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**Test Plan for Dual Band GSM 850 & PCS1900 BTS 6000 Cabinets Radio Qualification  
(FCC & 3GPP)**

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Author : Alain CAILLE

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# 1. INTRODUCTION

## 1.1. OBJECT

This document presents the radio qualification plan for Dual Band GSM850 /PCS1900 BTS 6000.

Dual Band GSM850/PCS1900 BTS 6000 equipments are with following Radio modules:

- RM PCS1900 equipped with BPM30W (GMSK & 8PSK) and DDM coupling module in PCS1900 Band.  
These modules have been already introduced in BTS6K in previous Qualification.
- HPRM 3T GSM850 equipped with BPM (60W GMSK & 45W 8PSK) and DDM coupling module in GSM850 Band.  
This qualification introduces these GSM850 Radio modules (already introduced in BTS18000 during Q1\_2007) in the BTS 6000.
- During this qualification, we introduced also the logical board RICAM in BTS 6000. The RICAM (equivalent IFM+ 2 ICM+ 1 ABM) has also introduced and validated in BTS18000.

BTS 6000 are equipped with the module as BTS18000 with equivalent radio paths.

Radio Qualification has been performed on BTS18000 and BTS18000 radio performances are applicable to BTS6000.

The BTS6000 radio qualification is performed in order to check the most critical radio performances which could be impacted by the BTS6000 configuration.

### **The Following RF performances tests will be performed to check FCC compliance and 3GPP TS11.21 compliance and IC RSS-133 compliance :**

- At ambient temperature. Radio tests will be performed in BTS 6000 OUTDOOR (AC )

The BTS 6000 will be equipped with Dual Band RM GSM850 & RM PCS1900.  
Some critical 3GPP and FCC radio performances will be checked with this dual configuration.

- At extreme temperature. Radio tests will be performed in following configuration :
  - OUTDOOR BTS 6000 (AC supply ) & Full GSM850 radio modules  
FCC tests & Critical 3GPP performances
  - OUTDOOR BTS 6000 (DC supply ) & Full GSM850 radio modules  
FCC Tests & Critical 3GPP performances
  - INDOOR BTS 6000 (DC supply) & Full GSM850 radio modules  
FCC Tests  
The Indoor BTS 6000 AC version is also covered by BTS 6000 OUTDOOR (AC )

Radio Tests will be performed in GMSK & 8PSK modulation

## 2. RELATED DOCUMENTS

### 2.1. APPLICABLE DOCUMENTS

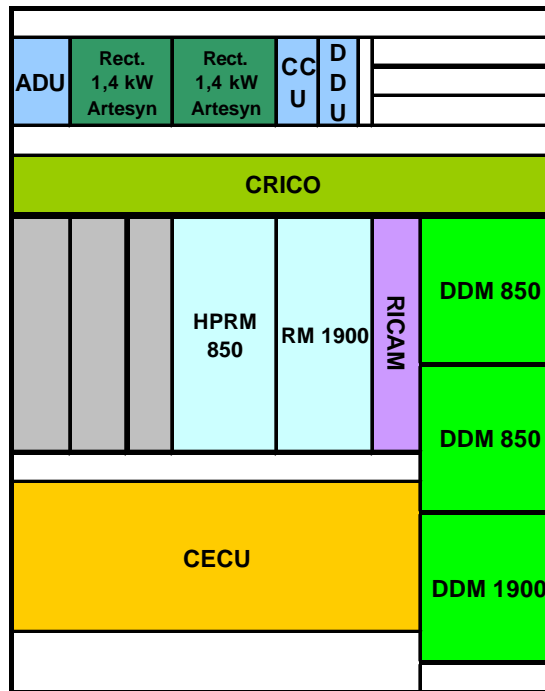
[A1]	3GPP TS 05.05 – V8.7.1	Release 1999 Digital Cellular Telecommunication System Phase 2+ Radio Transmission and Reception
[A2]	3GPP TS 11.21 – V8.9.0	Release 1999 Base Station System (BSS) Equipment Specification – Radio Aspects
[A3]	47CFR Part 24	PERSONAL COMMUNICATIONS SERVICES January 2003
[A4]	47CFR Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS October 2003
[A5]	IC RSS-133	Spectrum Management and Telecommunication Policy - Radio Standards Specifications Issue 3 – June 2005

### 3. BTS 6000 RF QUALIFICATION TESTS FOR 3GPP PERFORMANCE

The RF performances will be performed in Dual Band GSM850/PCS1900 at BTS 6000 antenna connector.

#### 3.1. OUTDOOR GSM 6000 BTS: RF TESTS IN NORMAL CONDITION

- GSM 850 OUTDOOR BTS 6000 AC VERSION configuration .



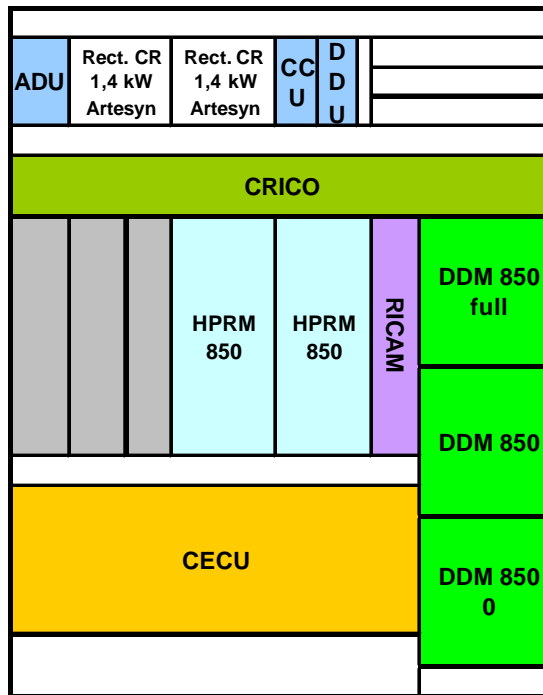
- Radio performance Tests :

Radio performances are measured on Tx0 / Rx0 way.

