



FCC Permissive Change Class2 Radio Test report for the HePA PCS1900 V3 introduction in BTS S8000 (AB6S8000BTS) and S12000 (AB6S12000BTS)

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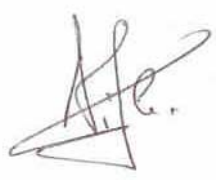
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Author: Hubert MARTEAU BTS HW GSM PI Team	Verified / Approved by Alain CAILLE - BTS HW GSM PI & Regulatory manager 

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1. INTRODUCTION

1.1. OBJECT

This report presents the test data in accordance with FCC Part 24 Subpart E for the FCC and IC Permissive Change Class2 concerning S8000 & S12000 Indoor and Outdoor Base stations in PCS1900 band configured with:

- HePA (GMSK 60W / Edge 45W) PCS1900 module evolution.

HePA1900 has been tested with eDRX1900 association in order to complete the last FCC Files (FCC ID AB6S12000BTS and FCC ID AB6S8000BTS).

These results can be applied for mixed BTS configuration 1900 Band PA (GMSK 30W / Edge 30W) and HePA (GMSK 60W / Edge 45W)

This report presents test data for GMSK modulation and 8PSK modulation (EDGE functionality).

RF Tests concerning FCC Part 24 are performed on the module
HePA PCS1900 (60W) (NTQA50RA Release07 - Serial Number ANDWCS900059)
by RF GSM Department in Radio laboratory – Nortel Networks, Chateaufort(78) - France.

1.2. SCOPE

This document applies to the S8000 & S12000 BTS GSM 1900/850 Outdoor and Indoor versions.

This report introduces a module evolution: HePA (GMSK 60W / Edge 45W) GSM1900 .

Some RF Tests have been also performed in the worst case of BTS configuration: S12000 BTS. As we use same modules eDRX, DRX, HePA, ePA and duplexer in S8000 BTS and S12000 BTS, measurements available in this document done with S12000 BTS can be applied to S8000 BTS.

Radio performances with eDRX1900/HePA1900 can be applied to DRX ND, DRX ND2 associated with HePA1900. Only the GMSK functionality is ensured with DRX ND.

The last certification with eDRX1900 / HePA1900 ensures the FCC compliance of DRX ND/HePA1900 association

1.3. PRODUCT CONFIGURATIONS

As the RF transmit paths are identical in both the Outdoor system and Indoor system, radio test have been performed on indoor or Outdoor BTS version.

Measurements were taken with all available coupling configurations including with duplexer involves the compliance with H2D (two input coupler with 3dB loss coupling associated with duplexer) and the H4D configuration (four input coupler with 7dB loss coupling associated with duplexer).

The systems use both GMSK modulation and 8PSK, testing was done with both modulation types.

2. RELATED DOCUMENTS

2.1. APPLICABLE DOCUMENTS

[A1]	CFR 47 - Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS
[A2]	CFR 47 - Part 24	PERSONAL COMMUNICATIONS SERVICES
[A3]	IC RSS-133	Spectrum Management and Telecommunication Policy – Radio Standards Specifications Issue 3– June 2005

2.2. REFERENCE DOCUMENTS

[R1]	PE/BTS/DJD/0222	FCC Part 24 Type Acceptance Filing for Nortel's S8000 Outdoor BTS AB6OUDS8000
[R2]	PCS/BTS/DJD/0234	AB6OUDS8000: FCC Part 24 Class II Permissive Change Application : S8000 Indoor BTS
[R3]	PCS/BTS/DJD/0730	AB6OUDS8000: FCC Part 24 Class II Permissive Change Application : S8000 Indoor BTS
[R4]	PCS/BTS/DJD/0743	S8000 Outdoor and Indoor BTS GSM 1900 : FCC Part 24 Class II Permissive Change Application AB6OUDS8000

- [R5] PCS/BTS/DJD/0746 S8000 Outdoor and Indoor BTS GSM 1900
: FCC Part 24 Class II Permissive Change
Application AB6OUDS8000
- [R6] PCS/BTS/DJD/04574 S8000 Outdoor and Indoor BTS GSM 1900
: FCC Part 24 Class II Permissive Change
Application AB6OUDS8000
- [R7] PE/BTS/DJD/002630 S8000 Outdoor and Indoor BTS eGSM 850
FCC Part 22 : exhibits documents
- [R8] PE/BTS/DJD/4233 S12000 Indoor BTS GSM 850 / PCS 1900:
FCC Part 22 / FCC Part 24 Certification
Filing for Nortel AB6INDS12000
exhibits document
- [R9] PE/BTS/DJD/4248 S12000 Outdoor BTS GSM 850 / PCS 1900:
FCC Part 22 / FCC Part 24 Certification
Filing for Nortel AB6OUTS12000
exhibits document
- [R10] PCS/BTS/DJD/05945 FCC Part 24/Part22 Test Report for S8000
Indoor and Outdoor Base stations FCC
ID#AB6S8000
- [R11] 60039646-539500- Radio Test report in extreme condition for the
R-TR-FCC introduction of HePA 850 on GSM
S8000/S12000
- [R12] PCS/BTS/DJD/017459
FCC Part 24/Part22 Test Report for S8000 Indoor and
Outdoor Base stations FCC ID#AB6S8000BTS
- [R13] PCS/BTS/DJD/017461
FCC Part 24/Part22 Test Report for S12000 Indoor and
Outdoor Base stations FCC ID#AB6S12000BTS

3. ABBREVIATIONS & DEFINITIONS

3.1. ABBREVIATIONS

DRX	Driver Receiver Unit
e-DRX	EDGE DRX
BCF	Base Common Function
BTS	Base Transceiving Station
GSM	Global System for Mobile Communications
GPRS	General Packet Radio Service
EDGE	Enhanced Data for GSM Evolution
PDTCH	Packet Data Logical Channel
PA	Power Amplifier
e-SCPA	EDGE Single Carrier PA
HePA	Edge High Power Amplifier
LNA	Low Noise Amplifier
OMC	Operation and Maintenance Center
TCU	Trans-Coding Unit
MSC	Mobile Switching Center
RF	Radio Frequency
Tx	Transmitter

4. EXHIBIT 1: TEST REPORT FOR PCS1900 PA 60W

4.1. INTRODUCTION

The following information is submitted for update of the type acceptance of a Broadband PCS Base Station for Northern Telecom, Inc., in accordance with FCC Part 24, Subpart E and Part 2, Subpart J of the FCC Rules and Regulations.

The measurement procedures were in accordance with the requirements of Part 2.

4.2. MEASUREMENT RESULTS

Table 1 is a summary of the measurement results for this update.

