Combined Form for Application for Type Approval Testing and Report for Testing to (I-)ETS 300 609-1 (GSM 11.21)

for E-GSM 900/DCS 1800 Base Station Equipment

The submission documentation to a National Regulatory Body for Type approval purposes shall consist of the complete document.

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REPORT ON

Type Approval Testing of the E-GSM 900/DCS 1800 Equipped
..... Base Station in accordance with
(I-)ETS 300 609-1 (GSM 11.21) (Version/Date)

Report Number (Month) (Year)

Testing Laboratory:

(Name)
(Address)

Test Location:

(Name)
(Address)

REPORT ON Type Approval Testing of the E-GSM 900/DCS 1800 Equipped ..... Base Station in accordance with (I-)ETS 300 609-1 (GSM 11.21) (Version/Date)

Report No.

PREPARED FOR

DISTRIBUTION (Applicant) (Recipient) Copy No. 1

(Regulatory Authority) (Recipient) Copy No. 2

(Accredited Test House) Copy No. 3

Copy No:

APPLICANT'S DETAILS		
CATEGORY OF APPLICANT (please tick relevant box opposite)	(a) [ ]	MANUFACTURER
	(b) [ ]	IMPORTER
If box (b), (c) or (d) is ticked complete details in box below with respect to the manufacturer	(c) [ ]	DISTRIBUTOR
	(d) [ ]	AGENT
COMPANY NAME :		
ADDRESS :		
NAME FOR CONTACT PURPOSES :		
TELEPHONE NO :		FAX NO :
E-MAIL:		TELEX NO:

MANUFACTURER'S DETAILS	
COMPANY NAME :	
ADDRESS :	
NAME FOR CONTACT PURPOSES :	
TELEPHONE NO:	FAX NO:
E-MAIL:	TELEX NO:

TYPE DESIGNATION (NOTE 1)
The type designation may be either a single alphanumeric code or an alphanumeric/code divided into two parts. Please fill in EITHER : TYPE DESIGNATION AS A SINGLE ALPHANUMERIC CODE / / / / / / / / / / / / / / / / / / OR : TYPE DESIGNATION IN TWO PARTS : 1. EQUIPMENT SERIES NO. (NOTE 2) ("MODEL NUMBER") / / / / / / / / / / / / / / / / / / AND 2. EQUIPMENT SPECIFIC NO. (NOTE 3) ("IDENTIFICATION NO") / / / / / / / / / / / / / / / / / /

NOTES:

If the equipment comprises of two bands, then the following set of equipment definition tables shall be completed for each band.

(1) This is the manufacturer's numeric or alphanumeric code or name that is specific to a particular equipment. It may contain information in coded form on the characteristics of the equipment e.g. frequency, power. The manufacturer is free to choose the form of the type designation.

(2) This is the number, code or trade name used by the manufacturer to describe a series or 'family' of equipment of substantially the same mechanical and electrical construction which will include a number of related equipments. This number is often referred to as the "model no.".

(3) This is the manufacturer's identification number given to a specific equipment in the series or 'family' of equipments. It is often referred to as the "identification number".

Variants covered by this report:

This report is applicable to all the following variants:

TECHNICAL VARIANTS	
IDENTIFICATION	COMMENTS

A description of the whole equipment family may be included in this report or added as an annex.

In the opinion of .....* all modules and configurations comply with the requirement.

* Insert name of the Accredited Test House.

TYPE OF EQUIPMENT	
[ ]	BTS
[ ]	Micro BTS
[ ]	Other

BTS			
Max. Number of Transceivers [ ]		Dedicated BCCH Transceivers	[ ]
BTS Power Class	[ ]		
BTS Power Measurement Position :-		Slow Frequency Hopping :-	
Input to Combiner	[ ]	Baseband	[ ]
Antenna Connector	[ ]	Synthesizer	[ ]
DTX	[ ]	Receiver Diversity	[ ]
Micro BTS			
Max. Number of Transceivers [ ]		Dedicated BCCH Transceivers	[ ]
Micro BTS Power Class	[ ]	Power W (as declared by manufacturer)	
BTS Power Measurement Position :-		Slow Frequency Hopping :-	
Input to Combiner	[ ]	Baseband	[ ]
Antenna Connector	[ ]	Synthesizer	[ ]
DTX	[ ]	Receiver Diversity	[ ]
Special Configuration			
(Justify compliance)			

TRANSMITTER TECHNICAL CHARACTERISTICS
TRANSMITTER FREQUENCY
Method of frequency generation [ ] CRYSTAL [✓] SYNTHESIZER [ ] OTHER
TRANSMITTER FREQUENCY RANGE [ ] PGSM 900 (935-960 MHz) [ ] EGSM 900 (925-960 MHz) [ ] DCS 1800 (1805-1880 MHz) [ ] Dual Band [ ] Other - (include frequency ranges supported)

TRANSMITTER RF POWER CHARACTERISTICS	
MAXIMUM RATED TRANSMITTER OUTPUT POWER per transceiver as stated by manufacturer W AT BTS RF OUTPUT CONNECTOR or INPUT TO COMBINER (as declared by manufacturer)	
Static Power Control	
Number of steps supported [ ]	
Is Dynamic Power Control Supported ?	
Yes [ ]	No [ ]
If supported, how many steps? [ ]	

TRANSMITTER MODULATION INPUT CHARACTERISTICS

Modulation bit rate 270.833 kbit/s

Type of modulation: 0.3 GMSK

SUBCARRIER:

MSK	YES	[ ]	NO	[✓]	Direct FSK	YES	[ ]	NO [✓]
FFSK	YES	[ ]	NO	[✓]	GMSK	YES	[✓]	NO [ ]
					Generalised Tamed FM	YES	[ ]	NO [✓]
					Multilevel State FM	YES	[ ]	NO [✓]
					PLL-4PSK	YES	[ ]	NO [✓]
					8 PSK	YES	[ ]	NO [✓]
					Other			

DIRECT:

RECEIVER TECHNICAL CHARACTERISTICS
RECEIVER - FREQUENCY
METHOD OF FREQUENCY GENERATION [ ] CRYSTAL [✓] SYNTHESIZER [ ] OTHER INTERMEDIATE FREQUENCIES [ ] 1st MHz [ ] 2nd MHz [ ] 3rd kHz
Is local oscillator injection frequency higher or lower than the receiver nominal frequency? [ ] Higher (For channel..... to .....) [ ] Lower (For channel..... to .....) [ ] Identical Give details
RECEIVER FREQUENCY RANGE [ ] PGSM 900 (890-915 MHz) [ ] EGSM 900 (880-915 MHz) [ ] DCS 1800 (1710-1785 MHz) [ ] Dual Band [ ] Other - (include frequency ranges supported)
[ ] Receiver Diversity

TRANSMITTER AND RECEIVER CHARACTERISTICS
ITU DESIGNATION OR CLASS OF EMISSION
CHANNEL SEPARATION 200 kHz
State the maximum number of channels over which the equipment can operate
State the minimum channel spacing

EXTREME TEMPERATURE RANGE over which equipment is to be type tested
Minimum Temperature [ ]
Maximum Temperature[ ]

CONSTRUCTION OF EQUIPMENT
Single unit (NOTE 4) [ ]
Multiple units [ ]
If multiple units describe each one clearly
State the type and number of Tx and Rx connectors

NOTE 4 Unit means a physically separate item of the equipment.