BTS 6000 OUTDOOR AC Dual Band PCS1900 / GSM850			
	Tests	RM850 + DDM850 - TDMA0	RM1900 + DDM1900 - TDMA0
GMSK modulation	Max Mean RF power	Test B,M,T	Test B,M,T
	Power vs time	Test B,M,T	Test B,M,T
	phase frequency error	Test B,M,T	Test B,M,T
	Modulation spectrum	Test B,M,T	Test B,M,T
	Switching transient spectrum	Test B,M,T	Test B,M,T
	Spurious emission	Test B,T	<i>Not tested</i>
	Static sensitivity TCH/FS	Test (Full band)	Test (Full band)
EDGE modulation	Mean RF power	Test B,M,T	<i>Not tested</i>
	Power vs time	Test B,M,T	<i>Not tested</i>
	EVM	Test B,M,T	Test B,M,T
	Spurious emission	<i>Not tested</i>	Test B,T
	Static layer NER & RXLEV	Test B,M,T	Test B,M,T
	Static sensitivity	Test B,M,T	<i>Not tested</i>
	Blocking characteristic	Test M	<i>Not tested</i>

**3.2. GSM850 OUTDOOR GSM 6000 BTS AC & DC VERSION: RF TESTS IN EXTREME CONDITIONS**

3.2.1. GSM850 OUTDOOR BTS 6000 (AC VERSION)



❖ **Environmental Conditions:**

- **For High temperature :** T= +50°C ( Outdoor BTS)

Outdoor AC      Temperature      T= +50°C      VDC min = 187VAC

Emission at Full Power Pmax on all transceivers

For test at high temperature, the other Tx ways will be configured at maximum power  
Temperature stabilization at least a minimum 1 hours at T=50°C before beginning RF tests.

- **For low Temperature :**

Outdoor AC      Low temperature T=-33°C      VAC = 264 VAC

*Emission at Max Power on 1 way:*

Measurements will be done with one Tx way in emission.

For test at low temperature, the other Tx ways will be configured in idle mode.

➤ **3GPP Radio performance Tests :**

	BTS	GSM 6000 BTS Outdoor AC - GSM850 TDMA0	
		Cold start T=-33°C	T=50°C
GMSK modulation	Modulation accuracy - phase & freq	C128, C190, C251	C128, C190, C251
	Mean RF power	C128, C190, C251	C128, C190, C251
	Dynamic Step	C190	C190
	Power vs time	C190	C190
	Modulation spectrum	C190	C190
	Switching transient spectrum	C190	C190
	Static sensitivity TCH/FS	C128, C190, C251	C128, C190, C251
EDGE modulation	Modulation accuracy- EVM	C128, C190, C251	C128, C190, C251
	Mean RF power	C128, C190, C251	C128, C190, C251
	Dynamic Step	C190	C190
	Power vs time	C190	C190
	Modulation spectrum	NT	NT
	Switching transient spectrum	NT	NT
	Static layer NER NFH	C128, C190, C251	C128, C190, C251
	Rxlev measurement	C128, C190, C251	C128, C190, C251

❖ **Test Parameters configuration :**

**For Tx measurements :**

- Maximum Mean RF power step will be done with Analyser
- Dynamic step will be done with VSA.
- Spectrum will be done with Analyser
  - Sweep number: 100 for modulation
  - Sweep number: 50 for switching

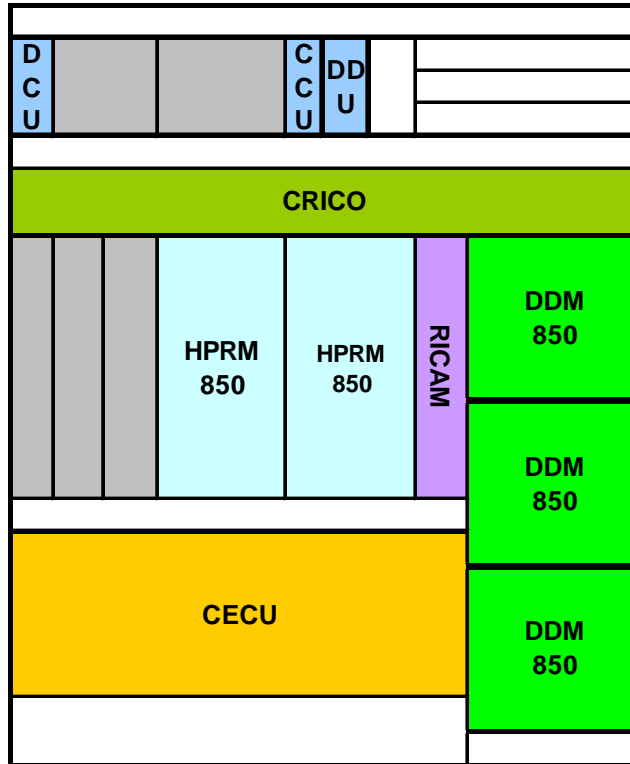
**For receiver measurements:**

Receiver measurements will be done in RX0 Main way.

