Appendix 5. System Check

Prior to the assessment, the system was verified in the flat region of the phantom, 900 MHz, 1900 MHz, 2450 MHz and 5.0 GHz dipoles were used. A forward power of 250 mW was applied to the 900 MHz, 1900 MHz, 2450 MHz dipoles and 100 mW was applied to 5.0 GHz dipole and the system was verified to a tolerance of \pm 5% for the 900MHz, 1800MHz, 1900MHz, 2450 MHz and 5.0 GHz dipoles.

The applicable verification normalised to 1 Watt.

System Check 900 Head Date: 02/04/2013 Validation Dipole and Serial Number: D900V2; SN: 035

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
	Head 900 24.0 ºC		20.6 °C	ε _r	41.50	41.11	-0.94	5.00
Head		24.0 ⁰C		σ	0.97	0.97	-0.31	5.00
Head 500	24.0 0	20.0 0	1g SAR	10.50	10.12	-3.62	5.00	
				10g SAR	6.74	6.52	-3.26	5.00

Date: 03/04/2013 Validation Dipole and Serial Number: D900V2; SN: 035

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
	Head 900 24.			ε _r	41.50	41.11	-0.94	5.00
Head		24.0 ⁰C	20.6 ⁰C	σ	0.97	0.97	-0.31	5.00
Tieau		24.0 0	20.0 0	1g SAR	10.50	10.16	-3.24	5.00
			10g SAR	6.74	6.56	-2.67	5.00	

6.80

-2.30

5.00

System Check 900 Body Date: 05/04/2013 Validation Dipole and Serial Number: D900V2; SN: 035								
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
			23.5 ⁰C	ε _r	55.00	52.37	-4.78	5.00
Body	900	900 24.0 °C		σ	1.05	1.08	2.48	5.00
Dody	300 24.0 0	0 20.0 0	1g SAR	10.80	10.44	-3.33	5.00	
				10g SAR	6.96	6.72	-3.45	5.00
	Date: 08/04/2013 Validation Dipole and Serial Number: D900V2; SN: 035							
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
	Body 900 24.0 °C			ε _r	55.00	52.39	-4.75	5.00
Body		24.0 °C	23.9 ℃	σ	1.05	1.04	-0.86	5.00
Douy		0 23.9 0	1g SAR	10.80	10.56	-2.22	5.00	

10g SAR

System Check 1900 Head Date: 28/03/2013 Validation Dipole and Serial Number: D1900V2; SN: 537								
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
				٤r	40.00	39.00	-2.50	5.00
Head	1900	24.0 ℃	23.0 ⁰C	σ	1.40	1.44	3.14	5.00
rieau	Tieau 1900	24.0 C	23.0 °C	1g SAR	39.40	40.80	3.55	5.00
				10g SAR	20.70	21.00	1.45	5.00

System Check 1900 Body Date: 09/04/2013 Validation Dipole and Serial Number: D1900V2; SN: 537								
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
	Body 1900 24		23.2 ºC	ε _r	53.30	51.05	-4.22	5.00
Body		24.0 ⁰C		σ	1.52	1.55	2.15	5.00
Douy		24.0 0		1g SAR	40.50	41.20	1.73	5.00
				10g SAR	21.40	21.48	0.37	5.00
Date: 10/0 Validation		d Serial N	umber: D)1900V2; SN:	537			
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
				٤ _r	53.30	51.05	-4.22	5.00
Body 1900	1900	1900 24.0 °C	23.2 ⁰C	σ	1.52	1.55	2.15	5.00
	1000			1g SAR	40.50	42.00	3.70	5.00
				U				