AUTOMATIC EQUIPMENT SWITCH OFF
If the equipment is designed to automatically switch off at a predetermined voltage level which is higher or lower in value than the minimum and minimum calculated values this shall be clearly stated.
[ ] Applies V Cut-off voltage
[ ] Does not apply

POWER SOURCE				
[ ]	AC MAINS		[ ]	Single phase
	V	AC Voltage	[ ]	Three phase
	A	AC Maximum Current		
		AC MAINS FREQUENCY (Hz)		
[ ]	DC INPUT			
	V	DC Voltage		
	A	DC Maximum Current		
[ ]	Other (please supply details)			
[ ]	BATTERY			
[ ]	Nickel Cadmium			
[ ]	Mercury			
[ ]	Alkaline			
[ ]	Lead acid (Vehicle regulated)			
[ ]	Lead acid (Not vehicle regulated)			
[ ]	Lithium			
[ ]	Other (please supply details)			
	volts nominal. End point voltage as quoted by equipment manufacturer V			

DUPLEX OPERATION		
Is the equipment intended for		
Duplex operation	[✓]	Yes
	[ ]	No
Is the equipment fitted with separate transmitter and receiver antenna sockets	[ ]	Yes
	[ ]	No
Is the equipment fitted with a duplex filter as an integral part of the equipment with a single antenna connection socket	[ ]	Yes
	[ ]	No
Is the duplex filter externally fitted and connected to the main equipment by co-axial cable(s)		
	[ ]	Yes
	[ ]	No
Type and make of duplex filter	[ ]	Wideband
	[ ]	Tunable
	[ ]	Other

CO-SITING OPERATION		
Is the equipment suitable for co-siting with:-		
GSM900	[ ]	Yes
	[ ]	No
DCS1800	[ ]	Yes
	[ ]	No

CHANNEL IDENTIFICATION				
Each equipment, whether one or more submitted for tests shall carry clear identification (such as a serial number), together with the frequencies.				
Equipment Identification eg Serial Number	Channel No.	Transmit Nominal Frequency MHz (NOTE 5)	Receive Nominal Frequency MHz (NOTE 5)	Dedicated BCCH

FREQUENCY RANGE LIMITATIONS
Are there any differences between the configurations, if so please state:- (e.g. limited frequency range due to ancillaries, i.e. combiners, duplexers, etc.)

NOTE 5. The frequency shall be marked as not applicable if the equipment is able to operate on any designated channel within the specified frequency range.

OTHER ITEMS SUPPLIED		
Spare batteries	[ ]	Yes
	[ ]	No
Battery charging device[	]	Yes
	[ ]	No
Special tools for dismantling equipment	[ ]	Yes
	[ ]	No
Ancillary equipment	[ ]	Yes
	[ ]	No
Test interface box (if applicable) or where appropriate the RF test fixture		
	[ ]	Yes
	[ ]	No
Others	[ ]	Yes
	[ ]	No
If Yes, please specify :		

DECLARATION		
Are the equipments submitted representative production models?	[ ]	Yes
	[ ]	No
If not are the equipments pre-production models?	[ ]	Yes
	[ ]	No
If pre-production equipments are submitted will the final production equipments be identical in all respects with the equipment tested [	]	Yes
	[ ]	No
If no supply full details :		
Is the Test Report to be used as part of a Type Approval Application ?	[ ]	Yes
	[ ]	No
If yes, has the product, any direct engineering predecessor, or variant ever been granted Type Approval in any CEPT member country ? [	]	Yes
	[ ]	No
If yes supply full details :		
Are there other Type Approval reports that are relied upon to give total family approval ?	[ ]	Yes
	[ ]	No
If yes supply full details (NOTE 6) :		

NOTE 6. As an option, an overview of all tests performed for the other reports that are relied upon to give total family approval may be included in this report.

I hereby declare that I am entitled to sign on behalf of the applicant and that the information supplied is correct and complete.

Signature :

Name :

Position held :

Date :

ADDITIONAL INFORMATION.

This report contains results for essential conformance testing in accordance with (I-)ETS 300 609-1 European digital cellular telecommunications system (Phase 2); Base Station System (BSS) equipment specification; Part 1: Radio aspects (GSM 11.21). The test definitions, methods and requirements follow the applicable version (as indicated earlier) of ETSI/GSM specification (I-)ETS 300 609-1.

.....* retains all results, plots and printouts for the tests performed and also calibration details of the test equipment used.

The test results relate only to the item(s) tested.

The report shall not be reproduced except in full without the written approval of the testing laboratory.

Certain modifications to this report format are permitted, e.g.:-

the limit values in the conformance requirement tables should be amended to reflect the version of the specification to which the testing was performed.

the sizes of the results and limit tables may be extended or reduced as required.

limit tables or parts of limit tables may be deleted if they are not applicable to the type of base station being tested.

a remarks area may be included in which special test conditions explanations or other comments may be recorded.

* Insert name of the Accredited Test House.

Tests were performed on all the following variants:

TECHNICAL VARIANTS		
IDENTIFICATION	COMMENTS	CONFIGURATION CODE

IDENTIFICATION	DESCRIPTION	CONFIGURATION CODE			
		A	B	C	D
Clause Number	Description	TEST STATUS (NOTE 7)			
6.2	Phase error and mean frequency error				
6.3	Mean transmitter RF carrier power				
6.4	Transmitter RF carrier power versus time				
6.5.1	Spectrum due to modulation and wideband noise				
6.5.2	Switching transients spectrum				
6.6	Spurious emissions from the transmitter antenna connector				
6.7	Intermodulation attenuation				
6.8	Intra Base Station System intermodulation attenuation				
7.3	Static reference sensitivity level				
7.4	Multipath reference sensitivity level				
7.5	Reference interference level				
7.6	Blocking characteristics				
7.7	Intermodulation characteristics				
7.8	AM suppression				
7.9	Spurious emissions from the receiver antenna connector				
8.0	Radiated spurious emissions				

A test plan may also accompany this report.

A module list for the tested equipment(s) shall be included. This list shall include serial number information if applicable.

NOTE 7. P = pass, F = fail, NT = not tested

EXPLANATORY NOTE

The following page and set of results is repeated for each configuration.

(This page will not appear in a final report)

Variant identification/Configuration code ....

LIST OF MEASUREMENTS.

The list of measured parameters called for in (I-)ETS 300 609-1 (GSM 11.21) is given below.

Clause	Transmitter Parameters	Page number	Status (NOTE 8)
6.2	Phase error and mean frequency error	...	...
6.3	Mean transmitted RF carrier power	...	...
6.4	Transmitted RF carrier power versus time	...	...
6.5.1	Adjacent channel power - spectrum due to modulation and wideband noise	...	...
6.5.2	Adjacent channel power - switching transients spectrum	...	...
6.6.1	Conducted Spurious emissions from the transmitter antenna connector: inside the BTS transmit band	...	...
6.6.2	Conducted Spurious emissions from the transmitter antenna connector: outside the BTS transmit band	...	...
6.7	Intermodulation attenuation	...	...
6.8	Intra Base Station System intermodulation attenuation	...	...
	Receiver Parameters		
7.3	Static reference sensitivity level	...	...
7.4	Multipath reference sensitivity level	...	...
7.5	Reference interference level	...	...
7.6	Blocking characteristics	...	...
7.7	Intermodulation characteristics	...	...
7.8	AM suppression	...	...
7.9	Spurious emissions from the receiver antenna connector	...	...
	Equipment Parameters		
8	Radiated spurious emissions	...	...

NOTE 8. P = pass
F = fail
NTS = not tested because SFH not supported
NTD = not tested because dynamic power control not supported
NTO = not tested (other reason - state reason on test result page)

Ambient temperature.....°C Relative humidity.....%

PHASE ERROR AND MEAN FREQUENCY ERROR CLAUSE 6.2

The measurement was carried out at maximum transmitter output power

*Variant identification/Configuration code ....

SFH Enabled/Disabled/Not supported Measured time slot ...

TEST CONDITIONS		TRANSMITTER PHASE ERROR (°)					
		Channel MHz		Channel MHz		Channel MHz	
		TRX ident		TRX ident		TRX ident	
		rms	peak	rms	peak	rms	peak
T_{nom}(°C)	V_{nom}(V)						
T_{min}(°C)	V_{min}(V)						
	V_{max}(V)						
T_{max}(°C)	V_{min}(V)						
	V_{max}(V)						
Maximum phase error (°)							
Measurement uncertainty (°)		Equipment		Requirement			
				1.5° rms 5.0° peak			

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.2.3

rms phase error (°)	$\leq$ 5.0
peak phase error (°)	$\leq$ 20.0

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

PHASE ERROR AND MEAN FREQUENCY ERROR (continued) CLAUSE 6.2

The measurement was carried out at maximum transmitter output power

*Variant identification/Configuration code ....