- GMSK sensitivity (search rberII = 2% ) will be performed on main way
- NER / Rxlev:
  - Measurement in 8PSK modulation .TCH 23.2 – Main way
  - Antenna Level: -30dBm, -50dBm, -80dBm, -104dBm,-106 dBm



3.2.2. GSM850 OUTDOOR BTS 6000 (DC VERSION)



❖ **Environmental Conditions:**

- **For High temperature :** T= +50°C (Outdoor BTS)

Outdoor DC Temperature T= +50°C VDC min = -52 VDC

Emission at Full Power Pmax on all transceivers.

For test at high temperature, the other Tx ways will be configured at maximum power  
Temperature stabilization at least a minimum 1 hours at T=50°C before beginning RF tests.

- **For low Temperature :** T=- 33°C

Outdoor Low temperature T=-33°C VDC max = -57 VDC

*Emission at Max Power on 1 way:*

Measurements will be done after a cold start (T=-5°C) with one Tx way in emission.

For test at low temperature, the other Tx ways will be configured in idle mode.

➤ **3GPP Radio performance Tests :**

Radio performances are measured on Tx0 / Rx0 way.

	BTS	GSM 6000 BTS Outdoor DC - GSM850 TDMA0	
		Cold start T=-33°C	T=50°C
GMSK modulation	Modulation accuracy - phase & freq	C128, C190, C251	C128, C190, C251
	Mean RF power	C128, C190, C251	C128, C190, C251
	Dynamic Step	C190	C190
	Power vs time	C190	C190
	Modulation spectrum	C190	C190
	Switching transient spectrum	C190	C190
	Static sensitivity TCH/FS	C128, C190, C251	C128, C190, C251
EDGE modulation	Modulation accuracy- EVM	C128, C190, C251	C128, C190, C251
	Mean RF power	C128, C190, C251	C128, C190, C251
	Dynamic Step	C190	C190
	Power vs time	C190	C190
	Modulation spectrum	NT	NT
	Switching transient spectrum	NT	NT
	Static layer NER NFH	C128, C190, C251	C128, C190, C251
Rxlev measurement	C128, C190, C251	C128, C190, C251	

❖ **Test Parameters configuration :**

**For Tx measurements :**

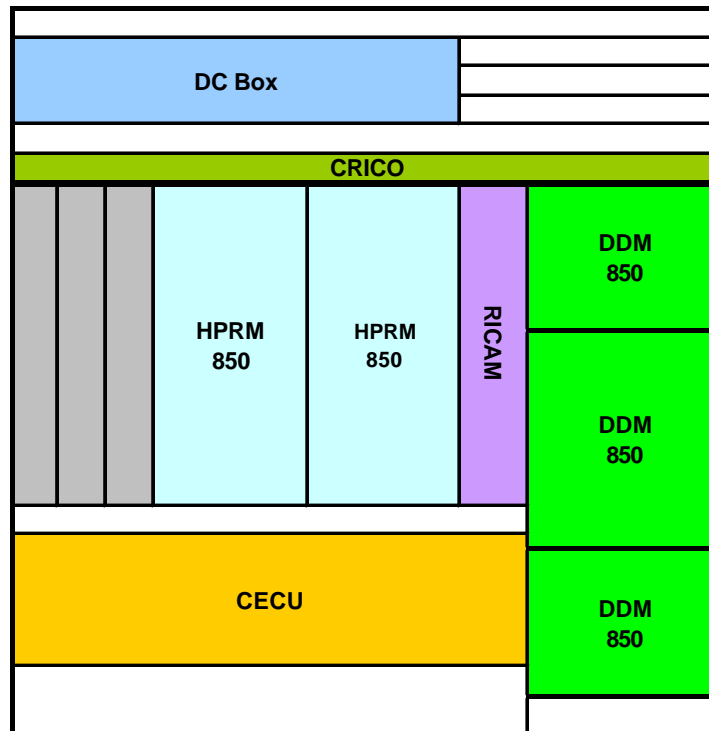
- Maximum Mean RF power step will be done with Analyser
- Dynamic step will be done with VSA.
- Spectrum will be done with Analyser
  - Sweep number: 100 for modulation
  - Sweep number: 50 for switching

**For receiver measurements:**

Receiver measurements will be done in RX0 Main way.

- GMSK sensitivity (search rberII = 2% ) will be performed on main way
- NER / Rxlev:
  - Measurement in 8PSK modulation .TCH 23.2 – Main way
  - Antenna Level: -30dBm, -50dBm, -80dBm, -104dBm,-106 dBm

3.2.3. GSM850 INDOOR BTS 6000 (DC VERSION)



❖ **Environmental Conditions:**

- **For High temperature : T= +50°C (INDOOR BTS 6000 DC version)**

Outdoor DC Temperature T= +50°C VDC min = -40.5 VDC

Emission at Full Power Pmax on all transceivers.

For test at high temperature, the other Tx ways will be configured at maximum power  
Temperature stabilization at least a minimum 1 hours at T=50°C before beginning RF tests.

- **For low Temperature : T=- 33°C**

Outdoor Low temperature T=-5 °C VDC max = -57 VDC

*Emission at Max Power on 1 way:*

Measurements will be done after a cold start (T=-5°C) with one Tx way in emission.