System Check 2450 Head Date: 10/04/2013 Validation Dipole and Serial Number: D2440V2; SN: 701								
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
				ε _r	39.20	38.27	-2.37	5.00
Head	2450 24.0 °C	23.9 ℃	σ	1.80	1.77	-1.85	5.00	
Tieau		24.0 0	20.9 0	1g SAR	52.30	53.20	1.72	5.00
				10g SAR	24.20	24.60	1.65	5.00
Date: 11/ Validation		l Serial N	umber: D)2440V2; SN:	701			
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
				ε _r	39.20	38.27	-2.37	5.00
Head	Head 2450 24.0 °C	24.0.00	23.9 ⁰C	σ	1.80	1.77	-1.85	5.00
rieau		24.0 50			50.00	E 4 40	4.00	F 00

1g SAR

10g SAR

52.30

24.20

54.40

24.80

4.02

2.48

5.00

System Check 2450 Body Date: 11/04/2013 Validation Dipole and Serial Number: D2440V2; SN: 701								
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
			24.0 ºC 23.1 ºC	ε _r	52.70	51.15	-2.94	5.00
Body	2450	24 0 °C		σ	1.95	1.99	2.26	5.00
bouy	2430 24.0 C	24.0 0		1g SAR	52.00	54.00	3.85	5.00
				10g SAR	24.10	24.12	0.08	5.00
Date: 12/04/2013 Validation Dipole and Serial Number: D2440V2; SN: 701								
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
	ody 2450 24.0 °C	23.1 ⁰C	ε _r	52.70	51.15	-2.94	5.00	
Body			σ	1.95	1.99	2.26	5.00	
Bouy		24.0 0	23.1°C		50.00	F0.00	0.00	F 00

1g SAR

10g SAR

52.00

24.10

53.60

24.52

Page: 231 of 244

5.00

5.00

3.08

System Check 5200/5500/5800 Head Date: 15/04/2013 Validation Dipole and Serial Number: D5GHzV2; SN: 1016								
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
				ε _r	36.00	35.39	-1.69	10.00
Head	5200	24.0 ⁰C	21.9 ℃	σ	4.66	4.59	-1.55	5.00
Tiedd	5200	24.0 0	21.5 0	1g SAR	78.10	80.30	2.82	5.00
			10g SAR	22.30	22.80	2.24	5.00	
Date: 15/04/2013 Validation Dipole and Serial Number: D5GHzV2; SN: 1016								
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
		24.0.00	24.0 °C 21.9 °C	٤ _r	36.00	35.39	-1.69	10.00
Head	5200			σ	4.66	4.59	-1.55	5.00
Tieau	5200	24.0 °C		1g SAR	78.10	77.60	-0.64	5.00
				10g SAR	22.30	22.30	0.00	5.00
Date: 16/0 Validation		l Serial N	umber: [)5GHzV2; SN	l: 1016			
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
				٤ _r	35.60	34.93	-1.88	10.00
Head	5500	24.0 ⁰C	21.9 ⁰C	σ	4.96	4.86	-2.05	5.00
Tieau	5500	24.0 °C	21.9 0	1g SAR	82.50	83.50	1.21	5.00
				10g SAR	23.50	23.30	-0.85	5.00
Date: 16/0 Validation		l Serial N	umber: [)5GHzV2; SN	l: 1016			
Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
				ε _r	35.30	34.55	-2.12	10.00

σ

1g SAR

10g SAR

21.9 ⁰C

24.0 °C

5800

Head

5.27

77.00

21.90

5.17

77.30

21.90

-1.87

0.39

0.00

5.00

5.00

Appendix 6. Simulated Tissues

The body mixture consists of water, Polysorbate (Tween 20) and salt. Visual inspection is made to ensure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the tissue.

Ingredient	Frequency
(% by weight)	750/835/850/900 MHz Head
De-Ionized Water	52.87
Polysorbate 20	46.10
Salt	1.03

Ingredient	Frequency
(% by weight)	750/835/850/900 MHz Body
De-Ionized Water	71.30
Polysorbate 20	28.00
Salt	0.70

Ingredient	Frequency
(% by weight)	1800/1900 MHz Head
De-Ionized Water	55.40
Polysorbate 20	44.22
Salt	0.38

Ingredient	Frequency
(% by weight)	1800/1900 MHz Body
De-Ionized Water	71.50
Polysorbate 20	28.00
Salt	0.50

