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# Appendix B

### Test Data for SZEM161201085001RG



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

#### Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	ERP[dB]	Limit[dBm]	Verdict
	GSM/TM1	LCH	32.59	31.59	38.45	PASS
		MCH	32.31	31.31	38.45	PASS
0.014.050		НСН	32.14	31.14	38.45	PASS
GSM 850		LCH	26.91	25.91	38.45	PASS
	GSM/TM2	MCH	27.18	26.18	38.45	PASS
		НСН	27.14	26.14	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
- c: RBW > emission bandwidth, VBW >  $3 \times RBW$ .

Detector: RMS

Test Band	Test Mode	Test Channel	Measured[dB]	EIRP[dB]	Limit[dBm]	Verdict
	GSM/TM1	LCH	30.31	30.31	33	PASS
		MCH	29.94	29.94	33	PASS
0.014 4000		HCH	29.60	29.60	33	PASS
GSM 1900		LCH	26.50	26.50	33	PASS
	GSM/TM2	MCH	26.13	26.13	33	PASS
		HCH	25.93	25.93	33	PASS

Note:

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

EIRP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBi] b: SGP=Signal Generator Level c: RBW > emission bandwidth, VBW > 3 x RBW.

Detector: RMS

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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				
	GSM/TM1	MCH	4.72	13	PASS				
GSM 850		НСН	4.64	13	PASS				
G2IN 020	GSM/TM2	LCH	8.32	13	PASS				
		MCH	8.32	13	PASS				
		НСН	8.55	13	PASS				
	GSM/TM1	LCH	4.78	13	PASS				
		MCH	4.64	13	PASS				
CSM 1000		НСН	4.72	13	PASS				
GSM 1900		LCH	8.52	13	PASS				
	GSM/TM2	MCH	8.17	13	PASS				
		HCH	8.35	13	PASS				



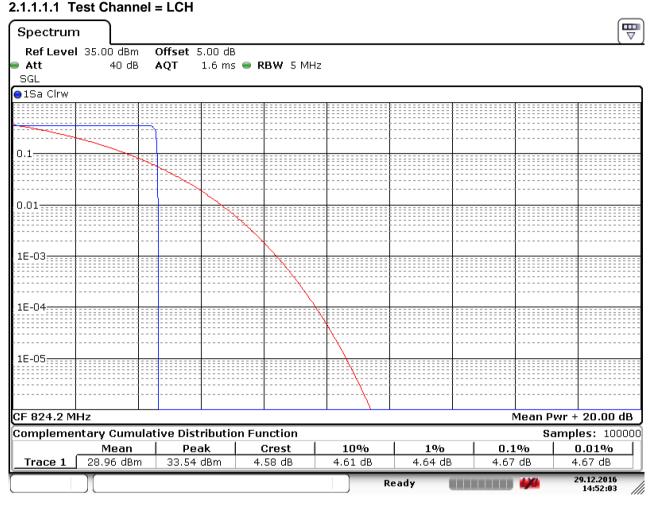
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Part II - Test Plots

#### 2.1 For GSM

### 2.1.1 Test Band = GSM 850

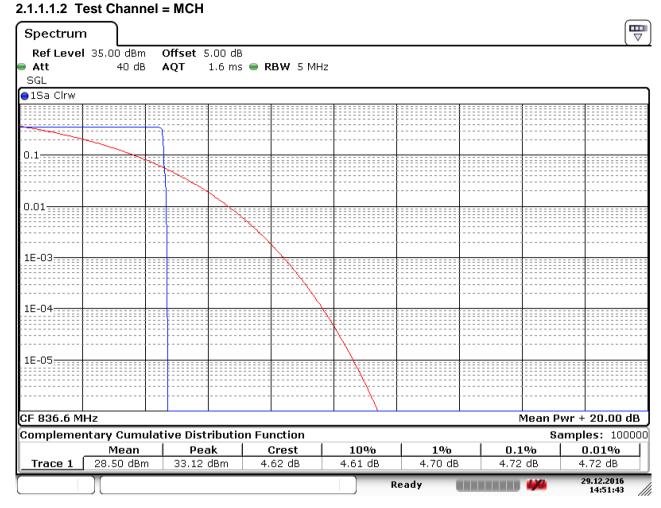
#### 2.1.1.1 Test Mode = GSM/TM1



Date: 29.DEC.2016 14:52:03



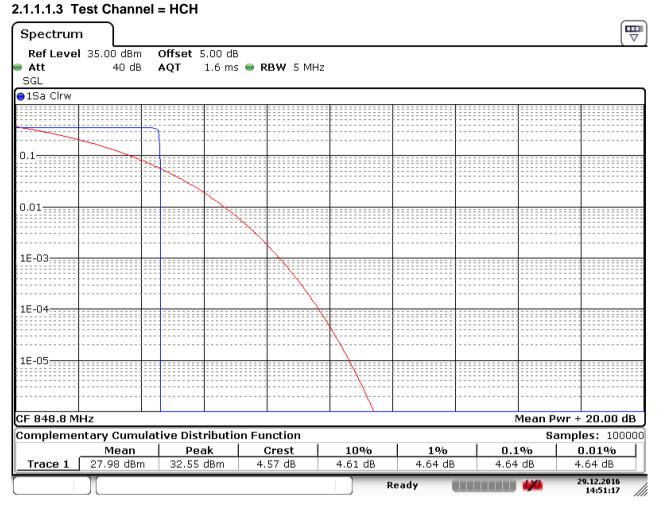
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Date: 29.DEC.2016 14:51:18



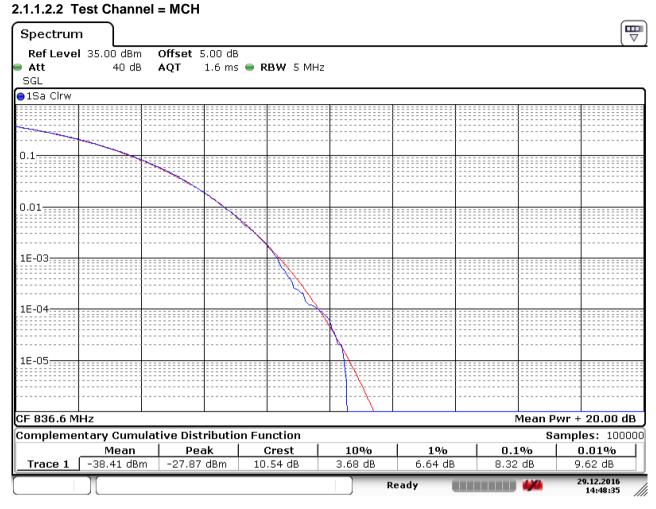
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#### 2.1.1.2 Test Mode = GSM/TM2 2.1.1.2.1 Test Channel = LCH ₽ Spectrum Ref Level 35.00 dBm Offset 5.00 dB Att 40 dB AQT 1.6 ms 👄 RBW 5 MHz SGL ●1Sa Clrw 0.10.011E-03; 1E-04 1E-05: CF 824.2 MHz Mean Pwr + 20.00 dB **Complementary Cumulative Distribution Function** Samples: 100000 Mean Peak Crest 10% 1% 0.1% 0.01%Trace 1 -38.49 dBm -27.55 dBm 10.94 dB 3.68 dB 6.78 dB 8.32 dB 9.65 dB 29.12.2016 Ready 14:49:29

Date: 29.DEC.2016 14:49:30



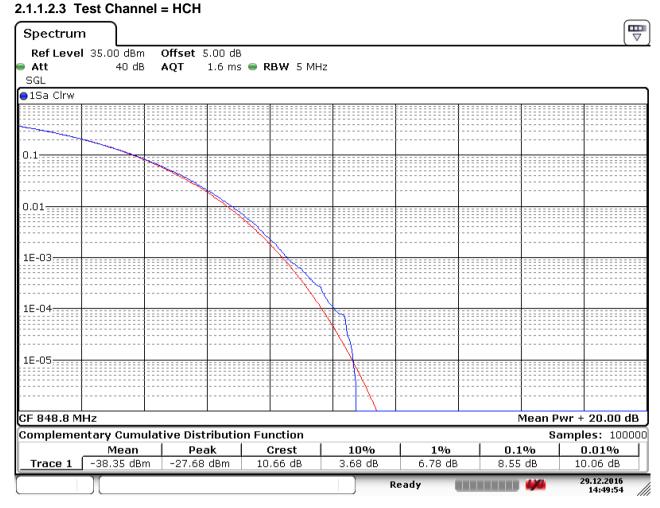
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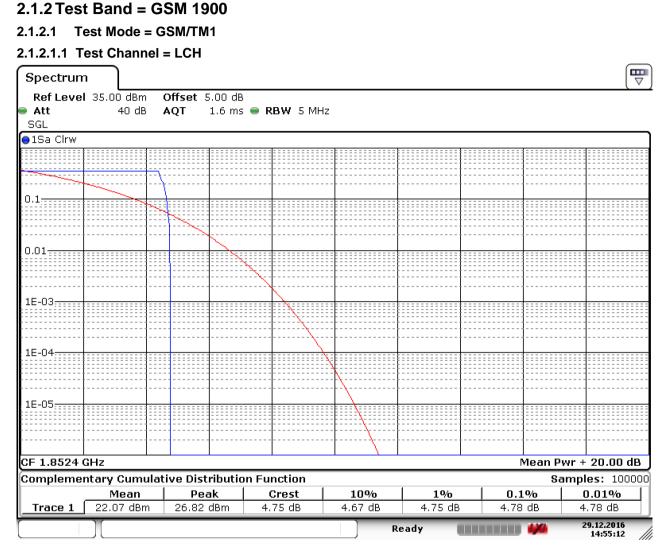
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Date: 29.DEC.2016 14:49:54