Table 1 : Measurement Results Summary

FCC Measurement Specification	IC Limit Specification	Description	Result	Note
2.1046(a), 2.1033(c)(8) 24.232	6.2	RF Power Output	Complies	
2.1049		Occupied Bandwidth	Complies	
2.1051, 2.1057 24.238	6.3 6.4	Spurious Emissions at Antenna Terminals	Complies	

4.3. NAME OF TEST : 2.1046 RF POWER OUTPUT

TEST RESULTS

Table 2 shows the test results for RF Output Power with the diplexer configuration:

- For GMSK modulation
- For 8PSK modulation supported by eDRX/HePA 1900.

Band	Radio Channel	Frequency (MHz)	Measured RF Output Power (dBm) GMSK	Measured RF Output Power (dBm) 8PSK	Limit (dBm)
A	512	1930,2	46,3	45,5	50
A	548	1937,4	46,5	45,7	50
A	585	1944,8	46,6	45,9	50
D	587	1945,2	46,7	45,9	50
D	598	1947,4	46,7	46,0	50
D	610	1949,8	46,7	46,0	50
B	612	1950,2	46,7	46,0	50
B	648	1957,4	46,7	45,9	50
B	685	1964,8	46,6	46,1	50
E	687	1965,2	46,7	46,0	50
E	698	1967,4	46,7	45,9	50
E	710	1969,8	46,6	46,0	50
F	712	1970,2	46,6	46,0	50
F	723	1972,4	46,5	45,8	50
F	735	1974,8	46,5	45,9	50
C	737	1975,2	46,6	46,5	50
C	773	1982,4	46,5	45,8	50
C	810	1989,8	46,5	45,8	50

Table 3 shows the test results for RF Output Power with the H2D configuration:

- For GMSK modulation
- For 8PSK modulation supported by eDRX/HePA 1900.

Band	Radio Channel	Frequency (MHz)	Measured RF Output Power (dBm) GMSK	Measured RF Output Power (dBm) 8PSK	Limit (dBm)
A	512	1930,2	42,8	41,9	50
A	548	1937,4	43,1	42,2	50
A	585	1944,8	43,3	42,4	50
D	587	1945,2	43,2	42,4	50
D	598	1947,4	43,3	42,4	50
D	610	1949,8	43,3	42,5	50
B	612	1950,2	43,3	42,5	50
B	648	1957,4	43,3	42,5	50
B	685	1964,8	43,3	42,6	50
E	687	1965,2	43,3	42,5	50
E	698	1967,4	43,3	42,5	50
E	710	1969,8	43,3	42,5	50
F	712	1970,2	43,3	42,5	50
F	723	1972,4	43,2	42,5	50
F	735	1974,8	43,2	42,5	50
C	737	1975,2	43,2	42,5	50
C	773	1982,4	43,2	42,5	50
C	810	1989,8	43,1	42,3	50

4.4. NAME OF TEST: 2.1049 OCCUPIED BANDWIDTH

TEST RESULTS

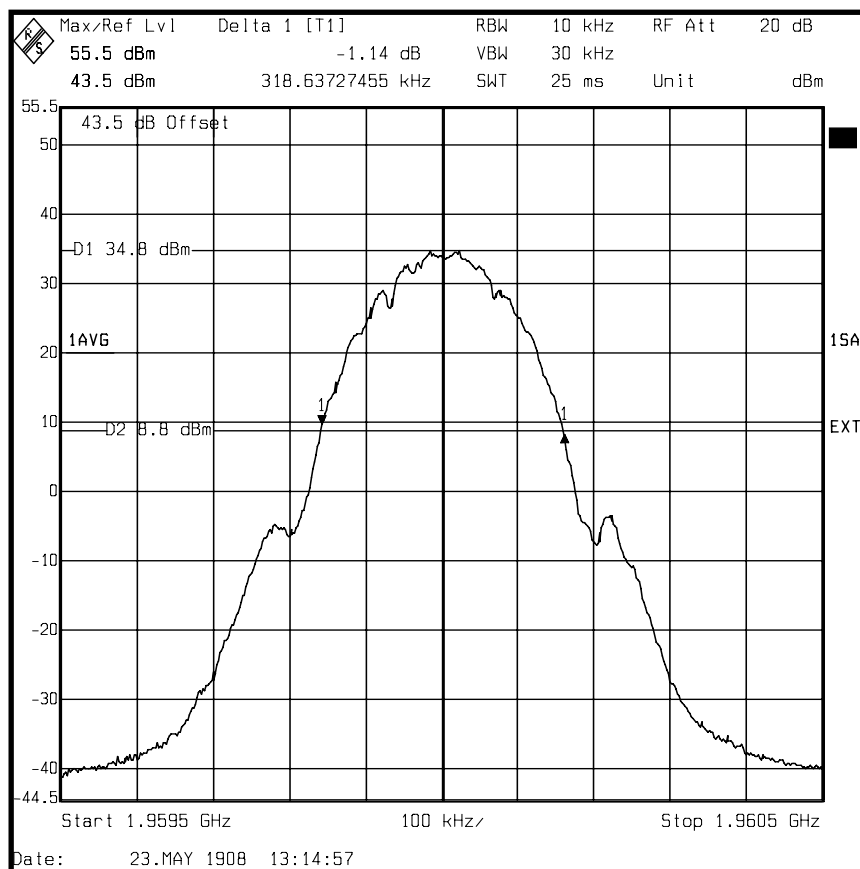
The occupied bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

The maximum occupied bandwidth was found to be:

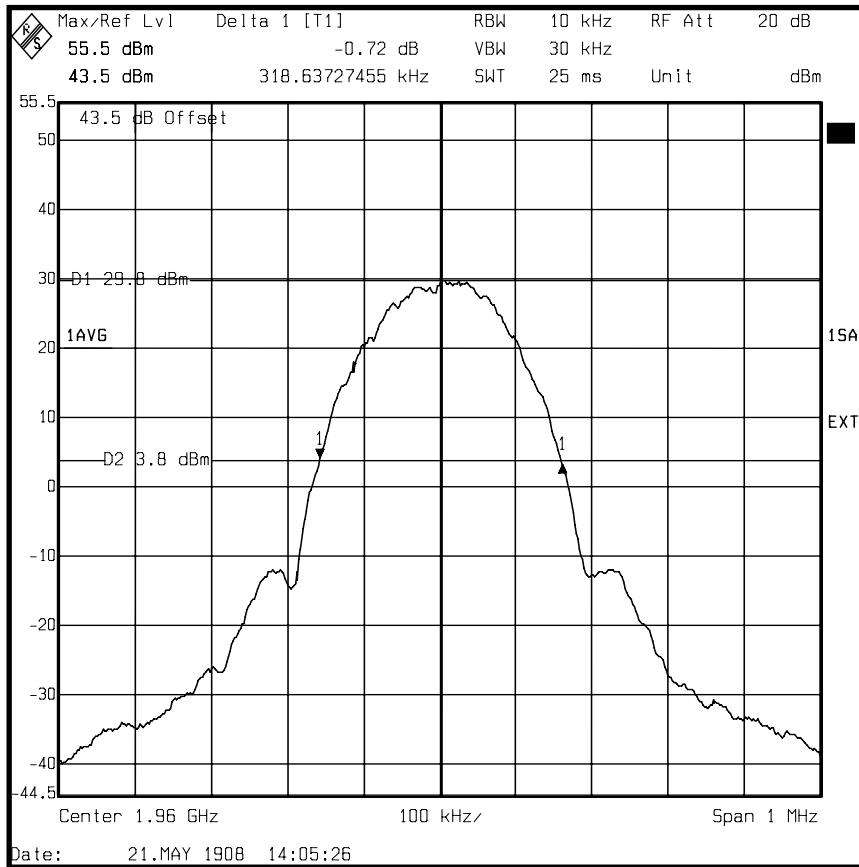
318 kHz, measured on channel 661, $f = 1960.0$ MHz GMSK modulation.