For test at low temperature, the other Tx ways will be configured in idle mode.

➤ **3GPP Radio performance Tests :**

No 3GPP TS11.21 radio tests will be performed on GSM850 BTS6000 Indoor DC versions.  
The radio performances will be covered by the radio performances checking with Outdoor  
BTS 6000 Ac & DC version.

Only FCC Tests will be performed on the INDOOR BTS 6000 DC version.

#### 4. BTS 6000 RF QUALIFICATION TESTS FOR FCC REGULATORY

➤ **FCC Part 22 (GSM850) in normal conditions.**

Frequency Stability test tests will be done during thermal test by external contract manufacturer . Result sand RF Report done by contract manufacturer will be checked by RF Team.

FCC Certification : Part 22				
FCC Specification	Title	GMSK	8PSK	Comment
2.1046 24.232	RF Power Output	X	X	Note 1 ( Done by Nortel RF Team)
2.1049	Occupied Bandwidth	X	X	Note 2 ( Done by Nortel RF Team)
2.1051 24.238	Spurious Emissions at Antenna Terminals	X	X	Note 3 ( Done by Nortel RF Team)
FCC radio tests will be performed in GSM850 band for a Dual Band GSM850/PCS1900 BTS 6000 Outdoor AC version. These tests have been already performed in BTS18000. As the same modules and same radio paths are used in BTS 60000, Only critical performances will be checked in BTS6000 for each tests.				

Note 1 : Measurement power at B(512) , M(661) , T(810) Channel.

Note 2 : 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.Measurement on Channel M.

Note 3 : Block Edge channel : Spurious measurement for B(512), T(810) Channel.  
Out of block emission: Spurious measurement power for T(810) Channel.

➤ **FCC Part 22 (GSM850) in extreme conditions.**

FCC Test in extreme conditions ( FCC Part 22 )				
2.1055 24.235	Mean RF Power Frequency Stability	X		<b>Note 4 :</b> <b>Done by</b> <b>Contract Manufacturer</b>

- Test is done with full emission on Tx RM ( theoretical worst thermal case )
- Check all emission is at full power during test.
- Test Frequency stability on RM under worst thermal case.

**Note 4 : Frequency stability ( Test Performed by a contract Manufacturer )**

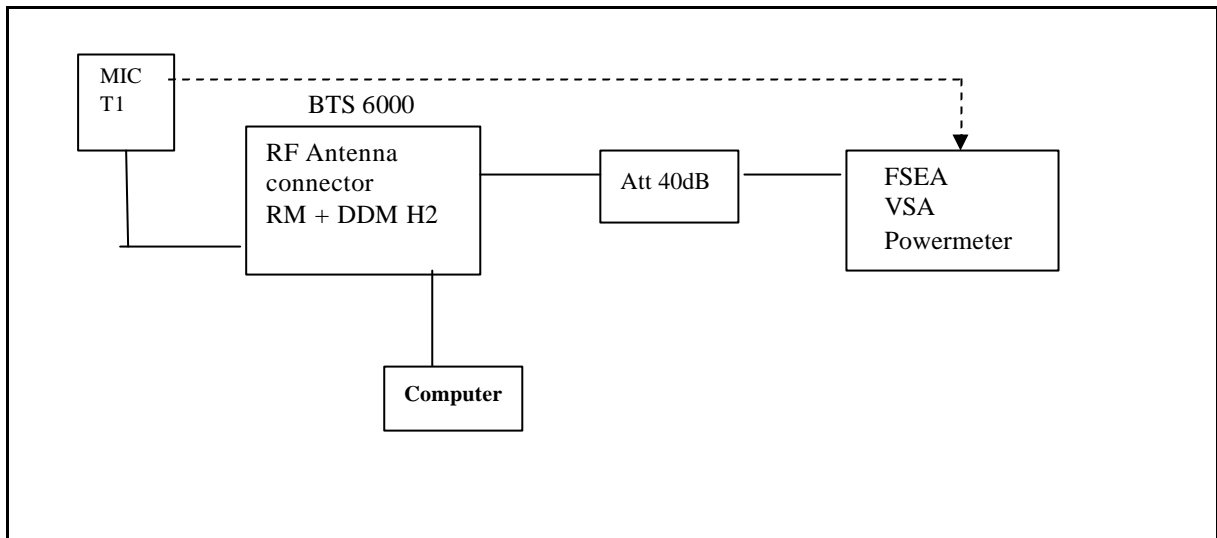
Frequency stability test is performed on each RM Tx0 & Tx1 & Tx2 under following extreme conditions:

- **GSM850 OUTDOOR BTS 6000 AC version :**
  - Temperature from minimum T=-33°C to maximum temperature T=50°C at intervals of 10 degrees.
  - With AC power supply variations: 187 VAC , 264 VAC
  - All Modules run with nominal power regulation at maximum power in GMSK modulation.
- **GSM850 OUTDOOR BTS 6000 DC version :**
  - Temperature from minimum T=-33°C to maximum temperature T=50°C at intervals of 10 degrees.
  - With DC power supply variations: -52 VDC , -57VDC.
  - All Modules run with nominal power regulation at maximum power in GMSK modulation.
- **GSM850 INDOOR BTS 6000 DC version :**
  - Temperature from minimum T=-5°C to maximum temperature T=50°C at intervals of 10 degrees.
  - With DC power supply variations: -40.5 VDC , -57VDC.
  - All Modules run with nominal power regulation at maximum power in GMSK modulation.