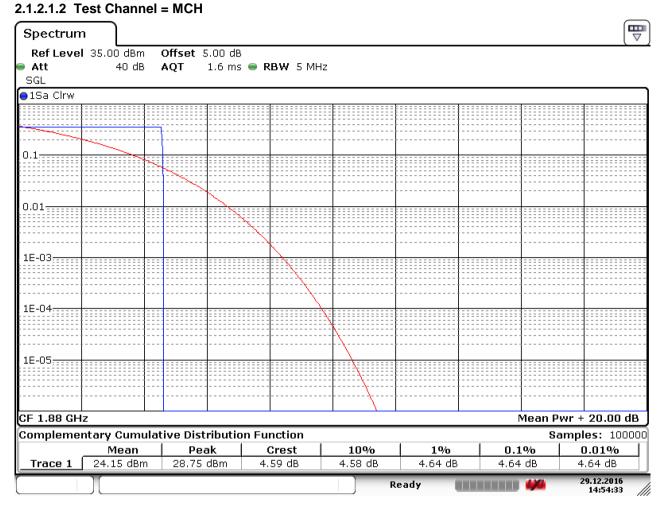
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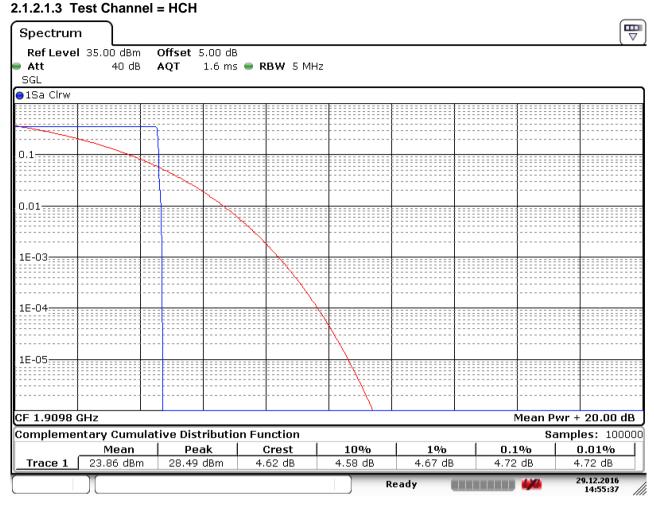
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2.1.2.2 Test Mode = GSM/TM2

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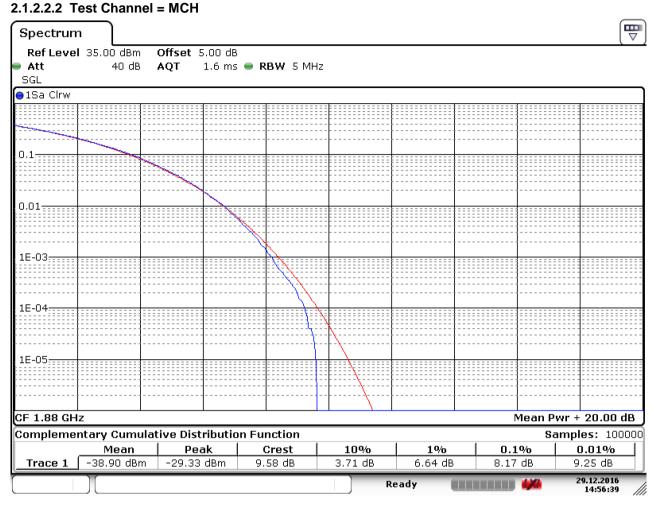
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#### 2.1.2.2.1 Test Channel = LCH ₽ Spectrum Ref Level 35.00 dBm Offset 5.00 dB Att 40 dB AQT 1.6 ms 👄 RBW 5 MHz SGL ●1Sa Clrw 0.10.011E-03; 1E-04 1E-05: CF 1.8502 GHz Mean Pwr + 20.00 dB **Complementary Cumulative Distribution Function** Samples: 100000 Mean Peak Crest 10%1% 0.1% 0.01%Trace 1 -38.90 dBm -28.42 dBm 10.48 dB 3.68 dB 6.67 dB 8.52 dB 9.54 dB 29.12.2016 Ready 14:57:00

Date: 29.DEC.2016 14:57:00



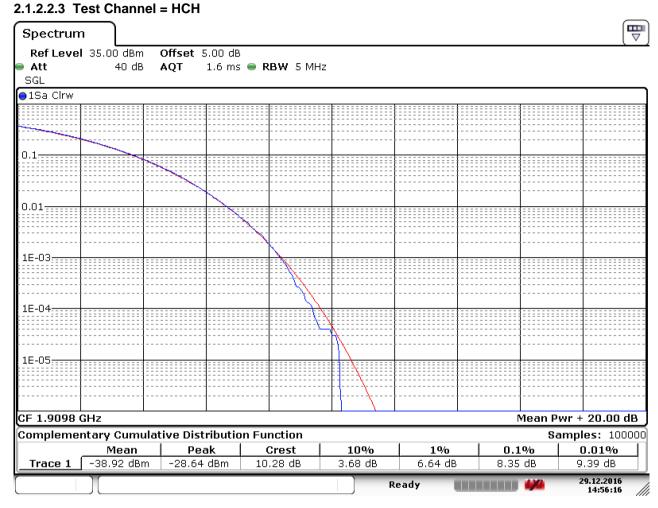
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### **3 Modulation Characteristics**

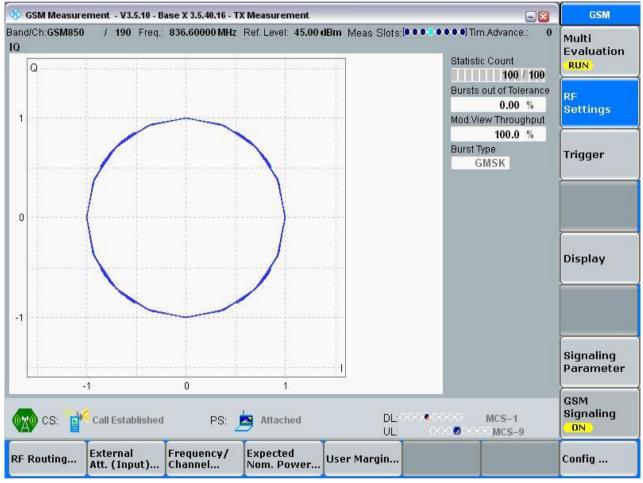
Part I - Test Plots

#### 3.1 For GSM

#### 3.1.1 Test Band = GSM 850

#### 3.1.1.1 Test Mode = GSM/TM1

#### 3.1.1.1.1 Test Channel = MCH





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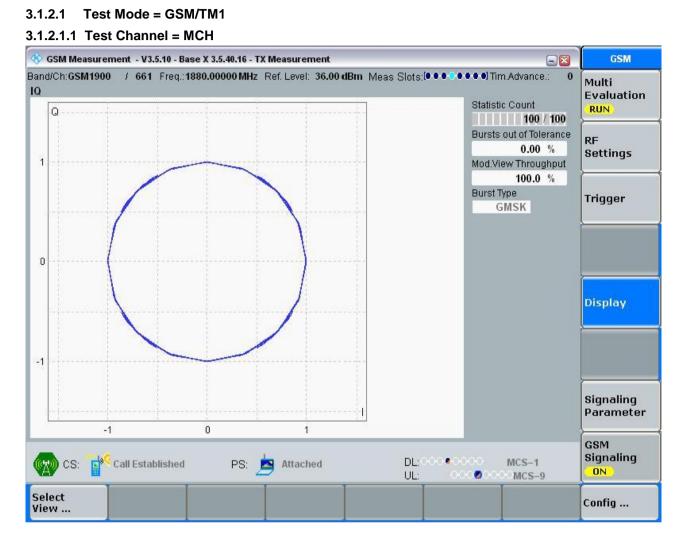
#### 3.1.1.2 Test Mode = GSM/TM2

#### 3.1.1.2.1 Test Channel = MCH 🚸 GSM Measurement - V3.5.10 - Base X 3.5.40.16 - TX Measurement GSM 0 Multi 10 Evaluation Statistic Count RUN Q 100 / 100 Bursts out of Tolerance RF 0.00 % Settings 1 Mod.View Throughput 100.0 % -1-\*\*\* Burst Type Trigger 8PSK n Display ž., y. -1 Signaling Parameter n 1 -1 GSM Signaling DL: . CS: Synchronized PS: TBF Established MCS-1 ON UL . MCS-9 Expected External Frequency/ **RF Routing...** User Margin... Config ... Att. (Input) Channel... Nom. Power.