318 kHz, measured on channel 661, $f = 1960.0$ MHz 8PSK modulation.

Figure 1: Sample plot for occupied bandwidth. GMSK modulation



Occupied bandwidth
Figure 2 : Sample plot for occupied bandwidth . 8PSK modulation



4.5. SPURIOUS EMISSIONS AT ANTENNA TERMINALS

TEST RESULTS

The reference level for spurious emissions at the antenna terminals is taken from the measured output power (46.5 dBm = 44.6 Watts).

Therefore the spurious emissions must be attenuated by at least $43 + 10 * \text{Log}(44.6) = 59.5$ dB. The measured output power was 46.5 dBm ; therefore the limit is $46.5 - 59.5 = -13$ dBm.

Spurious measurement is performed with the worst configuration with Duplexer coupling and 30W Power amplifier.

The Nominal power at antenna connector: PD max =46.7dBm.

The test compliance with duplexer involves the compliance with H2D (two input coupler with 3dB loss coupling associated with duplexer) and the compliance with H4D configuration (four input coupler with 7dB loss coupling associated with duplexer).

Tables 3 and 4 show the results for Spurious Emissions at Antenna Terminals.

Table 3 : Test results for Spurious Emissions at Antenna Terminals with the duplexer for GMSK modulation.

	Channel	Power emission level	Spurious Emissions Level (dBm)	Limit (dBm)	Margin (dB)
A	512	Pmax - 4 dB	-14,6	-13	1,6
A	585	Pmax - 4 dB	-13,9	-13	0,9
D	587	Pmax - 4 dB	-14,5	-13	1,5
D	610	Pmax - 4 dB	-13,1	-13	0,1
B	612	Pmax - 4 dB	-14,2	-13	1,2
B	685	Pmax - 4 dB	-13,3	-13	0,3
E	687	Pmax - 4 dB	-14,4	-13	1,4
E	710	Pmax - 4 dB	-13,5	-13	0,5
F	712	Pmax - 4 dB	-14,2	-13	1,2
F	735	Pmax - 4 dB	-13,6	-13	0,6
C	737	Pmax - 4 dB	-14,5	-13	1,5
C	810	Pmax - 4 dB	-13,1	-13	0,1

Table 4 : Test results for Spurious Emissions at Antenna Terminals with the diplexer for 8PSK modulation

	Channel	Power emission level	Spurious Emissions Level (dBm)	Limit (dBm)	Margin (dB)
A	512	P max	-13,5	-13	0,5
A	585	P max	-13,5	-13	0,5
D	587	P max	-13,5	-13	0,5
D	610	P max	-13,6	-13	0,6
B	612	P max	-13,0	-13	0,0
B	685	P max	-13,6	-13	0,6
E	687	P max	-13,3	-13	0,3
E	710	P max	-13,9	-13	0,9
F	712	P max	-13,4	-13	0,4
F	735	P max	-14,3	-13	1,3
C	737	P max	-13,5	-13	0,5
C	810	P max	-13,9	-13	0,9

**Table 5 : Test results for Spurious Emissions at Antenna Terminals
with diplexer for GMSK modulation.**

Frequency (MHz)	Spurious Emissions Level (dBm)	Limit (dBm)	Margin (dB)
0,1	-36,4	-13,0	23,4
7,9	-26,0	-13,0	13
68,0	-29,4	-13,0	16,4
1189,4	-26,7	-13,0	13,7
1972,6	-33,1	-13,0	20,1
1974,3	-40,1	-13,0	27,1
1991,0	-23,3	-13,0	10,3
3979,9	-26,9	-13,0	13,9
6957,9	-33,5	-13,0	20,5
10917,8	-34,7	-13,0	21,7

Notes :

GMSK modulation measurements:

Figures from 3 to 4 show samples plots for the case when the transmitter was tuned with the power reduced by 4 dB in diplexer configuration for different Edge Channel 512, 585, 737, 810.

8PSK modulation measurements:

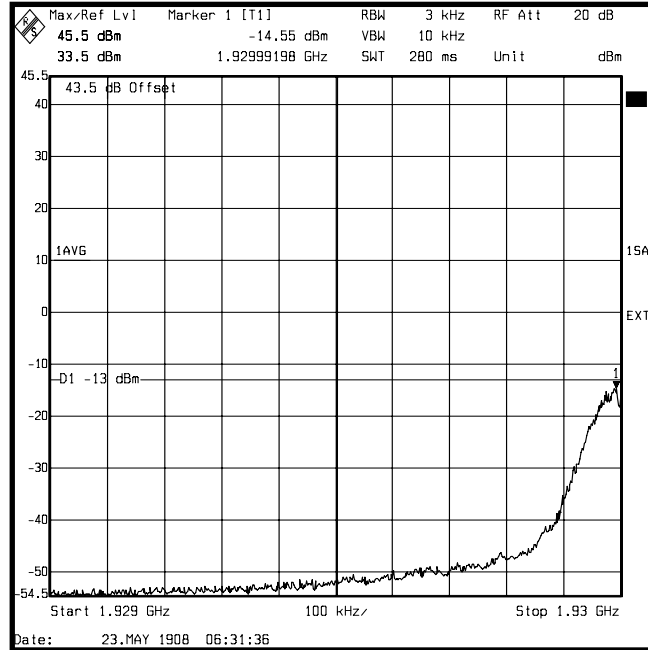
Figures from 5 to 6 show sample plots for the case when the transmitter was tuned at maximum power in diplexer configuration.

Out of band measurement in GMSK modulation:

Figures from 7 to 10 show sample plots for frequency spans from 0 to 20 GHz with emission on channel 810 at maximum power with diplexer configuration.