## 5. TEST BENCH RADIO CONFIGURATION

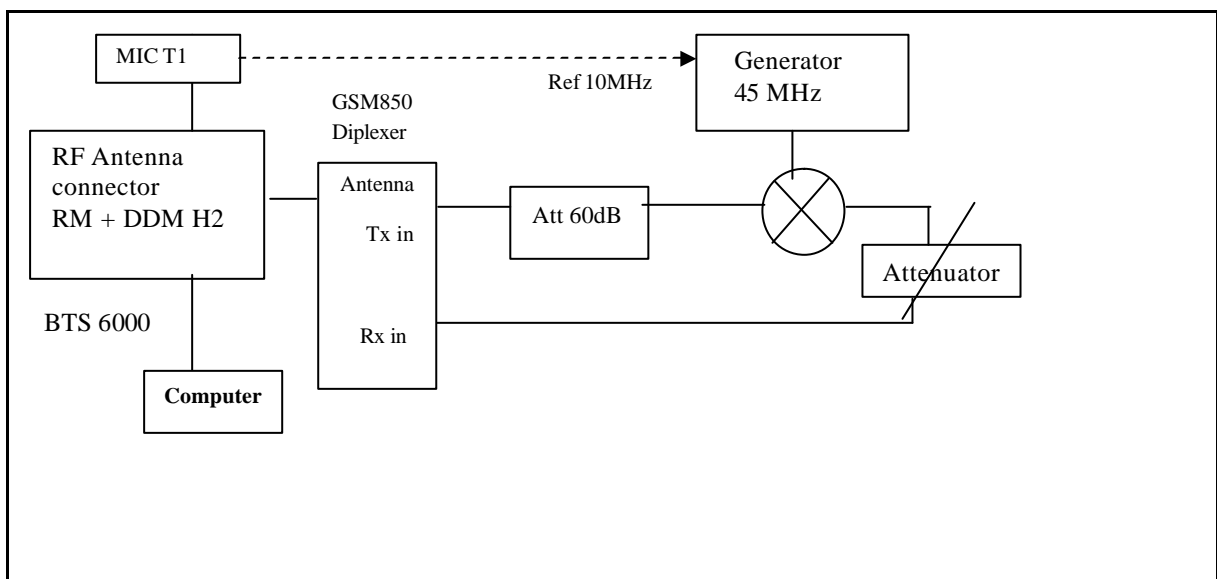
### 5.1. TX TEST BENCH

Bench for Tx measurement:



### 5.2. RX TEST BENCH

Base-base loop-back bench for RX measurement (NER, ber sensitivity).



## 6. ABBREVIATIONS AND DEFINITIONS

### 6.1. ABBREVIATIONS

ARFCN	Absolute Radio Frequency Channel Number
BCCH	Broadcast Control Channel
BER	Bit Error Rate
BIST	Built In Self Test
BTS	Base Transceiver System
C/I	Carrier to Interferer ratio
dBm	Ratio in decibel with respect to 1 milliwatt
dBc	Ratio in decibel with respect to the carrier level
FER	Frame Erasure Rate
FP	Frame Processor
FH bus	Transmission bus between FP and TX
IF	Intermediate Frequency
IP3	3rd order interception point
LNA	Low Noise Amplifier
NER	Nominal Error Rate
NFH	NO Frequency Hopping
OL	Local Oscillator
PA	TX Power Amplifier
PCM	Pulse Coded Modulation
RF	Radio Frequency Channel
RX	Receiver
SFH	Slow Frequency Hopping
TCH	Traffic Residual Bit Error Rate
TDMA	Time Division Multiple Access
TS	Time Slot
TX	Transmitter
TRX	Transmitter - Receiver

❧ END OF DOCUMENT ❧



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**Radio Test Plan for the qualification of GSM 1900Mhz BTS 6000 Cabinets (FCC & 3GPP)**

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Author : Alain CAILLE

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Author : Jérôme SOTTAS (LCIE)

**26/10/06**

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Author : Alain CAILLE

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# 1. INTRODUCTION

## 1.1. OBJECT

This document presents the radio qualification plan of BTS 6000 for the PCS1900 Band

BTS 6000 will be equipped with Radio modules:

- RM PCS1900 equipped with BPM30W (GMSK & 8PSK) in PCS1900 Band.

BTS 6000 are equipped with the module as BTS18000 with equivalent radio paths.

Radio Qualification is also performed on BTS18000 and some BTS18000 radio performances are applicable to BTS6000.

The BTS6000 radio qualification is performed in order to check the most critical radio performances which could be impacted by the BTS6000 configuration.

Following RF performances tests will be performed to check FCC compliance, 3GPP TS11.21 compliance and IC RSS-133 compliance :

- At ambient temperature, Radio tests will be performed in BTS 6000 OUTDOOR (AC )  
The BTS 6000 will be equipped with PCS1900 module.
- At extreme temperature, Radio tests will be performed in following configuration :
  - OUTDOOR BTS 6000 (DC supply ) & PCS1900 radio modules
  - INDOOR BTS 6000 (AC supply) & PCS1900 radio modules

Radio Tests will be performed in GMSK & 8PSK modulation

## 2. RELATED DOCUMENTS

### 2.1. APPLICABLE DOCUMENTS

[A1]	3GPP TS 05.05 – V8.7.1	Release 1999 Digital Cellular Telecommunication System Phase 2+ Radio Transmission and Reception
[A2]	3GPP TS 11.21 – V8.9.0	Release 1999 Base Station System (BSS) Equipment Specification – Radio Aspects
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[A4]	47CFR Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS October 2003
[A5]	IC RSS-133	Issue 3 – June 2005 Spectrum Management and Telecommunication Policy - Radio Standards Specifications

### 3. BTS 6000 RF QUALIFICATION TESTS FOR 3GPP PERFORMANCE

The RF performances will be performed at BTS 6000 antenna connector.