SFH Enabled/Disabled/Not supported Measured time slot ...

TEST CONDITIONS		TRANSMITTER FREQUENCY ERROR (Hz)		
		Channel MHz	Channel MHz	Channel MHz
		TRX ident	TRX ident	TRX ident
T_{nom}(°C)	V_{nom}(V)			
T_{min}(°C)	V_{min}(V)			
	V_{max}(V)			
T_{max}(°C)	V_{min}(V)			
	V_{max}(V)			
Maximum frequency error (ppm)				
Measurement uncertainty (Hz)		Equipment		Requirement
				±10.0

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.2.3

Mean frequency error (ppm)	≤ 0.05

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

MEAN TRANSMITTED RF CARRIER POWER (normal conditions) CLAUSE 6.3

Static Power Control

Declared maximum output power W (.....dBm)

*Variant identification/Configuration code ....

Measurement carried out at *antenna connector/input to combiner

SFH Enabled/Disabled/Not supported Measured time slot ...

TEST CONDITIONS		BTS POWER SETTING	TRANSMITTER POWER (dBm)		
			Channel MHz	Channel MHz	Channel MHz
			TRX ident	TRX ident	TRX ident
T_{nom}(°C)	V_{nom}(V)	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			
Power range over 2 x N dB steps (dB)					
Maximum deviation from 2 dB per step (dB)					
Measurement uncertainty (dB)			Equipment		Requirement
	absolute level step size				±1.0 ±0.7

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.3.3

Absolute Level (0)			
Normal BTS		nn dBm ±2.0 dB	
Micro BTS		GSM 900	DCS 1800
TRX power class	M1	>19 to 24 dBm ±2.0 dB	>27 to 32 dBm ±2.0 dB
	M2	>14 to 19 dBm ±2.0 dB	>22 to 27 dBm ±2.0 dB
	M3	>9 to 14 dBm ±2.0 dB	>17 to 22 dBm ±2.0 dB

Normal and Micro BTS	
Absolute Level (1-N)	$\leq$ ±3.0 dB
Power Range	2 x N dB ±3.0 dB
Step Size	2.0 dB ± 1.0 dB

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

MEAN TRANSMITTED RF CARRIER POWER (temperature and voltage extremes) CLAUSE 6.3

Static Power Control

Declared maximum output power W (.....dBm)

*Variant identification/Configuration code ....

Measurement carried out at *antenna connector/input to combiner

SFH Enabled/Disabled/Not supported Measured time slot ...

TEST CONDITIONS		BTS POWER SETTING	TRANSMITTER POWER (W/dBm)		
				Channel MHz	
				TRX ident	
T_{min}(°C)	V_{min}(V)	0			
	V_{max}(V)	0			
T_{max}(°C)	V_{min}(V)	0			
	V_{max}(V)	0			
Measurement uncertainty (dB)			Equipment		Requirement
					±1.0

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.3.3

Absolute Level (0)			
Normal BTS		nn dBm ±2.5 dB	
Micro BTS		GSM 900	DCS 1800
TRX power class	M1	>19 to 24 dBm ±2.5 dB	>27 to 32 dBm ±2.5 dB
	M2	>14 to 19 dBm ±2.5 dB	>22 to 27 dBm ±2.5 dB
	M3	>9 to 14 dBm ±2.5 dB	>17 to 22 dBm ±2.5 dB

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

MEAN TRANSMITTED RF CARRIER POWER (normal conditions) CLAUSE 6.3

Dynamic Power Control

Declared maximum output power W (.....dBm)

*Variant identification/Configuration code ....

Measurement carried out at *antenna connector/input to combiner

SFH Enabled/Disabled/Not supported Measured time slot ...

TEST CONDITIONS		BTS POWER SETTING	TRANSMITTER POWER (dBm)		
			Channel MHz	Channel MHz	Channel MHz
			TRX ident	TRX ident	TRX ident
T_{nom}(°C)	V_{nom}(V)	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15			
Power range over 2 x M dB steps (dB)					
Maximum deviation from 2 dB per step (dB)					
Measurement uncertainty (dB)			Equipment		Requirement
	absolute level step size				±1.0 ±0.7

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.3.3

Absolute Level (0)			
Normal BTS		nn dBm ±3.0 dB	
Micro BTS		GSM 900	DCS 1800
TRX power class	M1	>19 to 24 dBm ±3.0 dB	>27 to 32 dBm ±3.0 dB
	M2	>14 to 19 dBm ±3.0 dB	>22 to 27 dBm ±3.0 dB
	M3	>9 to 14 dBm ±3.0 dB	>17 to 22 dBm ±3.0 dB

Normal and Micro BTS	
Absolute Level (1-M)	$\leq$ ±3.0 dB
Power Range	2 x M dB ±3.0 dB
Step Size	2.0 dB ± 1.5 dB

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* The equipment was not tested to this clause - dynamic power control not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

TRANSMITTED RF CARRIER POWER VERSUS TIME CLAUSE 6.4

Declared maximum output power W

*Variant identification/Configuration code ....

Measurements carried out at the cabinet antenna connector

SFH Enabled/Disabled/Not supported Measured time slot ...

BTS POWER SETTING	TEST RESULT		
	Channel MHz	Channel MHz	Channel MHz
	TRX ident	TRX ident	TRX ident
P_{max} (0)			
P_{min} (see remarks)			
Measurement uncertainty (dB)		Equipment	Requirement
	Reference Relative		±1.0 ±1.0

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.4.3

Limit	As per power/time profile

Remarks

P_{min} = lowest static power level measured in sub clause 6.3

Plots of the power/time profile may be included in this report.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

POWER/TIME PROFILE CLAUSE 6.4

Channel (MHz) Power level 0 (maximum) Timeslot

Plot
(Optional)

Ambient temperature.....°C Relative humidity.....%

POWER/TIME PROFILE CLAUSE 6.4

Channel (MHz) Power level (minimum) Timeslot

Plot
(Optional)

Ambient temperature.....°C Relative humidity.....%

ADJACENT CHANNEL POWER - SPECTRUM DUE TO MODULATION
AND WIDEBAND NOISE CLAUSE 6.5.1

*Variant identification/Configuration code ....

Test performed with all timeslots active at maximum transmitter output power (0) at the cabinet antenna connector

MEASUREMENT		ADJACENT CHANNEL POWER (dBc)					
		Channel MHz		Channel MHz		Channel MHz	
		TRX ident		TRX ident		TRX ident	
Offset (kHz)		-	+	-	+	-	+
100 200 250 400 600 800 1000 1200 1400 1600 1800							
Transmit Band Highest* recorded value:- Offset 1.8 - 6 MHz Offset > 6 MHz	Offset (MHz)						
Measurement uncertainty (dB)				Equipment		Requirement	
	Absolute power Relative power:-					±1.0	
	Offset (MHz) $\delta f \leq 0.1$ $0.1 < \delta f \leq 1.8$ $0.1 < \delta f \leq 1.8$ $\delta f > 1.8$	Power difference (dB) All <50 ≥50 All				±0.5 ±0.7 ±1.5 ±2.0	

* Include all exceptions as defined in 6.5.1.3 3) and 4).

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.5.3.1

Normal BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -65 to ≤ -75*	≤ -80
Allowable Failures	0				3			12
Limit of Failure (dBm)	-				≤ -36			≤ -36

Micro BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -70 (GSM900) ≤ -76 (DCS1800)	≤ -70 (GSM900) ≤ -76 (DCS1800)
Allowable Failures	0				3			12
Limit of Failure (dBm)	-				≤ -36			≤ -36

Remarks

* These values are dependent on the transmitter power level.