Figure 3 :

**-1 MHz adjacent band (Channel 512, Pmax - 4 dB)
Diplexer only, GMSK modulation**



**+1 MHz adjacent band (Channel 585, Pmax - 4 dB)
Diplexer only, GMSK modulation**

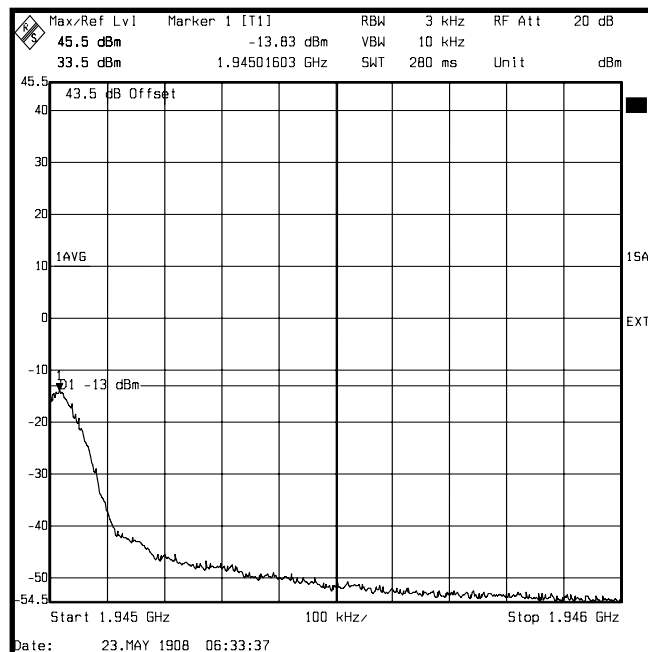
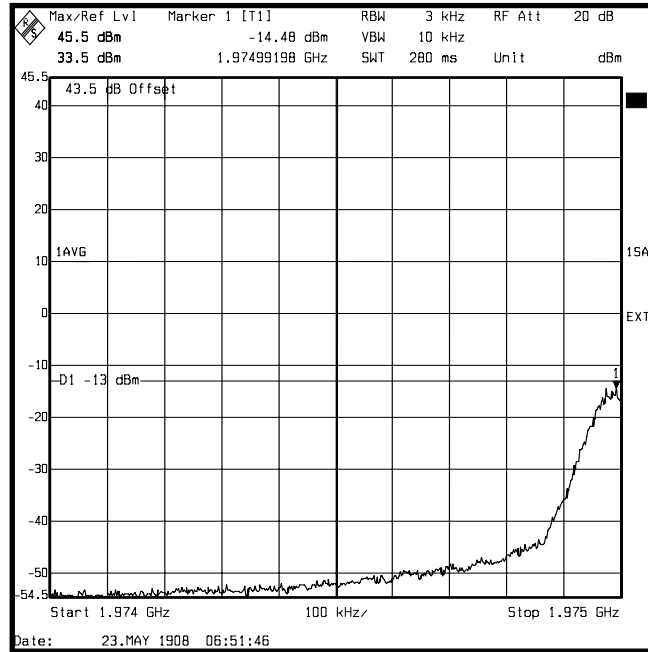


Figure 4 :

**-1 MHz adjacent band (Channel 737, Pmax - 4 dB)
Diplexer only, GMSK modulation**



**+1 MHz adjacent band (Channel 810, Pmax - 4 dB)
Diplexer only, GMSK modulation**

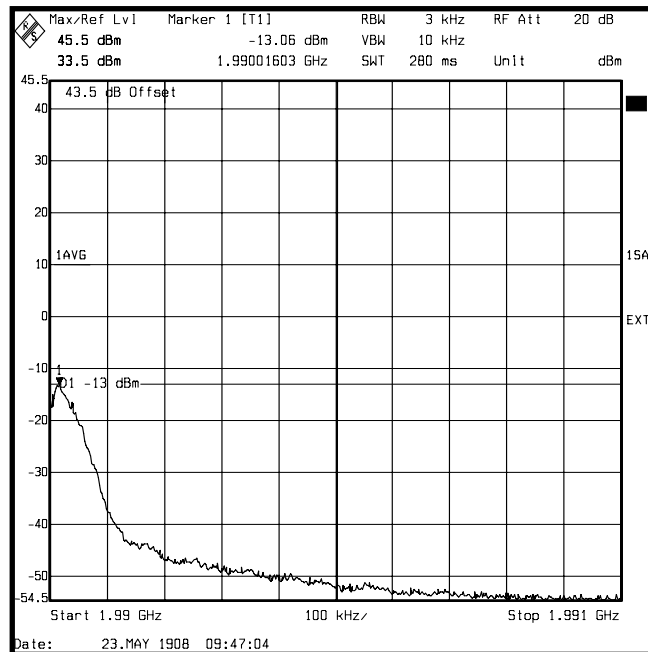
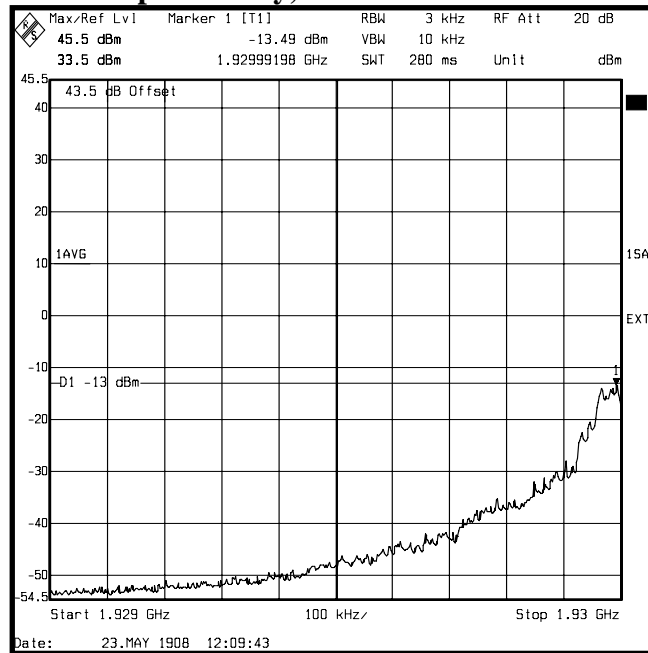


Figure 5:

**- 1 MHz adjacent band (Channel 512, Pmax)
Diplexer only, 8PSK modulation.**



**+ 1 MHz adjacent band (Channel 585, Pmax)
Diplexer only, 8PSK modulation.**

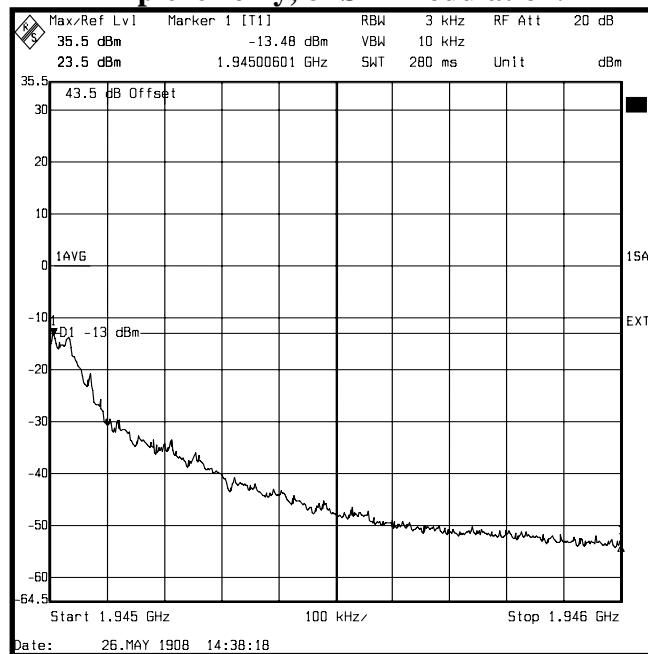
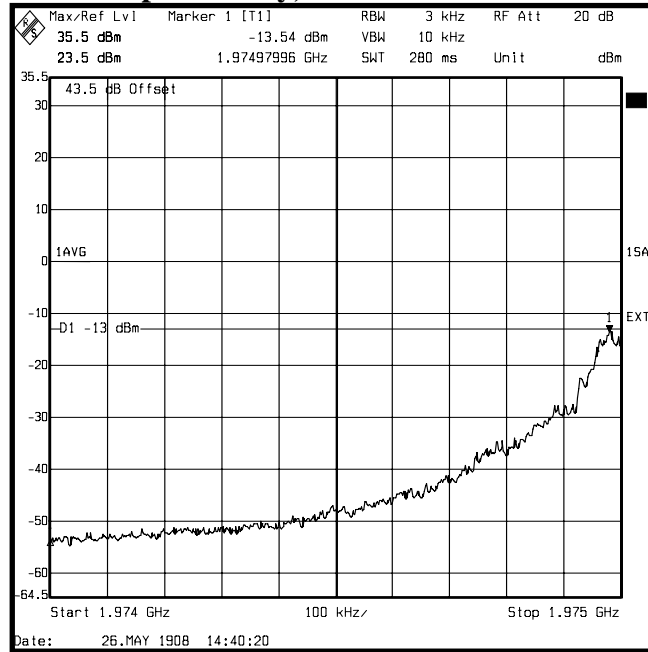


Figure 6 :

**- 1 MHz adjacent band (Channel 737, Pmax)
Diplexer only, 8PSK modulation.**



**+ 1 MHz adjacent band (Channel 810, Pmax)
Diplexer only, 8PSK modulation.**

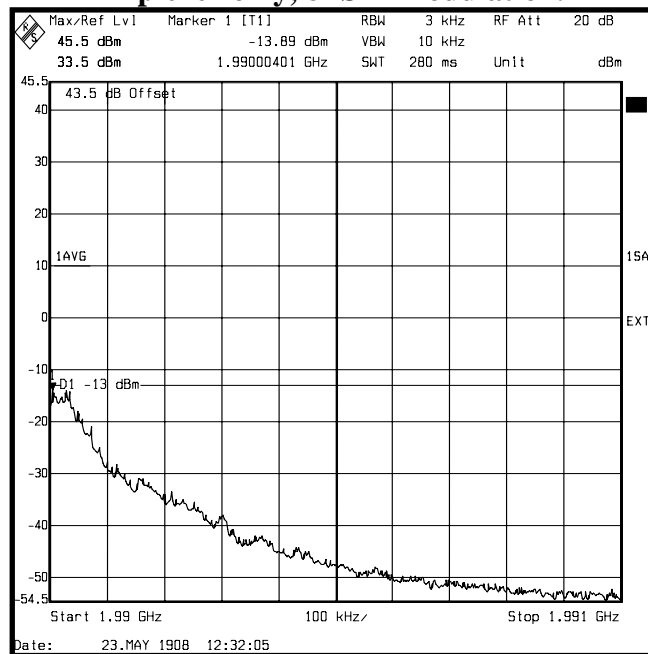
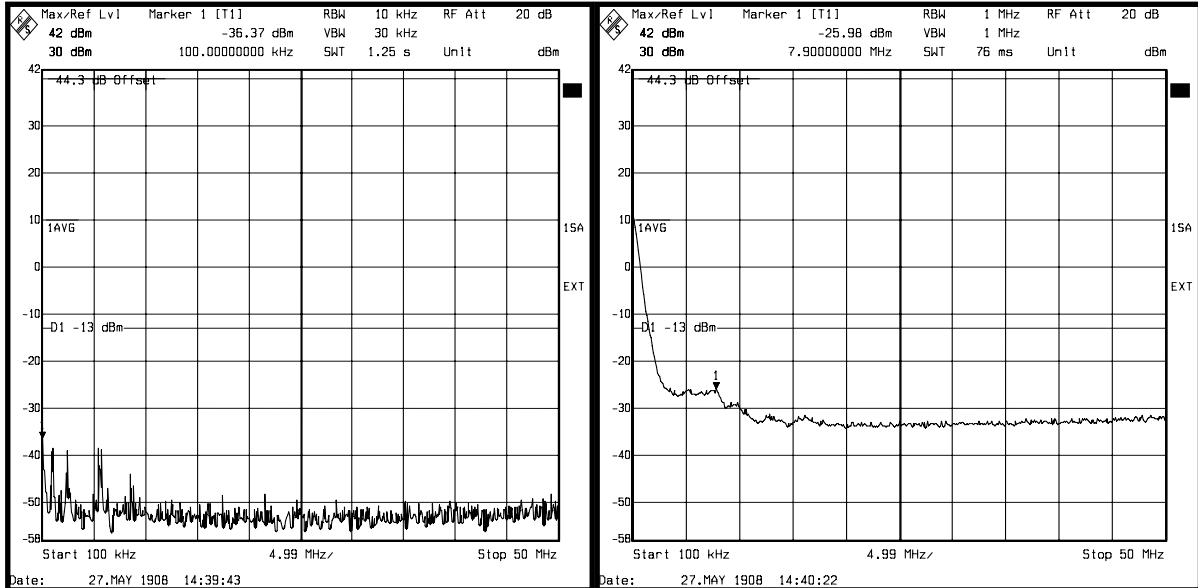


Figure 7: Out of block emissions (Channel 810, Pmax)

GMSK modulation

Band 100kHz – 50 MHz

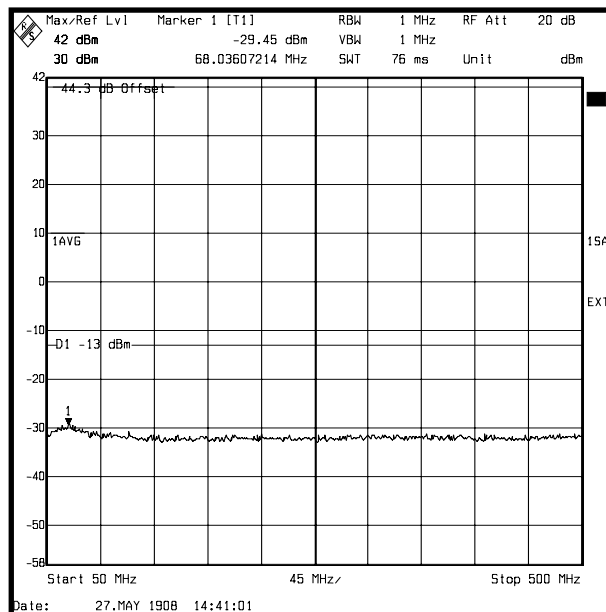


RBW = 10 kHz

RBW = 1 MHz (*)

(*) Note : spectrum lines at 100 kHz is internal DC spectrum line of analyzer.