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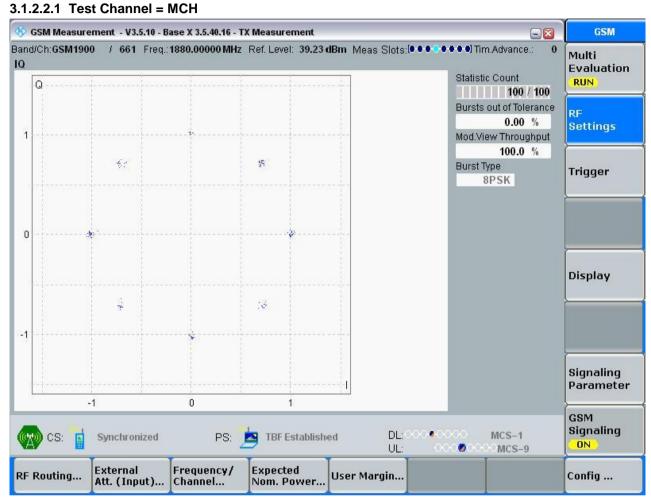
#### 3.1.2 Test Band = GSM 1900



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#### 3.1.2.2 Test Mode = GSM/TM2



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### 4 Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [kHz]	Emission Bandwidth [kHz]	Verdict
		LCH	243.76	313.70	PASS
	UMTS/TM1	MCH	243.76	316.70	PASS
GSM 850	0	HCH	242.76	317.70	PASS
G3W 050		LCH	239.76	309.70	PASS
	UMTS/TM2	MCH	239.76	309.70	PASS
		HCH	239.76	309.70	PASS PASS PASS PASS
		LCH	243.76	317.70	PASS
	UMTS/TM1	MCH	244.76	311.70	PASS PASS PASS PASS PASS PASS PASS PASS
GSM 1900		HCH	243.76	311.70	PASS
GSIVI 1900	UMTS/TM2	LCH	241.76	312.70	PASS
		MCH	242.76	314.70	PASS
		HCH	242.75	316.70	PASS



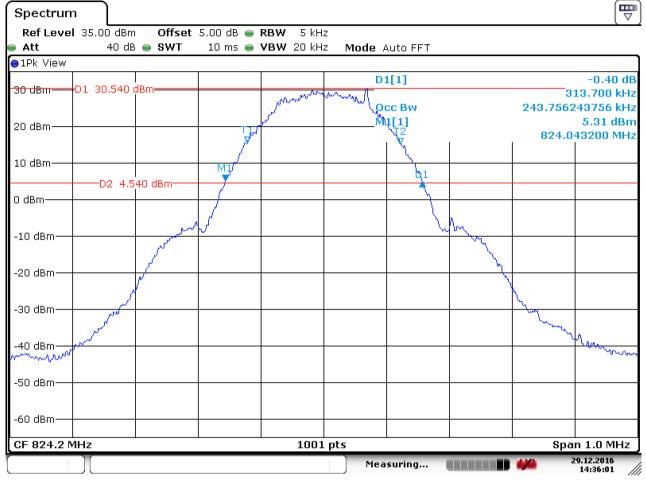
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#### 4.1 For GSM

#### 4.1.1 Test Band = GSM 850

#### 4.1.1.1 Test Mode = GSM/TM1

#### 4.1.1.1.1 Test Channel = LCH

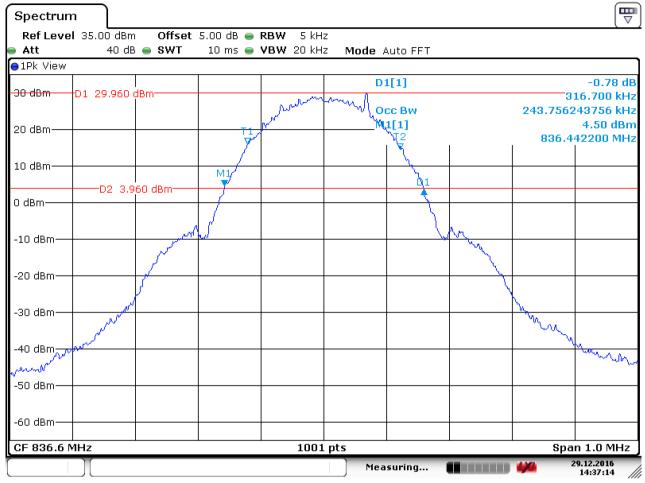


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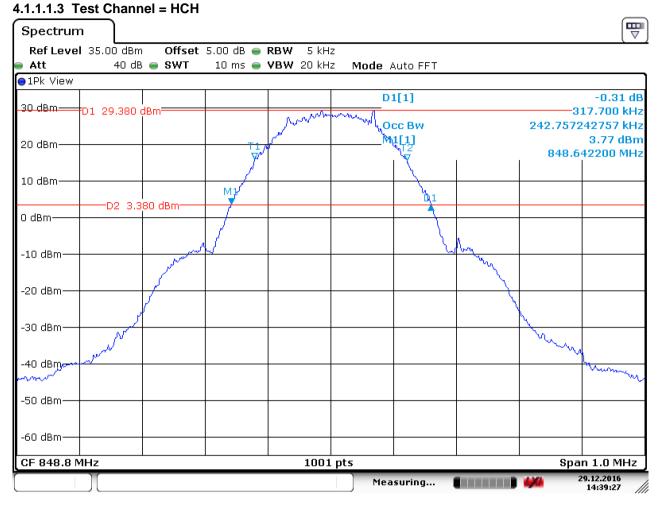
#### 4.1.1.1.2 Test Channel = MCH



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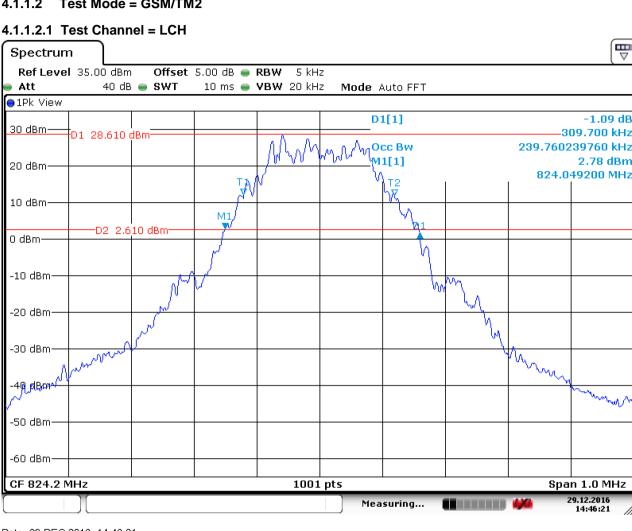


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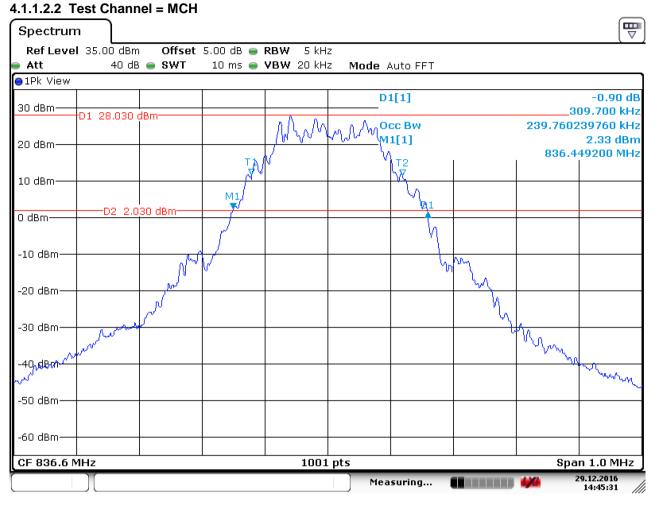
#### 4.1.1.2 Test Mode = GSM/TM2



