 10.0 GHz 28.06.2018 10:47:03 Measuring... LXI

Date: 28.JUN.2018 10:47:04

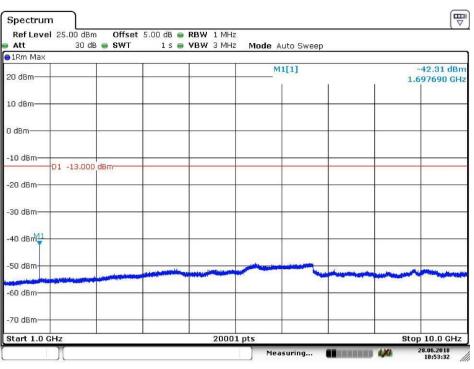
#### 6.1.1.4.3 Test Channel = HCH



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### 7 Field Strength of Spurious Radiation

### 7.1 For LTE-NB1

### 7.1.1 Test Band = LTE-NB1 BAND26(824MHz-849MHz)

#### 7.1.1.1 Test Mode =LTE-NB1/ Sub-carrier spacing=3.75kHz

| 7.1.1.1.1       | Test Channel = LC | H                |                 |              |
|-----------------|-------------------|------------------|-----------------|--------------|
| Frequency (MHz) | Level (dBm)       | Limit Line (dBm) | Over Limit (dB) | Polarization |
| 62.993333       | -82.38            | -13.00           | -69.38          | Vertical     |
| 104.293333      | -83.26            | -13.00           | -70.26          | Vertical     |
| 355.593333      | -86.15            | -13.00           | -73.15          | Vertical     |
| 1653.000000     | -61.24            | -13.00           | -48.24          | Vertical     |
| 3305.175000     | -68.37            | -13.00           | -55.37          | Vertical     |
| 6503.175000     | -65.01            | -13.00           | -52.01          | Vertical     |
| 63.180000       | -77.48            | -13.00           | -64.48          | Horizontal   |
| 104.293333      | -86.44            | -13.00           | -73.44          | Horizontal   |
| 260.860000      | -87.38            | -13.00           | -74.38          | Horizontal   |
| 1653.000000     | -56.51            | -13.00           | -43.51          | Horizontal   |
| 3306.150000     | -64.34            | -13.00           | -51.34          | Horizontal   |
| 3485.550000     | -65.74            | -13.00           | -52.74          | Horizontal   |

7.1.1.1.2 Test Channel = MCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Over Limit (dB) | Polarization |
|-----------------|-------------|------------------|-----------------|--------------|
| 63.460000       | -82.11      | -13.00           | -69.11          | Vertical     |
| 104.293333      | -84.81      | -13.00           | -71.81          | Vertical     |
| 1003.500000     | -61.31      | -13.00           | -48.31          | Vertical     |
| 1673.000000     | -60.08      | -13.00           | -47.08          | Vertical     |
| 3346.125000     | -66.00      | -13.00           | -53.00          | Vertical     |
| 6583.612500     | -65.44      | -13.00           | -52.44          | Vertical     |
| 62.480000       | -77.77      | -13.00           | -64.77          | Horizontal   |
| 104.293333      | -84.48      | -13.00           | -71.48          | Horizontal   |
| 1003.500000     | -55.07      | -13.00           | -42.07          | Horizontal   |
| 1673.000000     | -58.20      | -13.00           | -45.20          | Horizontal   |
| 3526.012500     | -68.03      | -13.00           | -55.03          | Horizontal   |
| 7917.900000     | -64.48      | -13.00           | -51.48          | Horizontal   |