#### 3.1. OUTDOOR GSM 6000 BTS : RF TESTS IN NORMAL CONDITION

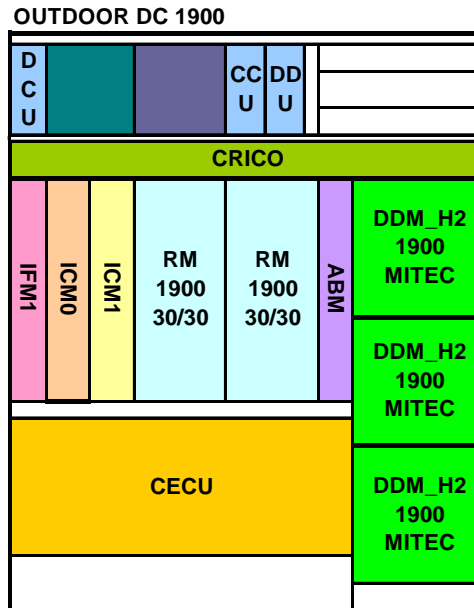
BTS 6000 OUTDOOR AC		
	Tests	RM1900 + DDM1900
GMSK modulation	Max Mean RF power	<i>Test B,M,T</i>
	Power vs time	<i>Test B,M,T</i>
	phase frequency error	<i>Test B,M,T</i>
	Modulation spectrum	<i>Test B,M,T</i>
	Switching transient spectrum	<i>Test B,M,T</i>
	Static sensitivity TCH/FS Rxlev & NER	<i>Test (Full band)</i> <i>Test B,M,T</i>
EDGE modulation	Mean RF power	<i>Test B,M,T</i>
	Static & Dynamic step	<i>Test B,M,T</i>
	Power vs time	<i>Test B,M,T</i>
	EVM	<i>Test B,M,T</i>
	Modulation spectrum	<i>Test B,M,T</i>
	Switching transient spectrum	<i>Test B,M,T</i>
	Spurious emission	<i>Test B,T</i>
	Static layer NER	<i>Test B,M,T</i>
	Static sensitivity	<i>Test B,M,T</i>
Rxlev measurement	<i>Test B,M,T</i>	
Blocking characteristic	Test M	

### 3.2. OUTDOOR DC & INDOOR AC GSM 6000 BTS : RF TESTS IN EXTREME CONDITIONS

➤ **Configurations required to test GSM 6000 BTS in worst thermal case:**

- At extreme temperature, Radio tests will be performed in following configuration :

❖ OUTDOOR BTS 6000 ( DC supply )



❖ **Environmental Conditions:**

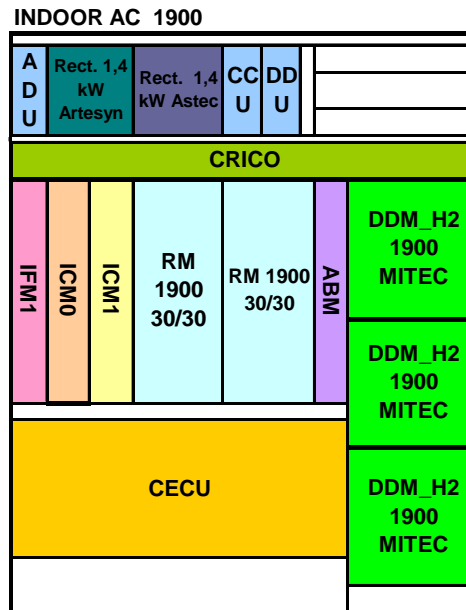
- For High temperature : T= +50°C (Indoor & Outdoor BTS)  
Outdoor Temperature T= +50°C Vdc min = -52VDC

Emission at Full Power Pmax on all transceivers  
For test at high temperature, the other Tx ways will be configured at maximum power  
Temperature stabilization at least a minimum 1 hours at T=50°C before beginning RF tests.

- For low Temperature :  
Outdoor Low temperature T=-33°C Vdc max = -57VDC

*Emission at Max Power on 1 way:*  
Measurements will be done with one Tx way in emission.  
For test at low temperature, the other Tx ways will be configured in idle mode.

❖ INDOOR BTS 6000 (AC supply)



❖ Environmental Conditions:

- For High temperature : T= +50°C (Indoor & Outdoor BTS)  
 Indoor                      Temperature                      T= +50°C                      Vac min = 187VAC

Emission at Full Power Pmax on all transceivers  
 For test at high temperature, the other Tx ways will be configured at maximum power  
 Temperature stabilization at least a minimum 1 hours at T=50°C before beginning RF tests.

- For low Temperature :  
 ( T= -5°C for Indoor BTS )  
 Indoor                      Low temperature T=-5°C                      Vac max = 264VAC

*Emission at Max Power on 1 way:*  
 Measurements will be done after a cold start (T=-5°C) with one Tx way in emission.  
 For test at low temperature, the other Tx ways will be configured in idle mode.