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4.1.1.2.3 Test Channel = HCH

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#### ₩ Spectrum Ref Level 35.00 dBm Offset 5.00 dB 👄 RBW 5 kHz 40 dB 🔵 SWT 10 ms 👄 VBW 20 kHz Att Mode Auto FFT ●1Pk View D1[1] -1.17 dB 30 dBm-309.700 kHz D1 27,580 dBm-239.760239760 kHz Occ Bw ſΛ M1[1] 1.82 dBm 20 dBm-848.649200 MHz τ2 10 dBm M1 -D2 1.580 dBm-0 dBm· -10 dBm-١Ň Λi -20 dBm<sup>.</sup> -30 dBmm .40 dBm<mark>∿</mark>∆ any man -50 dBm -60 dBm-1001 pts CF 848.8 MHz Span 1.0 MHz 29.12.2016 Measuring... 11 14:44:21

Date: 29.DEC.2016 14:44:22

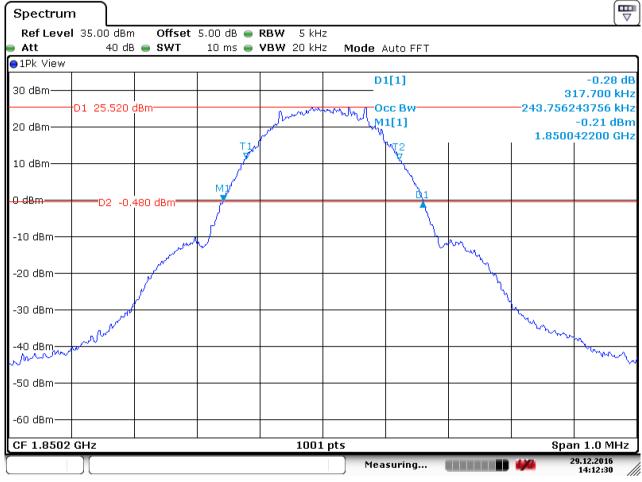


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#### 4.1.2 Test Band = GSM 1900

#### 4.1.2.1 Test Mode = GSM/TM1

#### 4.1.2.1.1 Test Channel = LCH



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4.1.2.1.2 Test Channel = MCH

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#### ₩ Spectrum Ref Level 35.00 dBm Offset 5.00 dB 👄 RBW 5 kHz 40 dB 💿 SWT 10 ms 🔵 **VBW** 20 kHz Att Mode Auto FFT ●1Pk View D1[1] -0.43 dB 30 dBm-311.700 kHz D1 26.620 dBm Occ Bw 243.756243756 kHz mo M1[1] 0.64 dBm 20 dBm-1.879845200 GHz Τ1 10 dBm M1 -D2 0.620 dBm 0 dBm· -10 dBm--20 dBm<sup>.</sup> -30 dBm--40 dBm--50 dBm--60 dBm-1001 pts CF 1.88 GHz Span 1.0 MHz 29.12.2016 Measuring... Ili 14:10:24

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Spectrun									
-	I 35.00 dBm	Offset	5.00 dB 👄 10 ms 👄	<b>RBW</b> 5 kH <b>VBW</b> 20 kH		\uto FFT			( •
⊖1Pk View									
30 dBm	D1 26.290	dD co.				1[1]			-0.63 dB 11.700 kHz
20 dBm	DI 20.2901			non	MANAN 11	cc Bw 1[1]			43756 kHz 0.34 dBm 45200 GHz
10 dBm				r 		NT2			
<del>0 dBm</del>	D2 0.2	90 dBm	MJC			<u>à</u> 1			
-10 dBm—		Normal	J				hn.		
-20 dBm—		and the second s					- J		
-30 dBm—		/					<u>\</u>	-	
-40 dBm	and a contraction							ww	- marine
-50 dBm									
-60 dBm									
CF 1.9098	GHz			1001	. pts				n 1.0 MHz
					Mea	suring		- <b>2</b>	9.12.2016 14:14:01

#### 4 1 2 1 2 Test Channel - UCU

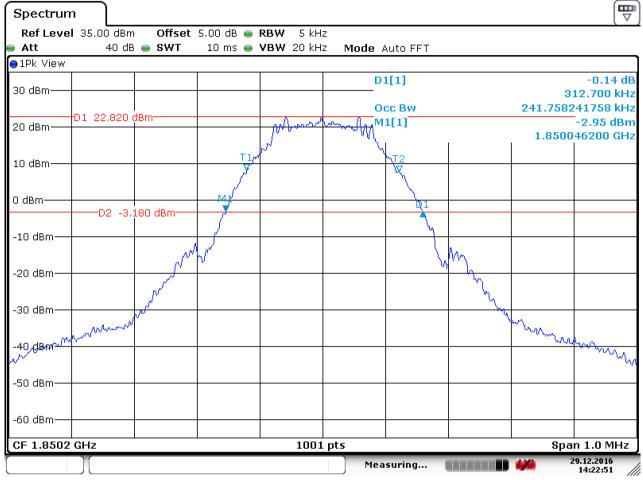
Date: 29.DEC.2016 14:14:02



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#### 4.1.2.2 Test Mode = GSM/TM2

#### 4.1.2.2.1 Test Channel = LCH



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4.1.2.2.2 Test Channel = MCH

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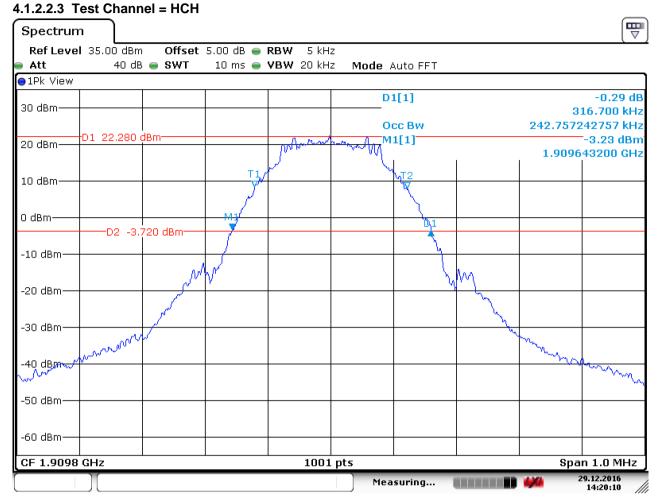
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#### ₽ Spectrum Ref Level 35.00 dBm Offset 5.00 dB 👄 RBW 5 kHz Att 40 dB 👄 SWT 10 ms 👄 **VBW** 20 kHz Mode Auto FFT ●1Pk View D1[1] -0.66 dB 30 dBm-314.700 kHz Occ Bw 242.757242757 kHz D1 22.470 dBm-M1[1] -3.17 dBm 20 dBm-1.879845200 GHz 10 dBm-0 dBm--D2 -3.530 dBm--10 dBm--20 dBm<sup>.</sup> -30 dBm man -40 d<mark>Bm%</mark> -50 dBm -60 dBm-Span 1.0 MHz CF 1.88 GHz 1001 pts 29.12.2016 Measuring... 14:21:37