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| 7.1.1.1.3       | Test Channel = HC | ЭН               |                 |              |
|-----------------|-------------------|------------------|-----------------|--------------|
| Frequency (MHz) | Level (dBm)       | Limit Line (dBm) | Over Limit (dB) | Polarization |
| 64.440000       | -82.24            | -13.00           | -69.24          | Vertical     |
| 104.293333      | -84.88            | -13.00           | -71.88          | Vertical     |
| 358.393333      | -85.85            | -13.00           | -72.85          | Vertical     |
| 1693.000000     | -63.10            | -13.00           | -50.10          | Vertical     |
| 3386.100000     | -68.78            | -13.00           | -55.78          | Vertical     |
| 6476.850000     | -65.12            | -13.00           | -52.12          | Vertical     |
| 62.153333       | -77.96            | -13.00           | -64.96          | Horizontal   |
| 104.293333      | -89.14            | -13.00           | -76.14          | Horizontal   |
| 272.900000      | -87.73            | -13.00           | -74.73          | Horizontal   |
| 1692.500000     | -64.13            | -13.00           | -51.13          | Horizontal   |
| 3386.100000     | -66.73            | -13.00           | -53.73          | Horizontal   |
| 6951.675000     | -65.39            | -13.00           | -52.39          | Horizontal   |

#### NOTE:

- 1) The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2) We have tested all modulation and all bandwidth, but only the worst case data presented in this report.



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### 8 Frequency Stability

### 8.1 Frequency Error VS. Voltage

| Test<br>Band | Test Mode | Test<br>Channel | Test<br>Temp. | Test<br>Volt. | Freq. Error<br>[Hz] | Freq. vs.<br>rated [ppm] | Verdict |
|--------------|-----------|-----------------|---------------|---------------|---------------------|--------------------------|---------|
|              |           |                 |               | VL            | -4.57               | -0.005550                | PASS    |
|              |           | LCH             | TN            | VN            | -6.35               | -0.007702                | PASS    |
|              |           |                 |               | VH            | -5.50               | -0.006671                | PASS    |
|              |           | МСН             |               | VL            | 4.62                | 0.005523                 | PASS    |
|              | TM1/15k   |                 | TN            | VN            | 6.01                | 0.007188                 | PASS    |
|              |           |                 |               | VH            | 1.82                | 0.002177                 | PASS    |
|              |           | нсн             | TN            | VL            | 2.35                | 0.002773                 | PASS    |
|              |           |                 |               | VN            | 9.40                | 0.011074                 | PASS    |
| BAND26       |           |                 |               | VH            | 4.84                | 0.005698                 | PASS    |
| B/ WD20      |           | LCH             | TN            | VL            | 2.05                | 0.002482                 | PASS    |
|              |           |                 |               | VN            | 7.79                | 0.009453                 | PASS    |
|              |           |                 |               | VH            | 3.48                | 0.004217                 | PASS    |
|              |           |                 |               | VL            | -7.97               | -0.009523                | PASS    |
|              | TM2/15k   | MCH             | TN            | VN            | -2.13               | -0.002546                | PASS    |
|              |           |                 |               | VH            | -4.94               | -0.005903                | PASS    |
|              |           |                 |               | VL            | 4.77                | 0.005621                 | PASS    |
|              |           | НСН             | TN            | VN            | 8.37                | 0.009860                 | PASS    |
|              |           |                 |               | VH            | 4.45                | 0.005237                 | PASS    |



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### 8.2 Frequency Error VS. Temperature