** For a GSM900 BTS, if the limit is below -65dBm, a value of -65dBm shall be used instead.
For a DCS1800 BTS, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M1, if the limit is below -59dBm, a value of -59dBm shall be used instead.
For a DCS1800 Micro BTS of power class M1, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M2, if the limit is below -64dBm, a value of -64dBm shall be used instead.
For a DCS1800 Micro BTS of power class M2, if the limit is below -62dBm, a value of -62dBm shall be used instead.
For a GSM900 Micro BTS of power class M3, if the limit is below -69dBm, a value of -69dBm shall be used instead.
For a DCS1800 Micro BTS of power class M3, if the limit is below -67dBm, a value of -67dBm shall be used instead.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

ADJACENT CHANNEL POWER - SPECTRUM DUE TO MODULATION
AND WIDEBAND NOISE CLAUSE 6.5.1

*Variant identification/Configuration code ....

Test performed with all timeslots active at transmitter output power level at the cabinet antenna connector

MEASUREMENT		ADJACENT CHANNEL POWER (dBc)					
		Channel MHz		Channel MHz		Channel MHz	
		TRX ident		TRX ident		TRX ident	
Offset (kHz)		-	+	-	+	-	+
100 200 250 400 600 800 1000 1200 1400 1600 1800							
Transmit Band Highest* recorded value:- Offset 1.8 - 6 MHz Offset > 6 MHz	Offset (MHz)						
Measurement uncertainty (dB)				Equipment		Requirement	
	Absolute power Relative power:- Offset (MHz) $\delta f \leq 0.1$ $0.1 < \delta f \leq 1.8$ $0.1 < \delta f \leq 1.8$ $\delta f > 1.8$					±1.0 Power difference (dB) All <50 ≥50 All	 ±0.5 ±0.7 ±1.5 ±2.0

* Include all exceptions as defined in 6.5.1.3 3) and 4).

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.5.3.1

Normal BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -65 to ≤ -75*	≤ -80
Allowable Failures	0				3			12
Limit of Failure (dBm)	-				≤ -36			≤ -36

Micro BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -70 (GSM900) ≤ -76 (DCS1800)	≤ -70 (GSM900) ≤ -76 (DCS1800)
Allowable Failures	0				3			12
Limit of Failure (dBm)	-				≤ -36			≤ -36

Remarks

* These values are dependent on the transmitter power level.

** For a GSM900 BTS, if the limit is below -65dBm, a value of -65dBm shall be used instead.
For a DCS1800 BTS, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M1, if the limit is below -59dBm, a value of -59dBm shall be used instead.
For a DCS1800 Micro BTS of power class M1, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M2, if the limit is below -64dBm, a value of -64dBm shall be used instead.
For a DCS1800 Micro BTS of power class M2, if the limit is below -62dBm, a value of -62dBm shall be used instead.
For a GSM900 Micro BTS of power class M3, if the limit is below -69dBm, a value of -69dBm shall be used instead.
For a DCS1800 Micro BTS of power class M3, if the limit is below -67dBm, a value of -67dBm shall be used instead.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

ADJACENT CHANNEL POWER - SPECTRUM DUE TO MODULATION
AND WIDEBAND NOISE CLAUSE 6.5.1

*Variant identification/Configuration code ....

Test performed with all timeslots active at minimum transmitter output power at the cabinet antenna connector

MEASUREMENT		ADJACENT CHANNEL POWER (dBc)					
		Channel MHz		Channel MHz		Channel MHz	
		TRX ident		TRX ident		TRX ident	
Offset (kHz)		-	+	-	+	-	+
100 200 250 400 600 800 1000 1200 1400 1600 1800							
Transmit Band Highest recorded value:- Offset 1.8 - 6 MHz Offset > 6 MHz	Offset (MHz)						
Measurement uncertainty (dB)				Equipment		Requirement	
	Absolute power Relative power:-					±1.0	
	Offset (MHz) $\delta f \leq 0.1$ $0.1 < \delta f \leq 1.8$ $0.1 < \delta f \leq 1.8$ $\delta f > 1.8$	Power difference (dB) All <50 ≥50 All				±0.5 ±0.7 ±1.5 ±2.0	

* Include all exceptions as defined in 6.5.1.3 3) and 4).

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.5.3.1

Normal BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -65 to ≤ -75*	≤ -80
Allowable Failures	0				3			12
Limit of Failure (dBm)	-				≤ -36			≤ -36

Micro BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -70 (GSM900) ≤ -76 (DCS1800)	≤ -70 (GSM900) ≤ -76 (DCS1800)
Allowable Failures	0				3			12
Limit of Failure (dBm)	-				≤ -36			≤ -36

Remarks

* These values are dependent on the transmitter power level.

** For a GSM900 BTS, if the limit is below -65dBm, a value of -65dBm shall be used instead.
For a DCS1800 BTS, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M1, if the limit is below -59dBm, a value of -59dBm shall be used instead.
For a DCS1800 Micro BTS of power class M1, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M2, if the limit is below -64dBm, a value of -64dBm shall be used instead.
For a DCS1800 Micro BTS of power class M2, if the limit is below -62dBm, a value of -62dBm shall be used instead.
For a GSM900 Micro BTS of power class M3, if the limit is below -69dBm, a value of -69dBm shall be used instead.
For a DCS1800 Micro BTS of power class M3, if the limit is below -67dBm, a value of -67dBm shall be used instead.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

ADJACENT CHANNEL POWER - SWITCHING TRANSIENTS SPECTRUM CLAUSE 6.5.2

*Variant identification/Configuration code ....

Test performed with all timeslots active as stated

SFH Disabled (if supported)

MEASUREMENT		ADJACENT CHANNEL POWER (dBc)					
		Channel MHz		Channel MHz		Channel MHz	
		TRX ident		TRX ident		TRX ident	
Timeslot Power Levels	Offset (kHz)	-	+	-	+	-	+
0 (maximum)	400 600 1200 1800						
n* (minimum static power level) (see remarks)	400 600 1200 1800						
Complex Profile (maximum static level 0) (see remarks)	400 600 1200 1800						
Complex Profile (minimum static level n*) (see remarks)	400 600 1200 1800						
Complex Profile (dynamic**) (see remarks)	400 600 1200 1800						
Measurement uncertainty (dB)		Equipment			Requirement		
	Absolute power: Relative power:- Power diference (dB) <50 ≥50				±1.5 ±0.7 ±1.5		

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.5.2.3

Carrier Offset (kHz)		400	600	1200	1800
Limit	GSM 900 the greater of	≤ -57dBc or ≤ -36dBm	≤ -67dBc or ≤ -36dBm	≤ -74dBc or ≤ -36dBm	≤ -74dBc or ≤ -36dBm
	DCS 1800 the greater of	≤ -50dBc or ≤ -36dBm	≤ -58dBc or ≤ -36dBm	≤ -66dBc or ≤ -36dBm	≤ -66dBc or ≤ -36dBm

Remarks

The 'Complex Profile' timeslot power level is defined as timeslots 0, 2, 4, & 6 at stated power (0 or 6); timeslots 1 & 5 at minimum power (15) or P_{idle} if downlink RF power control is not supported by the BSS; and timeslots 3 & 7 at P_{idle}.

* Enter power level step number here.

Result ** The equipment passed/failed the requirement of this clause.
** The equipment was not tested to this clause. See configuration .../page no. ...
** The equipment was not tested to this clause - dynamic power control not supported.

** Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

ADJACENT CHANNEL POWER - SWITCHING TRANSIENTS SPECTRUM CLAUSE 6.5.2

*Variant identification/Configuration code ....