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### 5 Band Edges Compliance

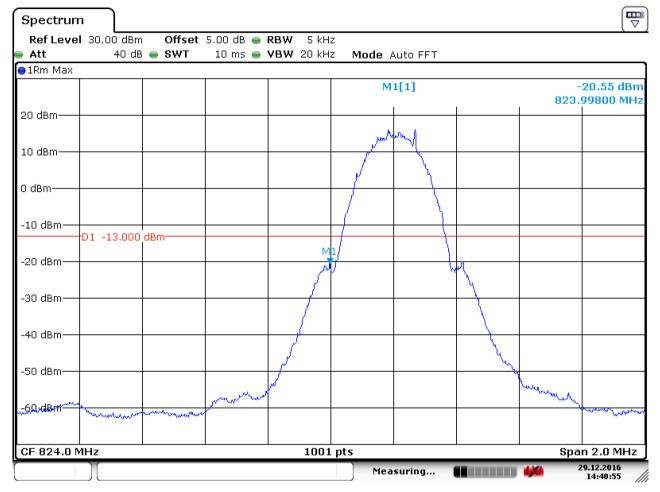
Part I - Test Plots

#### 5.1 For GSM

#### 5.1.1 Test Band = GSM 850

#### 5.1.1.1 Test Mode = GSM/TM1

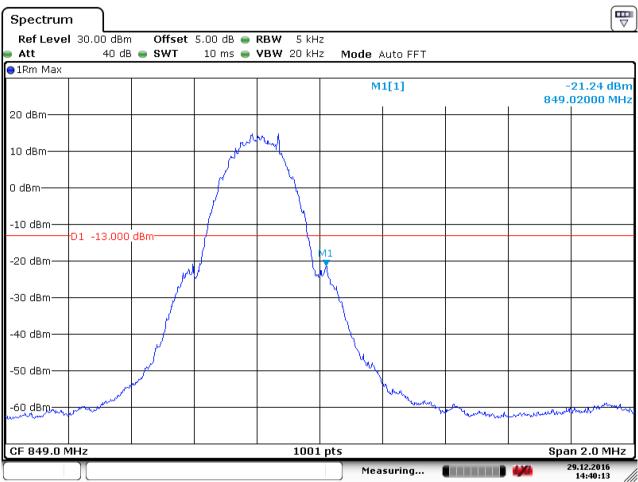
5.1.1.1.1 Test Channel = LCH



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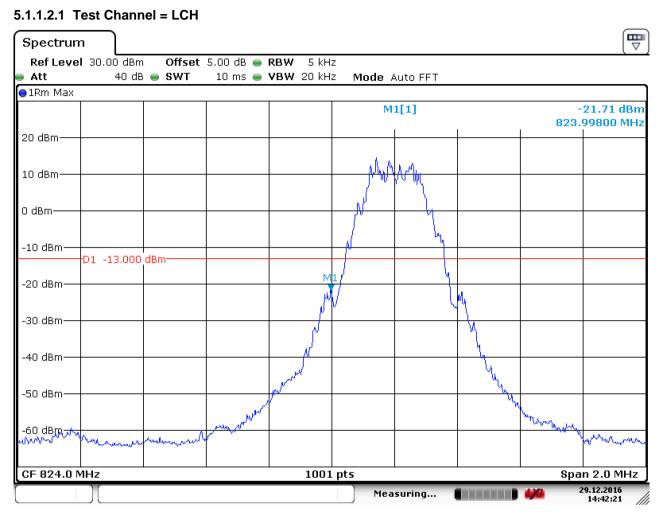
5.1.1.1.2 Test Channel = HCH

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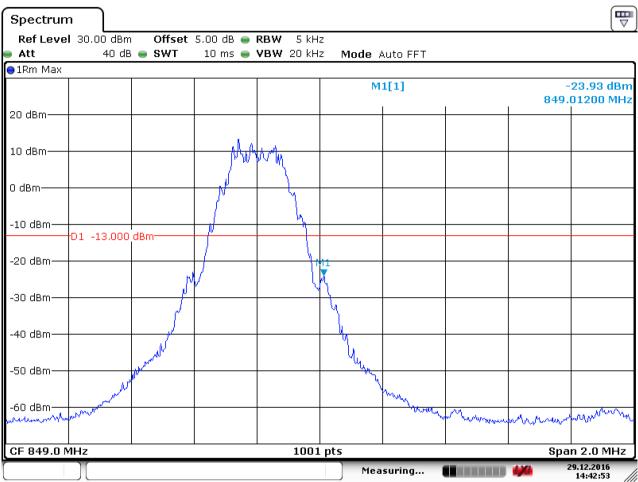
5.1.1.2 Test Mode = GSM/TM2



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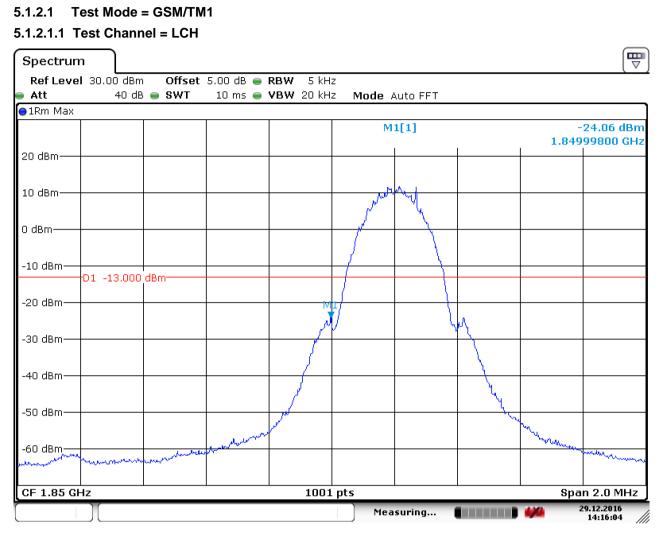
5.1.1.2.2 Test Channel = HCH

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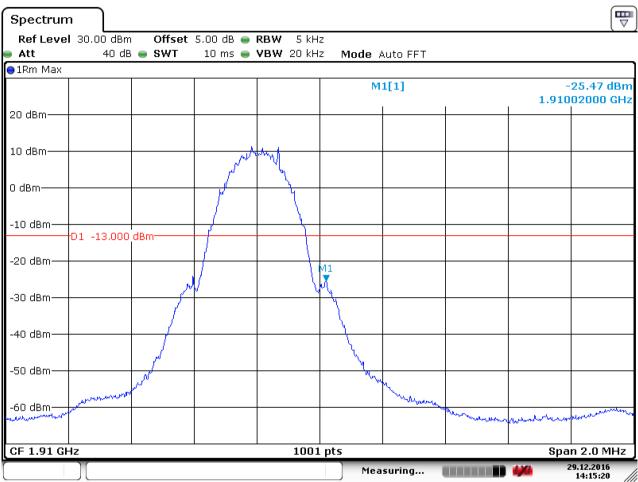
### 5.1.2 Test Band = GSM 1900



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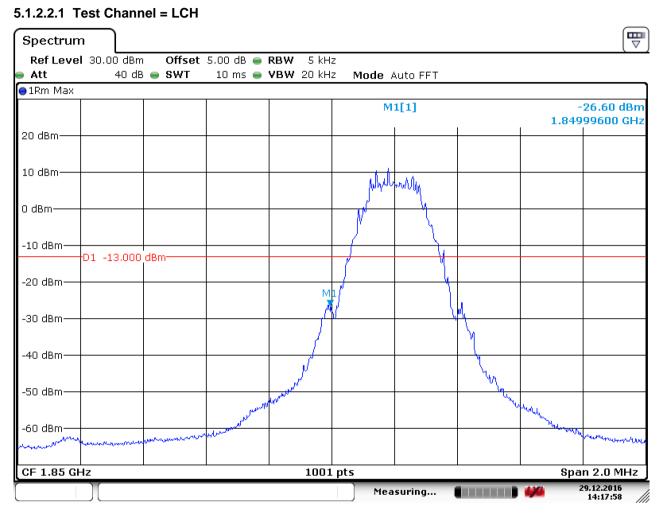
#### 5.1.2.1.2 Test Channel = HCH

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5.1.2.2 Test Mode = GSM/TM2

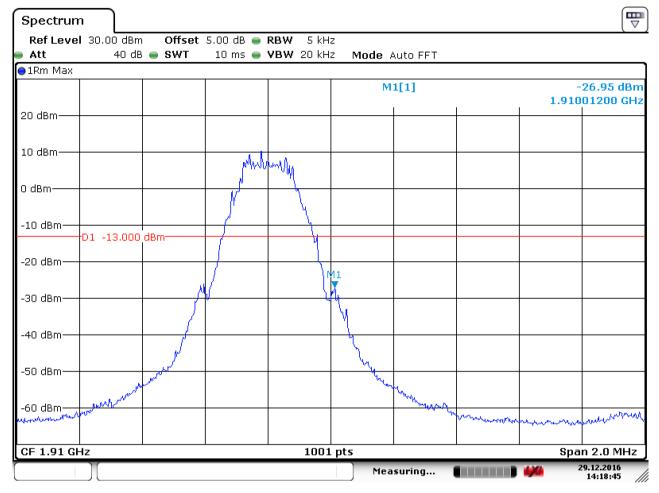


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#### 5.1.2.2.2 Test Channel = HCH



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### 6 Spurious Emission at Antenna Terminal

NOTE: 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.