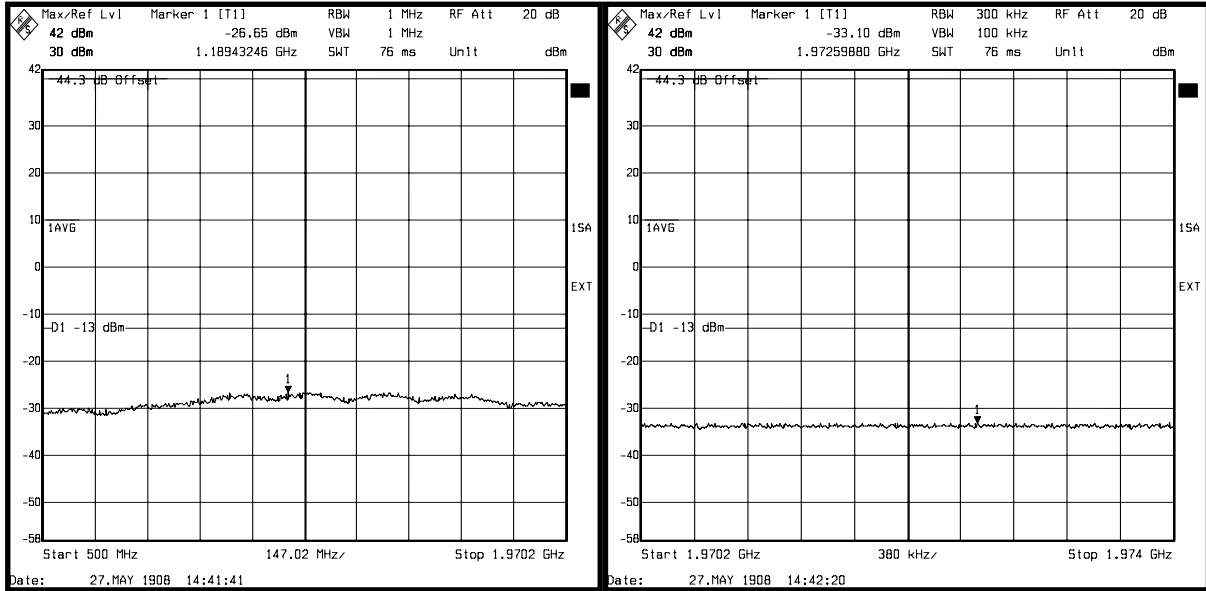
Band 50 MHz – 500MHz



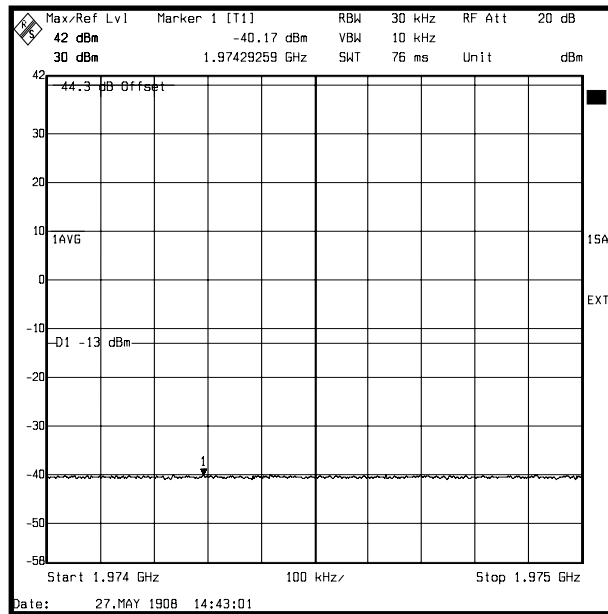
**Figure 8 : Out of block emissions (Channel 810, Pmax)
 GMSK modulation**