Test performed with all timeslots active as stated

SFH Enabled

MEASUREMENT		ADJACENT CHANNEL POWER (dBc)					
		Channel MHz		Channel MHz		Channel MHz	
		TRX ident		TRX ident		TRX ident	
Timeslot Power Levels	Offset (kHz)	-	+	-	+	-	+
0 (maximum)	400 600 1200 1800						
n* (minimum static power level) (see remarks)	400 600 1200 1800						
Measurement uncertainty (dB)		Equipment		Requirement			
	Absolute power: Relative power:- Power diference (dB) <50 ≥50			±1.5 ±0.7 ±1.5			

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.5.2.3

Carrier Offset (kHz)		400	600	1200	1800
Limit	GSM 900 the greater of	≤ -57dBc or ≤ -36dBm	≤ -67dBc or ≤ -36dBm	≤ -74dBc or ≤ -36dBm	≤ -74dBc or ≤ -36dBm
	DCS 1800 the greater of	≤ -50dBc or ≤ -36dBm	≤ -58dBc or ≤ -36dBm	≤ -66dBc or ≤ -36dBm	≤ -66dBc or ≤ -36dBm

Remarks

* Enter power level step number here.

Result ** The equipment passed/failed the requirement of this clause.
** The equipment was not tested to this clause. See configuration .../page no. ...

** Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

CONDUCTED SPURIOUS EMISSIONS FROM THE TRANSMITTER ANTENNA CONNECTOR - INSIDE THE BTS TRANSMIT BAND CLAUSE 6.6.1

*Variant identification/Configuration code ....

Power level at which the measurement was carried out 0 (maximum) All timeslots

SFH Disabled (if supported)

FREQUENCY (MHz)	SPURIOUS EMISSION LEVEL (dBm)	
	Channel ** MHz	
	TRX ident	
	Equipment	Requirement
Measurement uncertainty (dB)		±1.5

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.6.1.3

Limit	≤ -36dBm

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

** a separate page should be completed for each channel tested.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

CONDUCTED SPURIOUS EMISSIONS FROM THE TRANSMITTER ANTENNA CONNECTOR - OUTSIDE THE BTS TRANSMIT BAND - 1805 MHz to 1880 MHz (For GSM 900) or 925 MHz to 960 MHz (For DCS 1800) CLAUSE 6.6.2

* Variant identification/Configuration code ....

Power level at which the measurement was carried out 0 (maximum) All timeslots

SFH Disabled (if supported)

FREQUENCY (MHz)	SPURIOUS EMISSION LEVEL (dBm)	
	Channel ** MHz	
	TRX ident	
	Equipment	Requirement
Measurement uncertainty (dB)		±1.5 dB

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.6.2.3

Limit	GSM 900 DCS 1800	≤ -47 dBm ≤ -57 dBm

Remarks

The transceivers were transmitting on the channels as indicated below :-

TRX ident	Channel MHz	TRX ident	Channel MHz

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

** A separate page should be completed for each channel tested.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

CONDUCTED SPURIOUS EMISSIONS FROM THE TRANSMITTER ANTENNA CONNECTOR - OUTSIDE THE GSM 900 AND DCS 1800 TRANSMIT BANDS CLAUSE 6.6.2

* Variant identification/Configuration code ....

Transmitting operating

Power level at which the measurement was carried out 0 (maximum) Alternate timeslots

SFH Enabled/ Not supported

FREQUENCY (MHz)		SPURIOUS EMISSION LEVEL (dBm)	
Measurement uncertainty (dB)		Equipment	Requirement
	f ≤ 2 GHz 2 GHz < f ≤ 4 GHz > 4 GHz		±1.5 dB ±2.0 dB ±4.0 dB

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.6.2.3

Tx Mode	GSM 900	DCS 1800	1 GHz to 12.75 GHz
	100 kHz to 925 MHz 960 MHz to 1000 MHz	100 kHz to 1000 MHz	
Operating	≤ -36.0 dBm	≤ -36.0 dBm	≤ -30.0 dBm

Remarks

The transceivers were transmitting on the channels as indicated below :-

TRX ident	Channel MHz	TRX ident	Channel MHz

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

INTERMODULATION ATTENUATION - INTERMODULATION PRODUCT FALLING IN THE TRANSMIT BAND (925.0 to 960.0 MHz) (For GSM 900) or (1805.0 to 1880.0 MHz) (For DCS 1800) CLAUSE 6.7

* Variant identification/Configuration code ....

Power level at which the measurement was carried out 0 (maximum)

SFH Disabled (if supported)

(a) Intermodulation product frequency offsets greater than 6 MHz

INTERFERING SIGNAL	ATTENUATION (dB)					
	Channel MHz		Channel MHz		Channel MHz	
	TRX ident		TRX ident		TRX ident	
	+	-	+	-	+	-
(3rd order) -3.2 MHz offset	n/a	(-6.4)*	n/a	(-6.4)*	n/a	(-6.4)*
(3rd order) -6.2 MHz offset	(+6.2)*	(-12.4)*	(+6.2)*	(-12.4)*	(+6.2)*	(-12.4)*
(3rd order) +6.2 MHz offset	(+12.4)*	(-6.2)*	(+12.4)*	(-6.2)*	(+12.4)*	(-6.2)*
(3rd order) +3.2 MHz offset	(+6.4)*	n/a	(+6.4)*	n/a	(+6.4)*	n/a
(5th order) -3.2 MHz offset	(+6.4)*	(-9.6)*	(+6.4)*	(-9.6)*	(+6.4)*	(-9.6)*
(5th order) -6.2 MHz offset	(+12.4)*	(-18.6)*	(+12.4)*	(-18.6)*	(+12.4)*	(-18.6)*
(5th order) +6.2 MHz offset	(+18.6)*	(-12.4)*	(+18.6)*	(-12.4)*	(+18.6)*	(-12.4)*
(5th order)+3.2 MHz offset	(+9.6)*	(-6.4)*	(+9.6)*	(-6.4)*	(+9.6)*	(+6.4)*

Measurement uncertainty (dB)		Equipment	Requirement
	Absolute level Relative level		±1.5 ±2.0

* The figures in parentheses ( ) indicate the offset of the intermodulation product from the channel frequency. They are included for information only and will not appear in the final test report.

(b) Intermodulation product frequency offsets between 1.8 and 6 MHz

INTERFERING SIGNAL		ATTENUATION (dB)					
		Channel MHz		Channel MHz		Channel MHz	
		TRX ident		TRX ident		TRX ident	
		+	-	+	-	+	-
(3rd order) -3.2 MHz offset		(+3.2)*	- (-6.4)*	(+3.2)*	- (-6.4)*	(+3.2)*	- (-6.4)*
(3rd order) -2.0 MHz offset		(+2.0)*	(-4.0)*	(+2.0)*	(-4.0)*	(+2.0)*	(-4.0)*
(3rd order) +2.0 MHz offset		(+4.0)*	(-2.0)*	(+4.0)*	(-2.0)*	(+4.0)*	(-2.0)*
(3rd order) +3.2 MHz offset		- (+6.4)*	(-3.2)*	- (+6.4)*	(-3.2)*	- (+6.4)*	(-3.2)*
(5th order) -3.2 MHz offset		- (+6.4)*	- (-9.6)*	- (+6.4)*	- (-9.6)*	- (+6.4)*	- (-9.6)*
(5th order) -2.0 MHz offset		(+4.0)*	(-6.0)*	(+4.0)*	(-6.0)*	(+4.0)*	(-6.0)*
(5th order) -0.8 MHz offset		- (+1.6)*	(-2.4)*	- (+1.6)*	(-2.4)*	- (+1.6)*	(-2.4)*
(5th order) +0.8 MHz offset		(+2.4)*	- (-1.6)*	(+2.4)*	- (-1.6)*	(+2.4)*	- (-1.6)*
(5th order) +2.0 MHz offset		(+6.0)*	(-4.0)*	(+6.0)*	(-4.0)*	(+6.0)*	(-4.0)*
(5th order) +3.2 MHz offset		- (+9.6)*	- (-6.4)*	- (+9.6)*	- (-6.4)*	- (+9.6)*	- (-6.4)*
Measurement uncertainty (dB)		Equipment			Requirement		
	Absolute level Relative level				±1.5 ±2.0		

(c) Intermodulation product frequency offsets less than 1.8 MHz

INTERFERING SIGNAL		ATTENUATION (dB)					
		Channel MHz		Channel MHz		Channel MHz	
		TRX ident		TRX ident		TRX ident	
		+	-	+	-	+	-
(3rd order) -0.8 MHz offset		(+0.8)*	(-1.6)*	(+0.8)*	(-1.6)*	(+0.8)*	(-1.6)*
(3rd order) +0.8 MHz offset		(+1.6)*	(-0.8)*	(+1.6)*	(-0.8)*	(+1.6)*	(-0.8)*
(5th order) -0.8 MHz offset		(+1.6)*	- (-2.4)*	(+1.6)*	- (-2.4)*	(+1.6)*	- (-2.4)*
(5th order) +0.8 MHz offset		- (+2.4)*	(-1.6)*	- (+2.4)*	(-1.6)*	- (+2.4)*	(-1.6)*
Measurement uncertainty (dB)		Equipment			Requirement		
	Absolute level Relative level				±1.5 ±2.0		

* The figures in parentheses ( ) indicate the offset of the intermodulation product from the channel frequency. They are included for information only and will not appear in the final test report.