| Test<br>Band | Test Mode | Test<br>Channel | Test<br>Volt. | Test<br>Temp. | Freq.<br>Error<br>[Hz] | Freq. vs.<br>rated [ppm] | Verdict |
|--------------|-----------|-----------------|---------------|---------------|------------------------|--------------------------|---------|
|              | TM1 15kHz | LCH             | VN            | -30           | -8.26                  | -0.010029                | PASS    |
|              |           |                 |               | -20           | 2.92                   | 0.003540                 | PASS    |
|              |           |                 |               | -10           | 5.08                   | 0.006170                 | PASS    |
|              |           |                 |               | 0             | -9.05                  | -0.010976                | PASS    |
|              |           |                 |               | 10            | -7.25                  | -0.008799                | PASS    |
| BAND26       |           |                 |               | 20            | -3.76                  | -0.004561                | PASS    |
|              |           |                 |               | 30            | 3.24                   | 0.003929                 | PASS    |
|              |           |                 |               | 40            | -5.82                  | -0.007067                | PASS    |
|              |           |                 |               | 50            | -5.59                  | -0.006781                | PASS    |
|              |           | МСН             | VN            | -30           | 2.22                   | 0.002657                 | PASS    |
|              |           |                 |               | -20           | 7.76                   | 0.009278                 | PASS    |
|              |           |                 |               | -10           | 2.66                   | 0.003175                 | PASS    |
|              |           |                 |               | 0             | 7.56                   | 0.009042                 | PASS    |
|              |           |                 |               | 10            | -6.62                  | -0.007919                | PASS    |
|              |           |                 |               | 20            | -3.19                  | -0.003818                | PASS    |
|              |           |                 |               | 30            | -2.33                  | -0.002786                | PASS    |
|              |           |                 |               | 40            | 0.48                   | 0.000579                 | PASS    |
|              |           |                 |               | 50            | 0.13                   | 0.000154                 | PASS    |
|              |           | нсн             | VN            | -30           | -0.31                  | -0.000364                | PASS    |
|              |           |                 |               | -20           | 7.92                   | 0.009326                 | PASS    |
|              |           |                 |               | -10           | 3.39                   | 0.003999                 | PASS    |
|              |           |                 |               | 0             | 8.10                   | 0.009545                 | PASS    |
|              |           |                 |               | 10            | 7.66                   | 0.009026                 | PASS    |
|              |           |                 |               | 20            | 4.18                   | 0.004927                 | PASS    |
|              |           |                 |               | 30            | -2.09                  | -0.002459                | PASS    |
|              |           |                 |               | 40            | -7.23                  | -0.008518                | PASS    |
|              |           |                 |               | 50            | 1.73                   | 0.002041                 | PASS    |



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| Test<br>Band | Test Mode | Test<br>Channel | Test<br>Volt. | Test<br>Temp. | Freq.<br>Error<br>[Hz] | Freq. vs.<br>rated [ppm] | Verdict |
|--------------|-----------|-----------------|---------------|---------------|------------------------|--------------------------|---------|
|              | TM2 15kHz | LCH             | VN            | -30           | 0.62                   | 0.000753                 | PASS    |
|              |           |                 |               | -20           | 4.18                   | 0.005078                 | PASS    |
|              |           |                 |               | -10           | -2.22                  | -0.002694                | PASS    |
|              |           |                 |               | 0             | -7.24                  | -0.008789                | PASS    |
|              |           |                 |               | 10            | 1.91                   | 0.002323                 | PASS    |
|              |           |                 |               | 20            | -6.66                  | -0.008083                | PASS    |
|              |           |                 |               | 30            | 4.61                   | 0.005589                 | PASS    |
|              |           |                 |               | 40            | -5.84                  | -0.007090                | PASS    |
|              |           |                 |               | 50            | -3.62                  | -0.004393                | PASS    |
|              |           |                 | VN            | -30           | 9.46                   | 0.011310                 | PASS    |
|              |           |                 |               | -20           | 7.85                   | 0.009387                 | PASS    |
| BAND26       |           | МСН             |               | -10           | 5.88                   | 0.007034                 | PASS    |
|              |           |                 |               | 0             | -5.73                  | -0.006850                | PASS    |
|              |           |                 |               | 10            | 2.74                   | 0.003274                 | PASS    |
|              |           |                 |               | 20            | 3.69                   | 0.004411                 | PASS    |
|              |           |                 |               | 30            | -3.83                  | -0.004584                | PASS    |
|              |           |                 |               | 40            | 1.06                   | 0.001263                 | PASS    |
|              |           |                 |               | 50            | -0.83                  | -0.000995                | PASS    |
|              |           | нсн             | VN            | -30           | 7.99                   | 0.009410                 | PASS    |
|              |           |                 |               | -20           | -0.77                  | -0.000908                | PASS    |
|              |           |                 |               | -10           | -5.60                  | -0.006598                | PASS    |
|              |           |                 |               | 0             | 0.70                   | 0.000822                 | PASS    |
|              |           |                 |               | 10            | -9.18                  | -0.010813                | PASS    |
|              |           |                 |               | 20            | 9.23                   | 0.010872                 | PASS    |
|              |           |                 |               | 30            | -0.44                  | -0.000520                | PASS    |
|              |           |                 |               | 40            | -7.13                  | -0.008402                | PASS    |
|              |           |                 |               | 50            | 1.94                   | 0.002280                 | PASS    |

The End