Band 500 MHz- 1970.2 MHz

Band 1970.2 – 1974 MHz

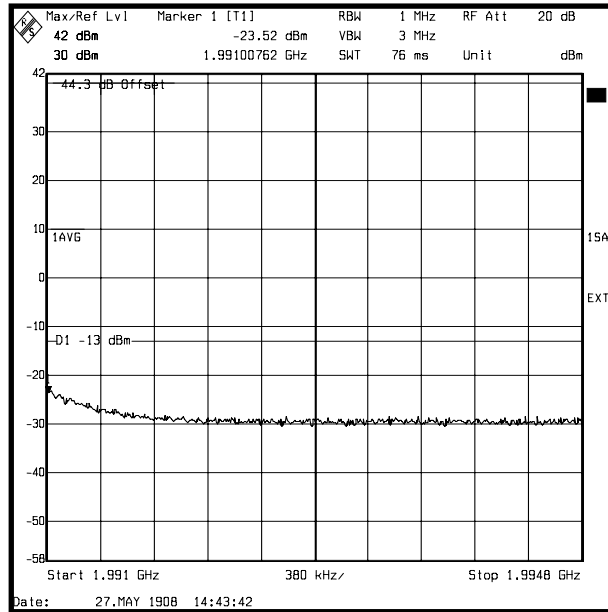


Band 1974 MHz - 1975 MHz

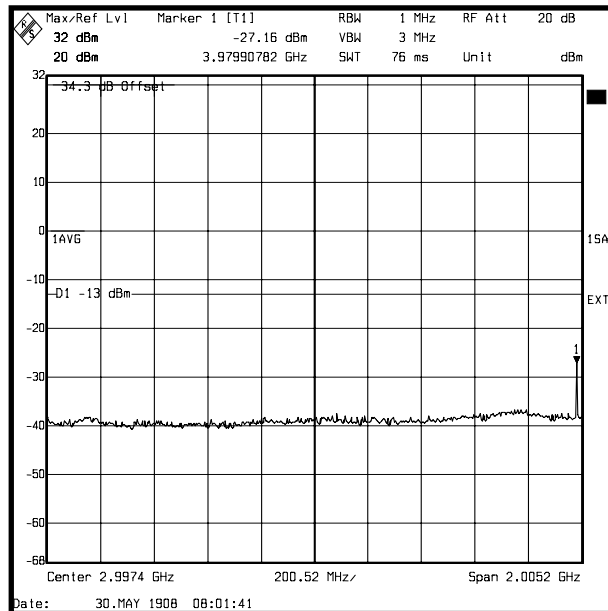


**Figure 9: Out of block emissions (Channel 810, Pmax)
GMSK modulation**

Band 1991 MHz - 1994.8 MHz

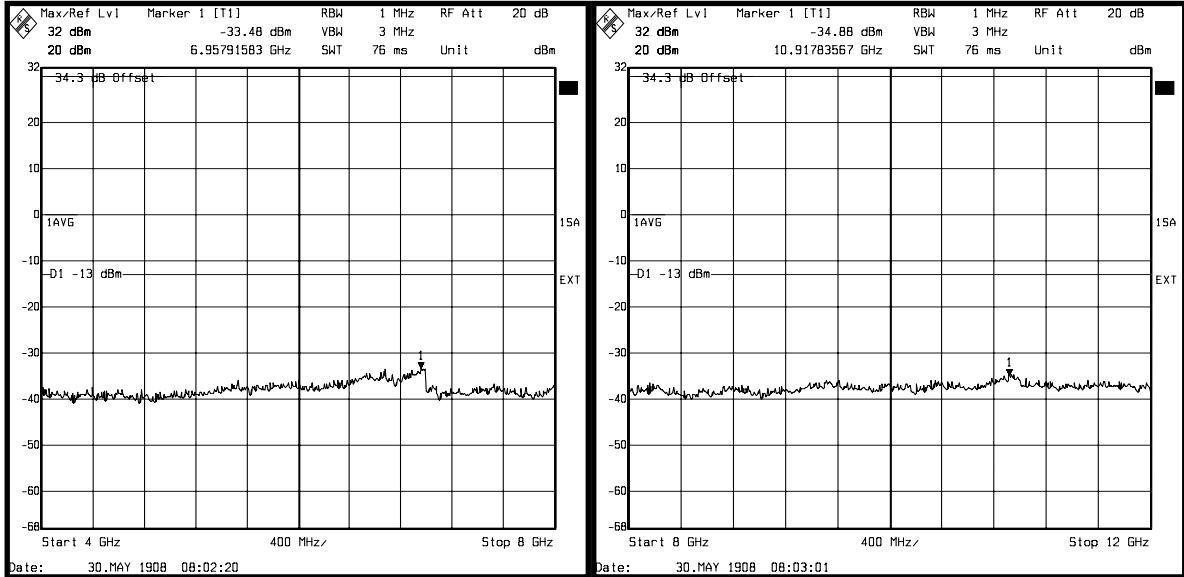


Band 1994.8 MHz - 4 GHz

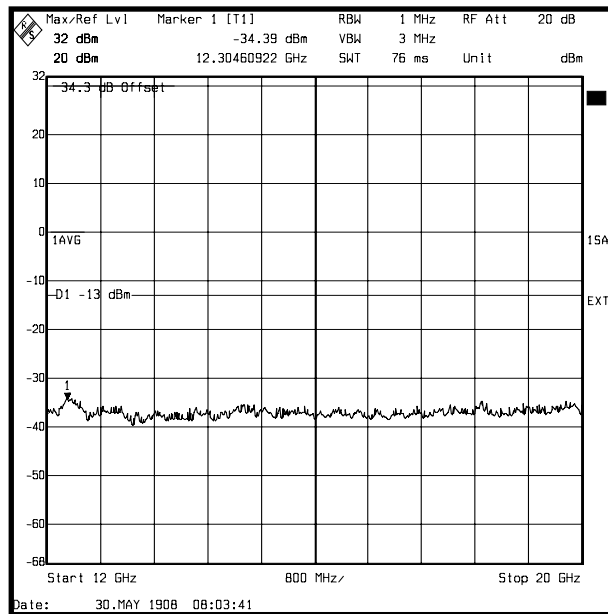


**Figure 10: Out of block emissions (Channel 810, Pmax)
 GMSK modulation**

Band 4 – 12 GHz



Band 12 - 20 GHz



Conclusion :

For the HePA PCS1900 module sample tested :

Table 6: Edge channel Power limitation for PCS1900 60W emission.

Coupling configuration	System Power limitation GMSK modulation	System Power limitation 8 PSK modulation (If 8PSK is supported by modules)
Diplexer Tx Filter	Power Limitation : $P_{max} - 4 \text{ dB} = 42.7 \text{ dBm}$	$P_{max} = 46 \text{ dBm}$

▪ **GMSK modulation:**

The worst case is the Duplexer configuration and emission power has been done at $P_{D \text{ max}} - 4\text{dB} = 42.7 \text{ dBm}$

In order to comply with the emission limits in the 1 MHz bands immediately outside and adjacent to the frequency block, the absolute transmit power level of the block edge channels is set to **42.7 dBm** for GMSK modulation.

$P_{max}-4\text{dB}$ power restriction gives any spurious margin for the module under test, the Power restriction is kept to $P_{max}-6\text{dB}$ for GMSK/Duplexer.

There is no performances modification regarding edge channel for the FCC Id = (AB6S8000BTS) (AB6S12000BTS)

▪ **8PSK modulation:**

eDRX and eSCPA 1900 support 8 PSK modulation.

In the worst configuration (Duplexer) , **maximum emission power $P=46 \text{ dBm}$** allows to be compliant with the spurious emission limits (-13 dBm) in the 1 MHz bands immediately outside and adjacent to the frequency block for 8PSK modulation.

P_{max} power gives any spurious margin for the module under test, the Power restriction is kept to $P_{max}-2\text{dB}$ for 8PSK/Duplexer.

There is no performances modification regarding edge channel for the FCC Id = (AB6S8000BTS) (AB6S12000BTS)

5. MEASUREMENT EQUIPMENT LIST

List of all of the measurement equipment used in this report.

Equipment description	Manufacturer	Model	Serial No.	V/A date
Power Meter	Giga-tronics	8542C	522393	24/10/07
Spectrum Analyser	R&S	FSEA	520564	16/01/06
Spectrum Analyser	R&S	FSEM	517751	01/03/07
Signal Generator	R&S	SMT 03	509923	09/06
30 dB attenuator 100 W	Spinner		25483	
20 dB attenuator 80 W	Radiall		R417720118	

6. EXHIBIT 2 : UPDATED EQUIPMENT LIST

The radio performances are not impacted by the introduction of HePA PCS1900 (60W) new version .

- PCS 1900 Radio Modules used with the 60W High Power Amplifier configuration

Radio Modules GSM 1900		
GSM 1900 eDRX	NTQA88PA	EDRX PCS1900 (GMSK / 8PSK)
GSM 1900 High Power Amplifier	NTQA50RA	HePA (60 W GMSK / 45W 8PSK)
GSM 1900 DRX ND (*)	NTQA01DA	DRX ND / ND2 PCS1900 (GMSK)
GSM 1900 High Power Amplifier	NTQA50RA	HePA (60 W GMSK)
GSM 1900 Duplexer	NTQA51DA NTQA51FA	Without TOS meter With TOS meter
GSM1900 Tx Filter	NTQA52CA NTQA52CB	Without TOS meter With TOS meter
GSM 1900 Two Ways Hybrid Duplexer (60W Power handling)	NTQA38KA NTQA38LA	Without TOS meter With TOS meter
GSM 1900 Four Ways Hybrid Duplexer	NTQA52BA NTQA52BB	Without TOS meter With TOS meter
GSM 1900 Splitter	NTQA10AA	Rx Splitter for Rx way only

(*) New software release introduction allow the functionality of HePA1900 with DRX ND/ND2 in GMSK modulation.