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.7.3

NORMAL BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -65 to ≤ -75*	≤ -70dBc or ≤ -36dBm
Allowable Failures	0				3			1 in 100
Limit of Failure (dBm)	-				≤ -36			≤ -60dBc or ≤ -26dBm

Micro BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -70 (GSM900) ≤ -76 (DCS1800)	≤ -70 (GSM900) ≤ -76 (DCS1800)
Allowable Failures	0				3			12
Limit of Failure (dBm)	-				≤ -36			≤ -36

Remarks

* These values are dependent on the transmitter power level.

** For a GSM900 BTS, if the limit is below -65dBm, a value of -65dBm shall be used instead.
For a DCS1800 BTS, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M1, if the limit is below -59dBm, a value of -59dBm shall be used instead.
For a DCS1800 Micro BTS of power class M1, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M2, if the limit is below -64dBm, a value of -64dBm shall be used instead.
For a DCS1800 Micro BTS of power class M2, if the limit is below -62dBm, a value of -62dBm shall be used instead.
For a GSM900 Micro BTS of power class M3, if the limit is below -69dBm, a value of -69dBm shall be used instead.
For a DCS1800 Micro BTS of power class M3, if the limit is below -67dBm, a value of -67dBm shall be used instead.

Result *** The equipment passed/failed the requirement of this clause.
*** The equipment was not tested to this clause. See configuration .../page no. ...

*** Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

INTRA BASE STATION SYSTEM INTERMODULATION ATTENUATION -
INTERMODULATION PRODUCT FALLING IN THE TRANSMIT BAND
(925.0 to 960.0 MHz) (For GSM 900) or (1805.0 to 1880.0 MHz) (For DCS 1800) CLAUSE 6.8

* Variant identification/Configuration code ....

Power level at which the measurement was carried out 0 (maximum)

SFH Disabled (if supported)

Minimum declared frequency spacing (.....kHz/MHz)

TRX ARFCN's		ATTENUATION (dB)					
		Channel MHz		Channel MHz		Channel MHz	
		TRX ident		TRX ident		TRX ident	
		+	-	+	-	+	-
Measurement uncertainty (dB)		Equipment		Requirement			
	Absolute level Relative level			±1.5 ±2.0			

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 6.7.3

NORMAL BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -65 to ≤ -75*	≤ -70dBc or ≤ -36dBm
Allowable Failures	0				3			1 in 100
Limit of Failure (dBm)	-				≤ -36			≤ -60dBc or ≤ -26dBm

Micro BTS								
Transmit Band Carrier Offset (kHz)	100	200	250	400	600 to <1200	1200 to <1800	1800 to ≤ 6000	>6000
Limit (dBc)**	≤ +0.5	≤ -30	≤ -33	≤ -60	≤ -60 to ≤ -70*	≤ -63 to ≤ -73*	≤ -70 (GSM900) ≤ -76 (DCS1800)	≤ -70 (GSM900) ≤ -76 (DCS1800)
Allowable Failures	0				3			12
Limit of Failure (dBm)	-				≤ -36			≤ -36

Remarks

* These values are dependent on the transmitter power level.

** For a GSM900 BTS, if the limit is below -65dBm, a value of -65dBm shall be used instead.
For a DCS1800 BTS, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M1, if the limit is below -59dBm, a value of -59dBm shall be used instead.
For a DCS1800 Micro BTS of power class M1, if the limit is below -57dBm, a value of -57dBm shall be used instead.
For a GSM900 Micro BTS of power class M2, if the limit is below -64dBm, a value of -64dBm shall be used instead.
For a DCS1800 Micro BTS of power class M2, if the limit is below -62dBm, a value of -62dBm shall be used instead.
For a GSM900 Micro BTS of power class M3, if the limit is below -69dBm, a value of -69dBm shall be used instead.
For a DCS1800 Micro BTS of power class M3, if the limit is below -67dBm, a value of -67dBm shall be used instead.

Result *** The equipment passed/failed the requirement of this clause.
*** The equipment was not tested to this clause. See configuration .../page no. ...

*** Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

STATIC REFERENCE SENSITIVITY LEVEL CLAUSE 7.3

* Variant identification/Configuration code ....

TEST CONDITIONS	CHANNEL TYPE	RESIDUAL BIT ERROR/FRAME ERASURE RATIO (%)	
		Channel MHz	
		TRX ident	
Non Hopping	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II		
	TCH/HS FER** TCH/HS Class Ib** TCH/HS Class II (BFI=0)		
Hopping (if supported)	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II		
	TCH/HS FER** TCH/HS Class Ib** TCH/HS Class II (BFI=0)		
Measurement uncertainty (dB)		Equipment	Requirement
			±1.0

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.3.3

Channel Type	Error Measure	
	FER(%)	RBER(%)
TCH/FS	$\leq 0.1\alpha$ (0.10 to 0.16)	-
TCH/FS-Class Ib	-	$\leq 0.4/\alpha$ (0.25 to 0.40)
TCH/FS-Class II	-	≤ 2.0
TCH/HS	≤ 0.025	-
TCH/HS-Class Ib	-	≤ 0.001
TCH/HS-Class II	-	≤ 0.72

Where $1.0 \leq \alpha \leq 1.6$ and the same for both occurrences. ** Indicate which value(s) of α were used to demonstrate conformance.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

MULTIPATH REFERENCE SENSITIVITY LEVEL CLAUSE 7.4

* Variant identification/Configuration code ....

MULTIPATH TEST CONDITION	CHANNEL TYPE	RESIDUAL BIT ERROR/FRAME ERASURE RATIO (%)		
		Channel MHz	Channel MHz	Channel MHz
		TRX ident	TRX ident	TRX ident
TU50/No SFH	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II			
RA130 or RA250/No SFH	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II	-		-
HT100/No SFH	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II	-		-
Measurement uncertainty (dB)		Equipment	Requirement	
			±1.5	

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.4.3

GSM 900

Channel Type	Error Measure	Error Ratio for the specified propagation conditions (%)		
		TU50 (No SFH)	RA250 (No SFH)	HT100 (No SFH)
TCH/FS	FER	$\leq 6.0\alpha$ (6.0 to 9.6)	$\leq 2.0\alpha$ (2.0 to 3.2)	$\leq 7.0\alpha$ (7.0 to 11.2)
TCH/FS-Class Ib	RBER	$\leq 0.4/\alpha$ (0.25 to 0.40)	$\leq 0.2/\alpha$ (0.125 to 0.20)	$\leq 0.5/\alpha$ (0.3125 to 0.50)
TCH/FS-Class II	RBER	≤ 8.0	≤ 7.0	≤ 9.0

DCS 1800

Channel Type	Error Measure	Error Ratio for the specified propagation conditions (%)		
		TU50 (No SFH)	RA130 (No SFH)	HT100 (No SFH)
TCH/FS	FER	$\leq 4.0\alpha$ (4.0 to 6.4)	$\leq 2.0\alpha$ (2.0 to 3.2)	$\leq 7.0\alpha$ (7.0 to 11.2)
TCH/FS-Class Ib	RBER	$\leq 0.3/\alpha$ (0.1875 to 0.30)	$\leq 0.2/\alpha$ (0.125 to 0.20)	$\leq 0.5/\alpha$ (0.3125 to 0.50)
TCH/FS-Class II	RBER	≤ 8.0	≤ 7.0	≤ 9.0

Where $1.0 \leq \alpha \leq 1.6$ and the same for both occurrences in each channel condition. It may be different for different propagation conditions. ** Indicate which value(s) of α were used to demonstrate conformance.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

MULTIPATH REFERENCE SENSITIVITY LEVEL - Continued CLAUSE 7.4

* Variant identification/Configuration code ....