➤ **Radio performance Tests :**

❖ OUTDOOR BTS 6000 (DC supply )

Radio performances are measured on Tx0 / Rx0 way.

	BTS	GSM 6000 BTS Outdoor DC	
		Cold start T=-33°C	T=50°C
GMSK modulation	Modulation accuracy - phase & freq	C512, C661, C810	C512, C661, C810
	Mean RF power	C512, C698, C885	C512, C661, C810
	Static step	NT	NT
	Dynamic Step	NT	NT
	Power vs time	NT	C661
	Modulation spectrum	NT	C661
	Switching transient spectrum	NT	C661
	Static sensitivity TCH/FS	NT	C512, C661, C810
EDGE modulation	Modulation accuracy- EVM	C661	C512, C661, C810
	Mean RF power	C661	C512, C661, C810
	Static step	NT	C661
	Dynamic Step	NT	C661
	Power vs time	NT	NT
	Modulation spectrum	NT	NT
	Switching transient spectrum	NT	NT
	Static layer NER NFH Rxlev measurement	NT NT	C512, C661, C810 C512, C661, C810

❖ INDOOR BTS 6000 (AC supply)

Radio performances are measured on Tx0 / Rx0 way.

	BTS	GSM 6000 BTS Indoor AC	
		Cold start T=-5°C	T=50°C
GMSK modulation	Modulation accuracy - phase & freq	C512, C661, C810	C512, C661, C810
	Mean RF power	C512, C661, C810	C512, C661, C810
	Power vs time	C661	NT
	Modulation spectrum	C661	NT
	Switching transient spectrum	C661	NT
	Static sensitivity TCH/FS	C512, C661, C810	NT
EDGE modulation	Modulation accuracy- EVM	C512, C661, C810	C512, C661, C810
	Mean RF power	C512, C661, C810	C512, C661, C810
	Static step	C661	NT
	Dynamic Step	C661	NT
	Power vs time	NT	NT
	Modulation spectrum	NT	NT
	Switching transient spectrum	NT	NT
	Static layer NER NFH Rxlev measurement	C512, C661, C810 C512, C661, C810	NT NT



❖ Test Parameters configuration :

**For Tx measurements :**

- Maximum Mean RF power step will be done with Analyser
- Static & dynamic step will be done with Powermeter.
- Spectrum will be done with Analyser
  - Sweep number: 100 for modulation
  - Sweep number: 50 for switching

**For receiver measurements:**

- GMSK sensitivity (search rberII = 2% ) will be performed on main way
- NER / Rxlev:
  - Measurement in 8PSK modulation .TCH 23.2 – Main way
  - Antenna Level: -30dBm, -50dBm, -80dBm, -104dBm,-106 dBm

## **4. BTS 6000 RF QUALIFICATION TESTS FOR FCC REGULATORY**

### **FCC Part 24 (PCS1900)**

Frequency Stability test tests will be done during thermal test by external contract manufacturer .  
Result sand RF Report done by contract manufacturer will be checked by RF Team.

FCC Certification : Part 24 & IC RSS-133					
<b>IC RSS-133 Specification</b>	<b>FCC Specification</b>	<b>Title</b>	<b>GMSK</b>	<b>8PSK</b>	<b>Comment</b>
§ 4.3	2.1046 24.232	RF Power Output	X	X	Note 1 ( Done by Nortel RF Team)
/	2.1049	Occupied Bandwidth	X	X	Note 2 ( Done by Nortel RF Team)
§ 6.5	2.1051 24.238	Spurious Emissions at Antenna Terminals	X	X	Note 3 ( Done by Nortel RF Team)
<b>§ 4.2</b>	<b>2.1055 24.235</b>	<b>Frequency Stability</b>	<b>X</b>		<b>Note 4 : Done by Contract Manufacturer</b>

Note 1 : Measurement power at B(512) , M(661) , T(810) Channel.

Note 2 : 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.  
Measurement on Channel M.

Note 3 :

Block Edge channel : Spurious measurement for B(512), T(810) Channel.  
Out of block emission: Spurious measurement power for T(810) Channel.

### **Note 4 : Frequency stability ( Test Performed by a contract Manufacturer )**

Frequency stability test is performed on each RM Tx0 & Tx1 & Tx2 under following extreme conditions:

- Temperature from minimum to maximum temperature at intervals of 10 degrees.
- With AC power supply variations: 187 VAC , 230 VAC, 264 VAC
- With DC power supply variations: -52 VDC , -48 VDC, -57VDC.

All Modules run with nominal power regulation at maximum power in GMSK modulation.