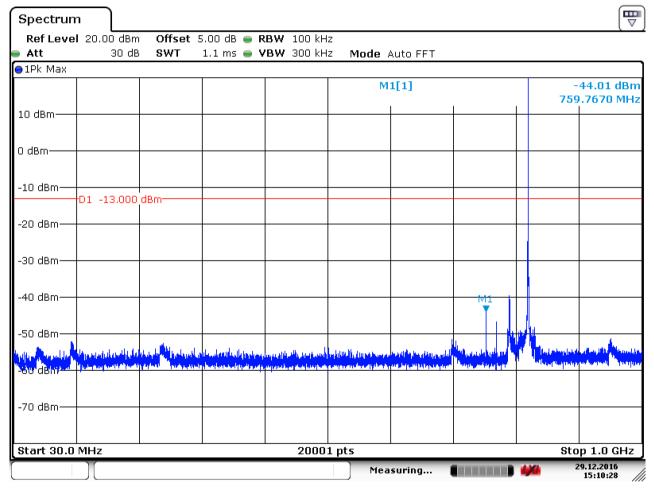
Part I - Test Plots

### 6.1 For GSM

#### 6.1.1 Test Band = GSM 850

6.1.1.1 Test Mode = GSM/TM1

#### 6.1.1.1.1 Test Channel = LCH



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Spectrun	n									
Ref Leve				5.00 dB 👄 R						
Att	30	) dB	SWT	27 ms 😑 V	BW 3 MHz	Mode Au	ito Sweep			
⊖1Pk Max	1			1						00.05 ID
						M	1[1]			22.86 dBm 73390 GHz
10 dBm									1.0	70090 0112
0 dBm										
-10 dBm										
-20 dBr 1	D1 -13.	000 0	dBm							
I I										
-30 dBm										
	ا الله الله ال		A particular di stadio de d	and all and a stand a se			theory of the second	Manager	amatik spalatik	And the house of the second
ាស្រុកដោយសំហា <sup>រសំណ</sup>	a panangan panga Ang ang ang ang ang ang ang ang ang ang a	والالالمار	an and a second s	In the second	dense and the second			and the standing second particular	teored basic the state of the	- The strength
-60 dBm—										
-70 dBm—										
Start 1.0 (	 GHz				2000	l nts			 Ston	10.0 GHz
	)(				2000		curring (			29.12.2016
Ĺ						mea	suring		<b>1</b>	15:11:33

Date: 29.DEC.2016 15:11:33



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Spectrum	ı )									
Ref Level Att	20.00 dBm 30 dE		5.00 dB 👄 R 1.1 ms 👄 V			Auto FFT				
⊖1Pk Max	I	1	1	1						
					м	1[1]				45.11 dBm 5430 MHz
10 dBm										
0 dBm										
-10 dBm	D1 -13.000	dBm								
-20 dBm										
-30 dBm										
-40 dBm							M1	1		
-50 dBm										1
luta -oral diaman-	l la confection de la confection Automatica de la confectione	aldala da angla ang	and the basic of the part of t	la la <sub>co</sub> nte <mark>della mana del 20</mark> La constana della mana della	ر المالي الحريق المرافق <mark>(مرور)</mark> ماكن مريقية يسركم الحريق مريد ب	na ng Kagali, Dalamiti manang kagalang kagang manang manang manang kagang kagang kagang kagang kagang kagang ka		n h	halperfacts	
-70 dBm——										
Start 30.0	MHz	I	<u> </u>	2000	1 pts	I	I	I	Sto	p 1.0 GHz
	)[				) Mea	suring		-	2	9.12.2016 15:12:01 //

6.1.1.1.2 Test Channel = MCH

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Spectrun	ı )									
Ref Leve Att		dBm ) dB	Offset 5 SWT	5.00 dB 👄 <b>R</b> 27 ms 👄 <b>V</b>	BW 1 MHz BW 3 MHz	Mode A	ta Cuican			
1Pk Max	00	5 UD	3111	27 1113 👅 🖣	DW J MIZ	MOUE AU	ito Sweep			,
						М	1[1]			22.86 dBm 73390 GHz
10 dBm——										
0 dBm										
-10 dBm—	D1 -13,	000 d	Bm							
-20 dBm										
-30 dBm										
	a datta an o	ل در دور.	Versional and dated	and all subsets a	المراجعة (مالية المراجعة). المراجعة (مالية المراجعة المرا	المراجع الإرباط ألمانيا ورا مناطق وروسية أعطي ورا	the second s	a na kana malanan kala.	a ser presidente d'arrest de la ser	Alles Hallen and Alles Alles and Market and Alles Alles and Alles A
unaterentinininininininininininininininininini	a a san aliang atticket and	ليو يورييكو	ni pada pana pana pana pana pana pana pana	1919 and a local and a local and a	den og selvinenet		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	and the second secon	teoretiketet <sub>et</sub> tt <sup>entetik</sup> te	an war filt of a sublid
-60 dBm—										
-70 dBm										
Start 1.0 G	Hz				2000	1 pts			Stop	10.0 GHz
						Mea	suring (		<b>4/4</b> 2	9.12.2016 15:11:33

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6.1.1.1.3 Test Channel = HCH

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#### ₽ Spectrum Ref Level 20.00 dBm Offset 5.00 dB 👄 RBW 100 kHz 30 dB 1.1 ms 👄 **VBW** 300 kHz Att SWT Mode Auto FFT ●1Pk Max M1[1] -44.51 dBm 791.7760 MHz 10 dBm-0 dBm--10 dBm-D1 -13.000 dBm<sup>.</sup> -20 dBm--30 dBm<sup>.</sup> -40 dBm· M1 -50 dBm<sup>.</sup> d d -70 dBm-Stop 1.0 GHz Start 30.0 MHz 20001 pts 29.12.2016 Measuring... 15:13:21

Date: 29.DEC.2016 15:13:22



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Spectrun	n								
	l 20.00 dBn		5.00 dB 😑 R						
Att	30 de	B SWT	27 ms 🖷 V	BW 3 MHz	Mode Au	ito Sweep			
⊖1Pk Max	1		1						00.00 ID
					M	1[1]			23.38 dBm 97690 GHz
10 dBm								1.0	57050 GH2
0 dBm									
-10 dBm—									
-20 dBm <u>41</u>	D1 -13.000								
-30 dBm									
-40 dBm						en diterine			
	الباو والمعالية المراد	ومرافعة الطالول	and the second s	الأولية والمطاروحي واللي	and the second second	and the second second	lini, store to darb th	and the fast and so the	and design to a life of
-S0 dBm		a base for a place of the Basics			-				
-60 dBm									
-00 0811									
-70 dBm—									
Start 1.0 (	 GHz			2000	1 pts			Ston	10.0 GHz
	)(			2000		suring		-	29.12.2016
(						suring (			15:12:56

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### 6.1.2 Test Band = GSM 1900

ı 🕒								[₩
20.00 dBm		5.00 dB 👄 R						
20 40	3111	1.1 115 🚽 🕇	DW 300 KH					
				M	1[1]			56.35 dBr 5.1770 MH
D1 -13.000	dBm							
					м	1		
	alleri, Treeste	u u u u u u u u u u u u u u u u u u u		aputati ang	terinitan <sup>in</sup> papaten	e Na serialisti energi energi Na serialisti energi	ini na na kipalan tarihi	and a start
by databat finishan	eritan janan jara	uponyorinainpolitada	ntente portatificatione 	առլությունները	er fra de falle de la falle	and long and		ale a construction of the set
	25 dB	25 dB SWT	25 dB SWT 1.1 ms • V	25 dB SWT 1.1 ms • VBW 300 kH	25 dB SWT 1.1 ms • YBW 300 kHz Mode /	25 dB SWT 1.1 ms VBW 300 kHz Mode Auto FFT	25 dB SWT 1.1 ms VBW 300 kHz Mode Auto FFT   M1[1] M1[1] M1 M1   D1 -13.000 dBm M1 M1 M1	25 dB SWT 1.1 ms VBW 300 kHz Mode Auto FFT

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Spectrur	n								
	l 20.00 dBm		5.00 dB 😑 R						
Att 1Pk Max	30 dB	SWT	27 ms 👄 V	' <b>BW</b> 3 MHz	Mode Au	ito Sweep			
					м	1[1]			34.07 dBm
10 dBm								3.7	00540 GHz
0 dBm									
-10 dBm—	-D1 -13,000	dBm							
-20 dBm—									
-30 dBm—		- IV	1						
-40 dBm—				han dilamana			. Ilet or abore analysis	a kasaranan ka	(habelda et a adh at a.
and the full of the	and the design of the second			(Alastania and Alastania and	Anger Anger (Anne and Anne)		al the state of the second	and the state of the state of the	and the second s
haparaput in <mark>kan</mark>									
-60 dBm—									
-70 dBm—									
Start 1.0 (	GHz	·	I	2000	1 pts	·	·	Stop	10.0 GHz
					Mea	suring (		<b>4/4</b> 2	9.12.2016 15:04:54