Power limitation to comply to Adjacent Band spurious at antenna connector :

Coupling configuration	System Power limitation	System Power limitation
	GMSK modulation	8 PSK modulation
Diplexer Tx Filter	Power Limitation : $P_{max} - 6 \text{ dB} = 40.5 \text{ dBm}$	Power Limitation : $P_{max} - 2 \text{ dB} = 43.8 \text{ dBm}$
H2D	Power Limitation : $P_{max} - 2 \text{ dB} = 41 \text{ dBm}$	$P_{max} = 42 \text{ dBm}$
H4D	$P_{max} = 40 \text{ dBm}$	$P_{max} = 39 \text{ dBm}$

• **PCS1900 Radio Modules used with 30W Power Amplifier configuration**

Description	Hardware code	Comment
Radio Modules GSM 1900		
GSM 1900 DRX	NTQA01DA	DRX ND / ND2 PCS1900 (GMSK)
GSM 1900 Power Amplifier	NTQA50DB	PA GMSK 30W
GSM 1900 eDRX	NTQA88PA	EDRX PCS1900 (GMSK / 8PSK)
GSM 1900 Power Amplifier	NTQA50GA	eSCPA (GMSK / 8PSK) 30W
GSM 1900 Diplexer	NTQA51DA NTQA51FA	Without TOS meter With TOS meter
GSM1900 Tx Filter	NTQA52CA NTQA52CB	Without TOS meter With TOS meter
GSM 1900 Two Ways Hybrid Duplexer	NTQA51AA NTQA51BA	Without TOS meter With TOS meter
GSM 1900 Four Ways Hybrid Duplexer	NTQA52BA NTQA52BB	Without TOS meter With TOS meter
GSM 1900 Splitter	NTQA10AA	Rx Splitter for Rx way only

Power limitation to comply to Adjacent Band spurious at antenna connector :

Coupling configuration	System Power limitation GMSK modulation	System Power limitation 8 PSK modulation (If 8PSK is supported by modules)
Diplexer Tx Filter	Power Limitation : $P_{max} - 4 \text{ dB} = \mathbf{40 \text{ dBm}}$	$P_{max} = 44 \text{ dBm}$
H2D	$P_{max} = 41 \text{ dBm}$	$P_{max} = 41 \text{ dBm}$
H4D	$P_{max} = 37 \text{ dBm}$	$P_{max} = 37 \text{ dBm}$

• **GSM850 Radio Modules used with 30W Power Amplifier configuration**

Description	Hardware code	Comment
Radio Modules GSM 850		
GSM 850 DRX	NTQA88HA	eDRX
GSM 850 Splitter	NTQA88XA	
GSM 850 Power Amplifier	NTQA37AA	eSCPA
Full Band coupling (Tx Band 869-894 MHz)		
GSM 850 Duplexer	NTQA38GA NTQA38FA	Without TOS meter With TOS meter
GSM 850 Tx Filter	NTQA39CA NTQA39DA	Without TOS meter With TOS meter
GSM 850 Two Ways Hybrid Duplexer	NTQA38JA NTQA38HA	Without TOS meter With TOS meter
Part Band coupling (Tx Band 869- 891.5 MHz)		
GSM 850 Duplexer	NTQA38CA NTQA38DA	Without TOS meter With TOS meter
GSM 850 Tx Filter	NTQA39AA NTQA39BA	Without TOS meter With TOS meter
GSM 850 Two Ways Hybrid Duplexer	NTQA38BA NTQA38AA	Without TOS meter With TOS meter

Power limitation to comply to Adjacent Band spurious at antenna connector :

Coupling configuration	System Power limitation GMSK modulation	System Power limitation 8 PSK modulation (If 8PSK is supported by modules)
Diplexer Tx Filter	Power Limitation : Pmax – 2 dB = 42 dBm Except ARFCN 238 , 241 : Pmax	Power Limitation : Pmax – 2 dB = 42 dBm Except ARFCN 238 , 241 : Pmax
H2D	Pmax = 41 dBm	Pmax= 41 dBm

For Edge Channel ARFCN 128, 131, 133, 181, 183, 231, 233, 251, power has to be reduced by 2dB in order to meet spurious emission requirement.

For Edge Channel ARFCN 238, 241, maximum power (44dBm) is allowed to meet spurious emission requirement.

• **GSM850 Radio Modules used with 60W Power Amplifier configuration**

Description	Hardware code	Comment
Radio Modules GSM 850		
GSM 850 DRX	NTQA88HA	eDRX
GSM 850 Splitter	NTQA88XA	
GSM 850 High Power Amplifier	NTQA50UA	GSM850 HePA (GMSK 60W / 8PSK 45W)
Full Band coupling (Tx Band 869-894 MHz)		
GSM 850 Duplexer	NTQA38GA NTQA38FA	Without TOS meter With TOS meter
GSM 850 Tx Filter	NTQA39CA NTQA39DA	Without TOS meter With TOS meter
GSM 850 Two Ways Hybrid Duplexer	NTQA38JA NTQA38HA	Without TOS meter With TOS meter
Part Band coupling (Tx Band 869- 891.5 MHz)		
GSM 850 Duplexer	NTQA38CA NTQA38DA	Without TOS meter With TOS meter
GSM 850 Tx Filter	NTQA39AA NTQA39BA	Without TOS meter With TOS meter
GSM 850 Two Ways Hybrid Duplexer	NTQA38BA NTQA38AA	Without TOS meter With TOS meter

Power limitation to comply to Adjacent Band spurious at antenna connector :

Coupling configuration	System Power limitation GMSK modulation	System Power limitation 8 PSK modulation
Duplexer Tx Filter	Power Limitation : Pmax – 6 dB = 40.4 dBm Except ARFCN 238 , 241 : Pmax	Power Limitation : Pmax – 4 dB = 41.9 dBm Except ARFCN 238 , 241 : Pmax
H2D	Power Limitation : Pmax – 2 dB = 41.2 dBm Except ARFCN 238, 241 : Pmax	Pmax= 42.6 dBm

For Edge Channel ARFCN 128, 131, 133, 181, 183, 231, 233, 251, power has to be reduced by 6dB (GMSK) or 4dB(8PSK) in order to meet spurious emission requirement.

For Edge Channel ARFCN 238, 241, maximum power has allowed to meet spurious emission requirement.

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