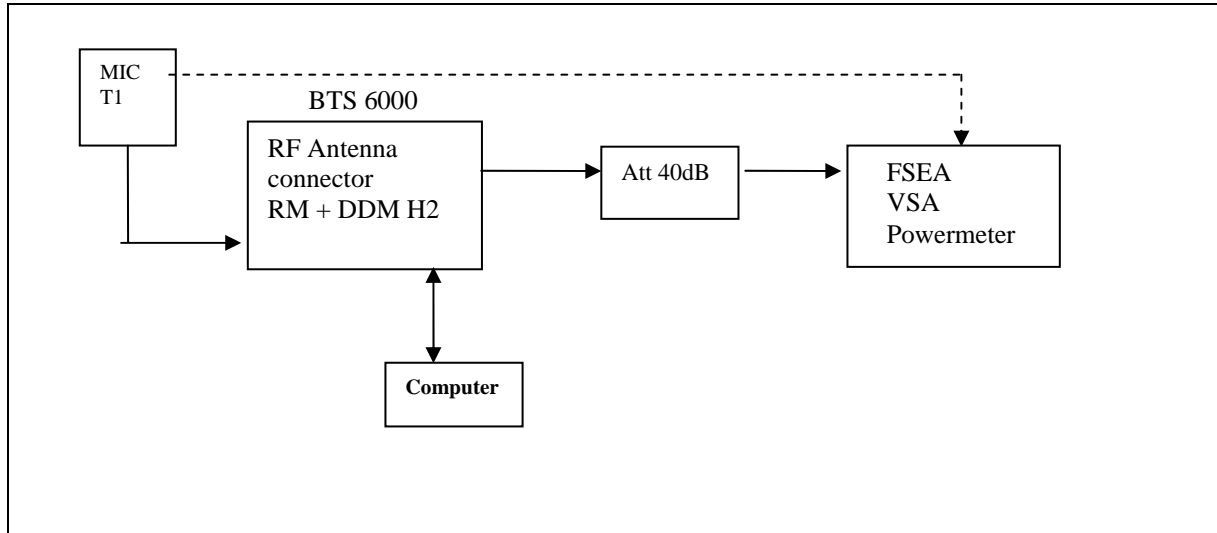
RF Test :

- Test is done on RM3 for each Tx ( theoretical worst thermal case )
- Check all emission is at full power during test.
- Test Frequency stability on RM under worst thermal case.

## 5. TEST BENCH RADIO CONFIGURATION

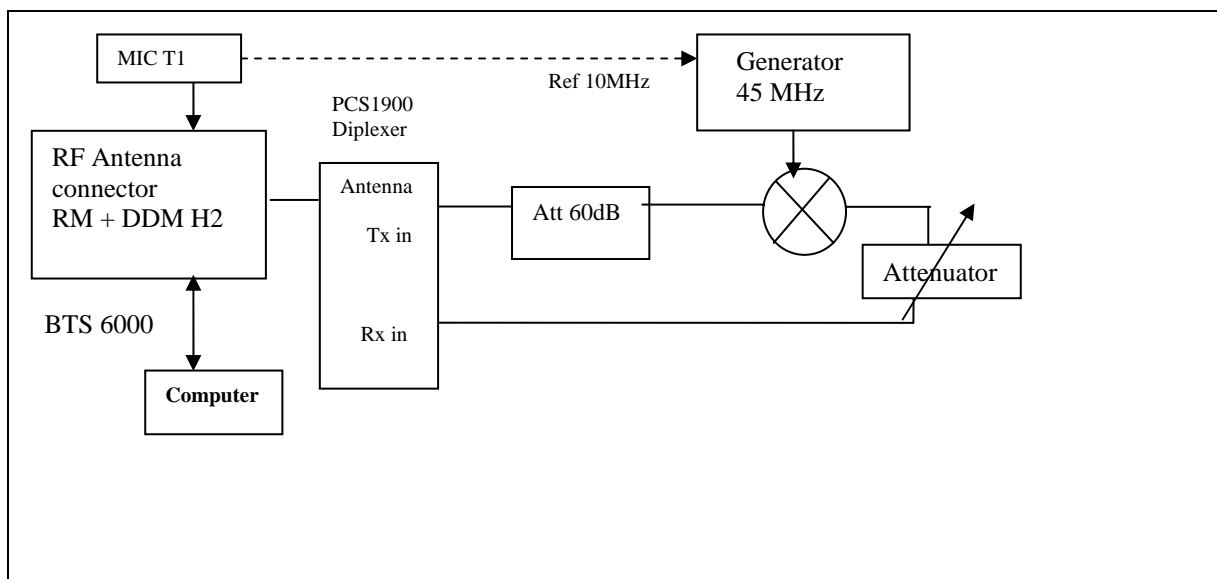
### 5.1. TX TEST BENCH

Bench for Tx measurement:



### 5.2. RX TEST BENCH

Base-base loop-back bench for RX measurement (NER, ber sensitivity).



## 6. ABBREVIATIONS AND DEFINITIONS

### 6.1. ABBREVIATIONS

ARFCN	Absolute Radio Frequency Channel Number
BCCH	Broadcast Control Channel
BER	Bit Error Rate
BIST	Built In Self Test
BTS	Base Transceiver System
C/I	Carrier to Interferer ratio
dBm	Ratio in decibel with respect to 1 milliwatt
dBc	Ratio in decibel with respect to the carrier level
FER	Frame Erasure Rate
FP	Frame Processor
FH bus	Transmission bus between FP and TX
IF	Intermediate Frequency
IP3	3rd order interception point
LNA	Low Noise Amplifier
NER	Nominal Error Rate
NFH	NO Frequency Hopping
OL	Local Oscillator
PA	TX Power Amplifier
PCM	Pulse Coded Modulation
RF	Radio Frequency Channel
RX	Receiver
SFH	Slow Frequency Hopping
TCH	Traffic Residual Bit Error Rate
TDMA	Time Division Multiple Access
TS	Time Slot
TX	Transmitter
TRX	Transmitter - Receiver

∞ END OF DOCUMENT ∞