Date: 29.DEC.2016 15:04:54



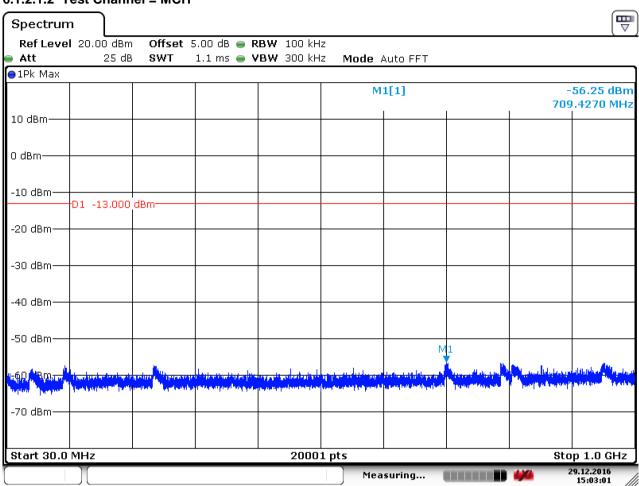
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Spectrun	n								
Ref Leve Att	l 20.00 dBm 30 dB		5.00 dB 👄 R	BW 1 MHz BW 3 MHz	Modo A	ita Cuisan			
Att 1Pk Max	30 UE	9 9991	30 IIIS 👿 ¥		MOUE AL	ito Sweep			
					М	1[1]	1		37.19 dBm 54260 GHz
10 dBm									
0 dBm									
-10 dBm—	D1 -13.000	dBm							
-20 dBm—									
-30 dBm——									M1
-40 dBm Anthony Market			a para ang ang ang ang ang ang ang ang ang an		ni a ninina ang si Na si ninina ang si	an a	المربق المربق المربق المربق	an a shi ka sa ƙasar Ingala. Tani ƙasar ƙasar ƙasar ƙasar	
-50 dBm			1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.						
-60 dBm									
-70 dBm—									
Start 10.0	GHz			2000	1 pts				20.0 GHz
					Mea	suring		2 V	9.12.2016 15:05:14

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#### 6.1.2.1.2 Test Channel = MCH



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Spectrun	n								
	l 20.00 dBm		5.00 dB 😑 R						<b>`</b>
Att	25 dE	SWT	27 ms 🖷 ۷	BW 3 MHz	Mode Au	ito Sweep			
⊖1Pk Max	1		1						
					M	1[1]			31.76 dBm 60390 GHz
10 dBm								3.7	00390 GHZ
0 dBm									
-10 dBm—	D1 10.000								
-20 dBm—	D1 -13.000								
-30 dBm—			M1						
-40 dBm—									
្រេត្តល្ <sub>ក</sub> ៨ឩុកក <sup>្នុង</sup>	فوفا لتعابي وبالأرام وإليان	and the state of the later		المراجع والمراجع المراجع الم	اروانی (را اطلانی این روانی (روانی) در این	a sector of the	index at Jettle day and Af		
A CALENDARY OF A DATA	all ball to a solution of						and an effective film.		and the second states
-60 dBm—									
-70 dBm—									
Start 1.0 (	 GHz			2000	1 nts			Ston	10.0 GHz
				2000		suring			9.12.2016
Ĺ					Mea	suring			15:04:17

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Spectrun	n								
	l 20.00 dBm		5.00 dB 👄 R						
Att	30 dB	SWT	30 ms 🥃 🎙	BW 3 MHz	Mode Au	ito Sweep			
⊖1Pk Max	1	1	1						
					М	1[1]			36.66 dBm
10 dBm								19.9	48750 GHz
0 dBm									
-10 dBm									
	D1 -13.000	dBm							
-20 dBm—									
-30 dBm—									
-40 dBm			of cath	Rey all a ball to be	alle 111 stationer auf and a station	alar - Alberton - atta		http://www.uce	M
and an and the second	and the part of the latest	and the second second	And a state of the		ILINES IN THE OWNER	a barran bar	ter at the second s	in territori de la competition Nomenta de la competition	Mary Contraction of the second
-50 dBm		alan .	A MARKET CONTRACTOR	in in			• • • • • •		
-60 dBm									
-70 dBm									
Start 10.0	GHZ			2000			_	-	20.0 GHz
					Mea	suring		<b>4/4</b> 2	9.12.2016 15:05:31

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6.1.2.1.3 Test Channel = HCH

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#### ₽ Spectrum Ref Level 20.00 dBm Offset 5.00 dB 👄 RBW 100 kHz 25 dB 1.1 ms 👄 **VBW** 300 kHz Att SWT Mode Auto FFT ●1Pk Max M1[1] -56.27 dBm 711.9490 MHz 10 dBm-0 dBm--10 dBm-D1 -13.000 dBm<sup>.</sup> -20 dBm--30 dBm<sup>.</sup> -40 dBm· -50 dBm<sup>.</sup> 60 <mark>Կ</mark>Յրիլ -70 dBm Start 30.0 MHz 20001 pts Stop 1.0 GHz 29.12.2016 Measuring... 15:03:29

Date: 29.DEC.2016 15:03:30



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Spectrum	ı )								
Ref Level Att	l 20.00 dBr 25 dl		5.00 dB 👄 F	RBW 1 MHz /BW 3 MHz	Ra-d- A.				
All 1Pk Max	25 u	5 501	27 ms 🔲 🕯	BW 3 MHZ	MOGE AU	ito Sweep			
					М	1[1]			31.18 dBm 19780 GHz
10 dBm									
0 dBm									
-10 dBm—	D1 -13.000	) dBm							
-20 dBm——									
-30 dBm			M1						
-40 dBm		in the sheat state of	A Hannahallan Ilan	و بنا خرار معاور ا					
<sub>պե</sub> նըստերումներ	la particular de la companya de la c	a lan astronom the states			a a se anna an a	i (l.e.)	Patro Para Para Para Para Para Para Para Pa		
-60 dBm						Tilana.	atore providelitate (and statis	, ang ak bilanan pang katalakan jibu	
-70 dBm									
Start 1.0 G	 GHz			2000	l pts			Stop	0 10.0 GHz
	)[]					suring			29.12.2016 15:03:53

Date: 29.DEC.2016 15:03:54



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Spectrum	ı )								
Ref Level Att	20.00 dBm 30 dB		5.00 dB 🥌 R 30 ms 🖷 V	BW 1 MHz BW 3 MHz	Mode a	ito Sweep			
●1Pk Max					Hodo Ho				
					М	1[1]	1		37.28 dBm 24760 GHz
10 dBm									
0 dBm									
-10 dBm	-D1 -13.000	dBm							
-20 dBm—									
-30 dBm—									M1
-40 dBm	الاستوالية ويترك الأركارية. الاستوالية ويترك الألية ويترك		A Constraint of the second					and Department of the Part of	
-50 dBm			1						
-60 dBm—									
-70 dBm									
Start 10.0	GHz	I	I	2000	1 pts	I	I	Stop	20.0 GHz
					Mea	suring		<b>4/4</b> 2	9.12.2016 15:05:46

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### 7 Field Strength of Spurious Radiation

Part I - Test Plots

### 7.1 For GSM

### 7.1.1 Test Band = GSM 850

#### 7.1.1.1.1 Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1270.000	-51.43	-13.00	38.43	Vertical
2464.687	-36.90	-13.00	23.90	Vertical
4334.625	-51.20	-13.00	38.20	Vertical
1674.000	-45.57	-13.00	32.57	Horizontal
2455.500	-35.03	-13.00	22.03	Horizontal
4316.625	-50.53	-13.00	37.53	Horizontal

#### 7.1.1.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1892.812	-27.98	-13.00	14.98	Vertical
2510.250	-35.79	-13.00	22.79	Vertical
4022.250	-50.69	-13.00	37.69	Vertical
1833.000	-47.14	-13.00	34.14	Horizontal
2511.000	-34.88	-13.00	21.88	Horizontal
4362.375	-50.79	-13.00	37.79	Horizontal

#### 7.1.1.1.3 Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1892.062	-35.08	-13.00	22.08	Vertical
2511.187	-35.17	-13.00	22.17	Vertical
4087.875	-51.41	-13.00	38.41	Vertical
1385.000	-52.50	-13.00	39.50	Horizontal
2329.687	-44.03	-13.00	31.03	Horizontal
2836.687	-41.49	-13.00	28.49	Horizontal



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### 7.1.2 Test Band = GSM 1900

### 7.1.2.1 Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1278.800	-51.16	-13.00	38.16	Vertical
2453.040	-38.57	-13.00	25.57	Vertical
5609.625	-47.03	-13.00	34.03	Vertical
1484.620	-47.23	-13.00	34.23	Horizontal
2407.460	-43.21	-13.00	30.21	Horizontal
5608.875	-46.06	-13.00	33.06	Horizontal

#### 7.1.2.1.1 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1122.180	-52.91	-13.00	39.91	Vertical
2504.980	-43.10	-13.00	30.10	Vertical
3739.125	-50.59	-13.00	37.59	Vertical
1312.420	-52.55	-13.00	39.55	Horizontal
2492.260	-42.87	-13.00	29.87	Horizontal
5609.625	-45.25	-13.00	32.25	Horizontal

#### 7.1.2.1.2 Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
2462.580	-41.98	-13.00	28.98	Vertical
3739.875	-49.94	-13.00	36.94	Vertical
5609.250	-46.96	-13.00	33.96	Vertical
2462.580	-30.67	-13.00	17.67	Horizontal
3739.875	-51.08	-13.00	38.08	Horizontal
5609.250	-45.19	-13.00	32.19	Horizontal

NOTE:

 All modes are tested, but the data presented above is the worst case. 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.