MULTIPATH TEST CONDITION	CHANNEL TYPE	RESIDUAL BIT ERROR/FRAME ERASURE RATIO (%)	
		Channel MHz	
		TRX ident	
TU50/No SFH	TCH/HS FER TCH/HS Class Ib TCH/HS Class II (BFI=0)		
RA130 or RA250/No SFH	TCH/HS FER TCH/HS Class Ib TCH/HS Class II (BFI=0)		
HT100/No SFH	TCH/HS FER TCH/HS Class Ib TCH/HS Class II (BFI=0)		
Measurement uncertainty (dB)		Equipment	Requirement
			±1.5

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.4.3

GSM 900

Channel Type	Error Measure	Error ratio for the specified propagation conditions (%)		
		TU50 (No SFH)	RA250 (No SFH)	HT100 (No SFH)
TCH/HS TCH/HS-Class Ib TCH/HS-Class II	FER RBER (BFI=0) RBER (BFI=0)	$\leq$ 4.1 $\leq$ 0.36 $\leq$ 6.9	$\leq$ 4.1 $\leq$ 0.28 $\leq$ 6.8	$\leq$ 4.5 $\leq$ 0.56 $\leq$ 7.6

DCS 1800

Channel Type	Error Measure	Error ratio for the specified propagation conditions (%)		
		TU50 (No SFH)	RA130 (No SFH)	HT100 (No SFH)
TCH/HS TCH/HS-Class Ib TCH/HS-Class II	FER RBER (BFI=0) RBER (BFI=0)	$\leq$ 4.2 $\leq$ 0.38 $\leq$ 6.9	$\leq$ 4.1 $\leq$ 0.28 $\leq$ 6.8	$\leq$ 5.0 $\leq$ 0.63 $\leq$ 7.8

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

MULTIPATH REFERENCE SENSITIVITY LEVEL - Continued CLAUSE 7.4

* Variant identification/Configuration code ....

MULTIPATH TEST CONDITION	CHANNEL TYPE	RESIDUAL BIT ERROR/FRAME ERASURE RATIO (%)	
		Channel MHz	
		TRX ident	
TU50/No SFH	SDCCH/FER		
RA130 or RA250/No SFH	SDCCH/FER		
	TCH/F9.6 BER		
	TCH/F4.8 BER		
HT100/No SFH	SDCCH/FER		
	TCH/F9.6 BER		
	TCH/F4.8 BER		
Measurement uncertainty (dB)		Equipment	Requirement
			±1.5

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.4.3

GSM 900

Channel Type	Error Measure	Error ratio for the specified propagation conditions		
		TU50 (No SFH)	RA250 (No SFH)	HT100 (No SFH)
SDCCH	FER	$\leq$ 13.0%	$\leq$ 8.0%	$\leq$ 12.0%
TCH/F 9.6	BER	$\leq$ 0.5%	$\leq$ 0.1%	$\leq$ 0.7%
TCH/F 4.8	BER	$\leq 10^{-4}$	$\leq 10^{-4}$	$\leq 10^{-4}$

DCS 1800

Channel Type	Error Measure	Error ratio for the specified propagation conditions		
		TU50 (No SFH)	RA130 (No SFH)	HT100 (No SFH)
SDCCH	FER	$\leq$ 9.0%	$\leq$ 8.0%	$\leq$ 13.0%
TCH/F 9.6	BER	$\leq$ 0.40%	$\leq$ 0.1%	$\leq$ 0.7%
TCH/F 4.8	BER	$\leq 10^{-4}$	$\leq 10^{-4}$	$\leq 10^{-4}$

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

REFERENCE INTERFERENCE LEVEL CLAUSE 7.5

* Variant identification/Configuration code ....

MULTIPATH TEST CONDITION (TU50)	CHANNEL TYPE	BIT ERROR/FRAME ERASURE RATIO (%)		
Offset (kHz)			Channel MHz	
			TRX ident	
0 (No SFH)	TCH/F 9.6 TCH/F 4.8	-		-
+200 (No SFH)	FACCH/F	-		-
-200 (No SFH)	FACCH/F	-		-
+400 (No SFH)	FACCH/F	-		-
-400 (No SFH)	FACCH/F	-		-
Measurement uncertainty (dB)		Equipment	Requirement	
			+5, -0	

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.5.3

GSM 900

Channel Type	Error Measure	Error ratio for the specified propagation conditions	
		TU50 (No SFH)	
		0 and 200 kHz offset	400 kHz offset
TCH/F9.6	BER	$\leq$ 0.8%	$\leq$ 0.8%
TCH/F4.8	BER	$\leq 10^{-4}$	$\leq 10^{-4}$
FACCH/F	BER	$\leq$ 9.5%	$\leq$ 17.1%

DCS 1800

Channel Type	Error Measure	Error ratio for the specified propagation conditions	
		TU50 (No SFH)	
		0 and 200 kHz offset	400 kHz offset
TCH/F9.6	BER	$\leq$ 0.8%	$\leq$ 0.8%
TCH/F4.8	BER	$\leq 10^{-4}$	$\leq 10^{-4}$
FACCH/F	BER	$\leq$ 3.4%	$\leq$ 6.1%

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

REFERENCE INTERFERENCE LEVEL - Continued CLAUSE 7.5

* Variant identification/Configuration code ....

MULTIPATH TEST CONDITION TU50	CHANNEL TYPE	RESIDUAL BIT ERROR/FRAME ERASURE RATIO (%)		
Offset (kHz)		Channel MHz	Channel MHz	Channel MHz
		TRX ident	TRX ident	TRX ident
0 (SFH) (if supported)	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II	-		-
0 (No SFH)	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II	-		-
+200 (No SFH)	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II	-		-
-200 (No SFH)	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II	-		-
+400 (No SFH)	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II			
-400 (No SFH)	TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II			
Measurement uncertainty (dB)		Equipment	Requirement	
			+5, -0	

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.5.3

GSM 900

Channel Type	Error Measure	Error ratio for the specified propagation conditions (%)		
		TU50 (ideal SFH)	TU50 (No SFH)	
			0 and 200 kHz offset	400 kHz offset
TCH/FS	FER	$\leq 3.0\alpha$ (3.0 to 4.8)	$\leq 6.0\alpha$ (6.0 to 9.6)	$\leq 10.2\alpha$ (10.2 to 16.32)
TCH/FS-Class Ib	RBER	$\leq 0.2/\alpha$ (0.125 to 0.20)	$\leq 0.4/\alpha$ (0.25 to 0.40)	$\leq 0.72/\alpha$ (0.45 to 0.72)
TCH/FS-Class II	RBER	≤ 8.0	≤ 8.0	≤ 8.8

DCS 1800

Channel Type	Error Measure	Error ratio for the specified propagation conditions (%)		
		TU50 (ideal SFH)	TU50 (No SFH)	
			0 and 200 kHz offset	400 kHz offset
TCH/FS	FER	$\leq 3.0\alpha$ (3.0 to 4.8)	$\leq 3.0\alpha$ (3.0 to 4.8)	$\leq 5.1\alpha$ (5.1 to 8.16)
TCH/FS-Class Ib	RBER	$\leq 0.25/\alpha$ (0.15625 to 0.25)	$\leq 0.25/\alpha$ (0.15625 to 0.25)	$\leq 0.45/\alpha$ (0.28125 to 0.45)
TCH/FS-Class II	RBER	≤ 8.1	≤ 8.1	≤ 8.9

Where $1.0 \leq \alpha \leq 1.6$ and the same for both occurrences in each channel condition. It may be different for different propagation conditions. ** Indicate which value(s) of α were used to demonstrate conformance.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

REFERENCE INTERFERENCE LEVEL - Continued CLAUSE 7.5

* Variant identification/Configuration code ....

MULTIPATH TEST CONDITION (TU3 - GSM900) (TU1.5 - DCS 18000)	CHANNEL TYPE	RESIDUAL BIT ERROR/FRAME ERASURE RATIO (%)		
		Channel MHz	Channel MHz	Channel MHz
		TRX ident	TRX ident	TRX ident
No SFH	SDCCH FER FACCH/F FACCH/H TCH/FS FER** TCH/FS Class Ib** TCH/FS Class II TCH/F 9.6 TCH/F 4.8			
Measurement uncertainty (dB)		Equipment	Requirement	
			+5, -0	

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.5.3

Channel Type	Error Measure	Error ratio for TU1.5/TU3 (No SFH) propagation condition (%)
SDCCH	FER	$\leq$ 22.0
FACCH/F	FER	$\leq$ 22.0
FACCH/H	FER	$\leq$ 22.0
TCH/FS	FER	$\leq 21.0\alpha$ (21.0 to 33.6)
TCH/FS-Class Ib	RBER	$\leq 2.0/\alpha$ (1.25 to 2.0)
TCH/FS-Class II	RBER	$\leq$ 4.0
TCH/F 9.6	BER	$\leq$ 8.0
TCH/F 4.8	BER	$\leq$ 3.0

Where $1.0 \leq \alpha \leq 1.6$ and the same for both occurrences in each channel condition. It may be different for different propagation conditions. ** Indicate which value(s) of α were used to demonstrate conformance.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

BLOCKING CHARACTERISTICS CLAUSE 7.6

* Variant identification/Configuration code ....

SPURIOUS RESPONSES (MHz)	RESIDUAL BIT ERROR RATIO - TCH/FS Class II bits (%)		
		Channel MHz	
		TRX ident	
Measurement uncertainty (dB)		Equipment	Requirement
	Wanted signal Interfering signal f ≤ 2 GHz 2 GHz < f ≤ 4 GHz f > 4 GHz		±1.0 ±0.7 ±1.5 ±3.0

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.6.3

Blocking :

GSM 900

Limit	≤ 2.0%	
Allowable exceptions	≤ 45 MHz offset ≤ 6 of which no more than 3 are consecutive	> 45 MHz offset ≤ 24 of which no more than 3 are consecutive

DCS 1800

Limit	≤ 2.0%	
Allowable exceptions	≤ 95 MHz offset ≤ 12 of which no more than 3 are consecutive	> 95 MHz offset ≤ 24 of which no more than 3 are consecutive

Spurious response :

Limit	≤ 2.0% at -43 dBm interfering signal level
Allowable exceptions	None

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

INTERMODULATION CHARACTERISTICS CLAUSE 7.7

* Variant identification/Configuration code ....

FREQUENCY INCREMENTS OF UNWANTED SIGNALS		RESIDUAL BIT ERROR RATIO - TCH/FS Class II bits (%)		
SIG GEN A	SIG GEN B	Channel MHz	Channel MHz	Channel MHz
		TRX ident	TRX ident	TRX ident
f_{chan}-1.6 MHz (-8 channels)	f_{chan}-0.8 MHz (-4 channels)			
f_{chan}+1.6 MHz (+8 channels)	f_{chan}+0.8 MHz (+4 channels)			
Measurement uncertainty (dB)			Equipment	Requirement
		Wanted signal Interfering signal		±1.0 ±0.7

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.7.3

Limit	$\leq$ 2.0%

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

AM SUPPRESSION CLAUSE 7.8

* Variant identification/Configuration code ....

SFH disabled (if supported)

INTERFERER FREQUENCY (MHz)	CHANNEL TYPE	RESIDUAL BIT ERROR/FRAME ERASURE RATIO (%)		
		-	Channel MHz	-
			TRX ID	
	TCH/FS FER** TCH/FS-Class Ib** TCH/FS-Class II			
Measurement Uncertainty (dB)			Equipment	Requirement
		Wanted signal Interfering signal		±1.0 ±0.7

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.8.3

Channel Type	Error Measure	
	FER (%)	RBER (%)
TCH/FS	$\leq 0.1\alpha$ (0.1 to 0.16)	-
TCH/FS-Class Ib	-	$\leq 0.4/\alpha$ (0.25 to 0.40)
TCH/FS-Class II	-	≤ 2.0

Where $1.0 \leq \alpha \leq 1.6$ and the same for both occurrences in each channel condition. It may be different for different propagation conditions. ** Indicate which value(s) of α were used to demonstrate conformance.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* This logical channel is not supported.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

SPURIOUS EMISSIONS FROM THE RECEIVER ANTENNA CONNECTOR CLAUSE 7.9

* Variant identification/Configuration code ....

FREQUENCY (MHz)	SPURIOUS EMISSION LEVEL (dBm)		
		Channel MHz	
		TRX Ident	
Measurement uncertainty (dB)		Equipment	Requirement
	f ≤ 2 GHz 2 GHz < f ≤ 4 GHz f > 4 GHz		±1.5 ±2.0 ±4.0

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 7.9.3

Frequency range	9 kHz - 1000 MHz	1 - 12.75 GHz
Limit	≤ -57dBm	≤ -47dBm

Note : If the receivers operate in non-duplex mode and are diversity, then both parts are to be tested.

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...
* The equipment was not tested to this clause - fitted with integral duplexer.

* Delete as required.

TEST EQUIPMENT USED:

.....

Ambient temperature.....°C Relative humidity.....%

RADIATED SPURIOUS EMISSIONS CLAUSE 8

* Variant identification/Configuration code ....

FREQUENCY OF SPURIOUS RADIATIONS (MHz)	LEVEL (dBm)	
Measurement uncertainty (dB)	Equipment	Requirement
		±6.0

Worst value in each frequency band		
Frequency band	Frequency (MHz)	Level (dBm)

ESSENTIAL CONFORMANCE REQUIREMENT CLAUSE 8.3

Frequency Range	30 MHz to 1000 MHz	1 GHz to 4 GHz
Limit	$\leq$ -36.0 dBm	$\leq$ -30.0 dBm

Remarks

The TRX's were transmitting on the channels as indicated below :-

TRX ID	Channel MHz	TRX ID	Channel MHz

Result * The equipment passed/failed the requirement of this clause.
* The equipment was not tested to this clause. See configuration .../page no. ...

* Delete as required.

TEST EQUIPMENT USED:

.....

MODULE LIST

TYPE DESIGNATION	PART NUMBER	SERIAL NUMBER

Date of Receipt of
Test Sample :

Start of Test :

Finish of Test :

Location of Test :

Test Engineer :

Project Engineer :

Approved by : _____

Date : _____

TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory.

No	Instrument/Ancillary	Type	Manufacturer	Serial No

Photographs of the equipment are to be provided as part of the Test Report.
As a minimum the photographs shall be of:-

1. Assembly of units or parts

2. Front of unit (Showing controls/labelling etc.)

3. Rear of unit (Showing antenna connector(s), labelling etc.)

4. If the label or identifying mark is affixed on a surface other than at 2. or 3. above a photograph of this shall be provided

5. ONLY AFTER TYPE TESTING IS COMPLETED, the equipment shall be opened and photographs of the internal construction shall be made.

6. The photographs shall be colour plate and of a size not less than 170mm x 120mm

7. Each photograph shall be clearly identified and mounted on a separate page