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### 8 Frequency Stability

### 8.1 Frequency Error VS. Voltage

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	-3.13	-0.00380	PASS
		LCH	TN	VN	2.45	0.00297	PASS
				VH	1.83	0.00222	PASS
				VL	-2.31	-0.00276	PASS
	GSM/TM1	MCH	ΤN	VN	-4.25	-0.00508	PASS
				VH	0.48	0.00057	PASS
				VL	-5.24	-0.00617	PASS
COM		HCH	TN	VN	-2.41	-0.00284	PASS
GSM 850				VH	3.85	0.00454	PASS
650		LCH	TN	VL	2.75	0.00334	PASS
				VN	-3.70	-0.00449	PASS
				VH	4.64	0.00563	PASS
				VL	-2.45	-0.00293	PASS
	GSM/TM2	MCH	ΤN	VN	1.09	0.00130	PASS
				VH	-4.37	-0.00522	PASS
				VL	-3.86	-0.00455	PASS
		HCH	ΤN	VN	2.45	0.00289	PASS
				VH	0.44	0.00052	PASS



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Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict	
				VL	1.43	0.00077	PASS	
		LCH	ΤN	VN	-4.13	-0.00223	PASS	
				VH	2.84	0.00153	PASS	
				VL	-5.24	-0.00279	PASS	
	GSM/TM1	MCH	ΤN	VN	2.80	0.00149	PASS	
				VH	-1.57	-0.00084	PASS	
		НСН		VL	2.54	0.00133	PASS	
			ΤN	VN	-6.42	-0.00336	PASS	
GSM				VH	3.06	0.00160	PASS	
1900		LCH	TN	VL	2.58	0.00139	PASS	
				VN	-2.08	-0.00112	PASS	
				VH	-1.37	-0.00074	PASS	
				VL	3.86	0.00205	PASS	
	GSM/TM2	MCH	ΤN	VN	-2.97	-0.00158	PASS	
				VH	2.15	0.00114	PASS	
				VL	4.82	0.00252	PASS	
		HCH	ΤN	VN	-2.54	-0.00133	PASS	
				VH	-1.88	-0.00098	PASS	



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### 8.2 Frequency Error VS. Temperature

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict											
				-30	-4.33	-0.00525	PASS											
				-20	1.20	0.00146	PASS											
				-10	0.69	0.00084	PASS											
				0	-2.38	-0.00289	PASS											
		LCH	VN	10	0.26	0.00032	PASS											
				20	-4.54	-0.00551	PASS											
				30	-1.60	-0.00194	PASS											
				40	-0.53	-0.00064	PASS											
				50	-6.21	-0.00753	PASS											
				-30	-2.80	-0.00335	PASS											
		M1 MCH		-20	-5.18	-0.00619	PASS											
					-10	-0.79	-0.00094	PASS										
GSM				0	-3.28	-0.00392	PASS											
850	GSM/TM1		MCH	MCH	MCH	MCH	MCH	MCH	MCH	MCH	MCH	MCH V	MCH	VN	10	1.37	0.00164	PASS
							20	2.32	0.00277	PASS								
				30	1.91	0.00228	PASS											
				40	0.55	0.00066	PASS											
				50	-4.35	-0.00520	PASS											
				-30	-0.47	-0.00055	PASS											
				-20	2.68	0.00316	PASS											
				-10	-2.59	-0.00305	PASS											
				0	-5.42	-0.00639	PASS											
		HCH	VN	10	1.17	0.00138	PASS											
				20	-2.78	-0.00328	PASS											
				30	3.74	0.00441	PASS											
				40	-1.63	-0.00192	PASS											
				50	-4.20	-0.00495	PASS											



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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict	
				-30	-2.59	-0.00314	PASS	
				-20	1.96	0.00238	PASS	
				-10	-5.37	-0.00652	PASS	
				0	0.50	0.00061	PASS	
		LCH	VN	10	-4.65	-0.00564	PASS	
				20	-5.11	-0.00620	PASS	
				30	-3.96	-0.00480	PASS	
				40	-5.71	-0.00693	PASS	
				50	-2.44	-0.00296	PASS	
				-30	-1.91	-0.00228	PASS	
				-20	3.29	0.00393	PASS	
				-10	-4.24	-0.00507	PASS	
GSM				0	1.76	0.00210	PASS	
850	GSM/TM2	MCH	MCH V	VN	10	-5.10	-0.00610	PASS
				20	-4.43	-0.00530	PASS	
				30	-2.13	-0.00255	PASS	
				40	-3.20	-0.00383	PASS	
				50	-0.50	-0.00060	PASS	
				-30	-3.21	-0.00378	PASS	
				-20	-6.34	-0.00747	PASS	
				-10	-2.33	-0.00275	PASS	
				0	-5.24	-0.00617	PASS	
		HCH	VN	10	1.07	0.00126	PASS	
				20	-4.03	-0.00475	PASS	
				30	-3.28	-0.00386	PASS	
				40	-2.34	-0.00276	PASS	
				50	-5.07	-0.00597	PASS	



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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict						
				-30	-3.55	-0.00192	PASS						
				-20	-4.45	-0.00241	PASS						
				-10	1.68	0.00091	PASS						
				0	-3.48	-0.00188	PASS						
		LCH	VN	10	-0.88	-0.00048	PASS						
				20	1.08	0.00058	PASS						
				30	-3.39	-0.00183	PASS						
				40	-5.20	-0.00281	PASS						
				50	-4.34	-0.00235	PASS						
				-30	-4.56	-0.00243	PASS						
		M1 MCH		-20	1.27	0.00068	PASS						
				-10	-2.23	-0.00119	PASS						
GSM				0	4.86	0.00259	PASS						
1900	GSM/TM1		MCH	MCH	MCH	MCH	MCH	MCH	VN	10	-3.15	-0.00168	PASS
				20	-6.29	-0.00335	PASS						
				30	-3.27	-0.00174	PASS						
				40	-8.09	-0.00430	PASS						
				50	-5.11	-0.00272	PASS						
				-30	-3.25	-0.00170	PASS						
				-20	4.63	0.00242	PASS						
				-10	1.85	0.00097	PASS						
				0	-2.87	-0.00150	PASS						
		HCH	VN	10	-3.18	-0.00167	PASS						
				20	-4.54	-0.00238	PASS						
				30	2.31	0.00121	PASS						
				40	-2.92	-0.00153	PASS						
				50	-5.24	-0.00274	PASS						



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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict						
				-30	-4.13	-0.00223	PASS						
				-20	-4.00	-0.00216	PASS						
				-10	1.68	0.00091	PASS						
				0	-2.47	-0.00133	PASS						
		LCH	VN	10	-2.55	-0.00138	PASS						
				20	-4.08	-0.00221	PASS						
				30	1.44	0.00078	PASS						
				40	-3.20	-0.00173	PASS						
				50	-5.31	-0.00287	PASS						
				-30	-6.44	-0.00343	PASS						
		12 MCH		-20	-2.30	-0.00122	PASS						
			MCH VN		-10	-4.15	-0.00221	PASS					
GSM				МСН	MCH		0	1.59	0.00085	PASS			
1900	GSM/TM2					MCH	MCH	MCH	MCH	MCH	VN	10	-5.35
					20	-2.66	-0.00141	PASS					
				30	-3.27	-0.00174	PASS						
				40	0.73	0.00039	PASS						
				50	-4.14	-0.00220	PASS						
				-30	-3.43	-0.00180	PASS						
				-20	2.62	0.00137	PASS						
				-10	1.47	0.00077	PASS						
				0	-5.20	-0.00272	PASS						
		НСН	VN	10	-4.51	-0.00236	PASS						
				20	-1.33	-0.00070	PASS						
				30	-2.77	-0.00145	PASS						
				40	-2.42	-0.00127	PASS						
1				50	-6.26	-0.00328	PASS						

The End