Ingredient (% by weight)	Frequency
	2450 MHz Head
De-Ionized Water	55.75 ¹
Polysorbate 20	45.25 ¹

Ingredient (% by weight)	Frequency
	2450 MHz Body
De-Ionized Water	71.70
Polysorbate 20	28.00
Salt	0.30

Page: 233 of 244

Simulated Tissues (Continued)

Stimulating Liquid for 3700 MHz to 5800 MHz are supplied and manufactured by SPEAG

Ingredient	Frequency	
(% by weight)	3700 - 5800 MHz Head / Body	
De-Ionized Water	~78.00	
Mineral Oil	~11.00	
Emulsifiers	~9.00	
Additives and Salt	~2.00	

Note(s):

1. As per the recipe provided by National Physical Laboratory, the 2450 MHz Head Fluid recipe is mixed to the total percentage of weight is by 101.0 %.

Appendix 7. DASY4 System Details

A.7.1. DASY4 SAR Measurement System

UL, SAR measurement facility utilises the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG[™]) of Zurich, Switzerland. The DASY4 system is comprised of the robot controller, computer, near-field probe, probe alignment sensor, and the SAM phantom containing brain or muscle equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller; teach pendant (Joystick), and remote control. This is used to drive the robot motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. The data acquisition electronics (DAE) performs signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection etc. The DAE is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card. The DAE3 utilises a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching mulitplexer, a fast 16bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

Issue Date: 01 May 2013

A.7.2. DASY4 SAR System Specifications			
Robot System			
Positioner:	Stäubli Unimation Corp. Robot Model: RX90L		
Repeatability:	0.025 mm		
No. of Axis:	6		
Serial Number:	F00/SD89A1/A/01		
Reach:	1185 mm		
Payload:	3.5 kg		
Control Unit:	CS7		
Programming Language:	V+		
Data Acquisition Electronic (DAE) System			
Serial Number:	DAE3 SN:431		
PC Controller			
PC:	Dell Precision 340		
Operating System:	Windows 2000		
Data Card:	DASY4 Measurement Server		
Serial Number:	1080		
Data Converter			
Features:	Signal Amplifier, multiplexer, A/D converted and control logic.		
Software:	DASY4 Software		
Connecting Lines:	Optical downlink for data and status info. Optical uplink for commands and clock.		
PC Interface Card			
Function:	24 bit (64 MHz) DSP for real time processing Link to DAE3 16 nit A/D converter for surface detection system serial link to robot direct emergency stop output for robot.		

DASY4 SAR System Specifications (Continued)		
E-Field Probe		
Model:	EX3DV4	
Serial No:	3871	
Construction:	Triangular core	
Frequency:	10 MHz to >6 GHz	
Linearity:	±0.2 dB (30 MHz to 6 GHz)	
Probe Length (mm):	337	
Probe Diameter (mm):	10	
Tip Length (mm):	9	
Tip Diameter (mm):	2.5	
Sensor X Offset (mm):	1	
Sensor Y Offset (mm):	1	
Sensor Z Offset (mm):	1	
Phantom		
Phantom:	SAM Phantom	
Shell Material:	Fibreglass	
Thickness:	2.0 ±0.1 mm	

Appendix 8. 3G Test set-up

3G (12.K RMC / HSDPA / HSUPA) setup

To switch from 2G to 3G, on the system config screen choose Format Switch and select WCDMA. The Call Setup Screen as shown in figure 1 pops up.

Call Setup Screen			
Call Control	Active Cell Operating Mode	Call Parms	
Operating Node	UE Information	Cell Pouer	
Active Cell	Insi:	-35.00	
	INST. ()	dBm/3.84 MHz	
	Pouer Class:	Channel Type	
		12.2k RHC	
	UE Expected Open Loop Transmit Pouer		
	Initial PRACH TX Pouer: -60.00 dBm	Paging Service	
Originate Call	Initial DPCCH TX Pouer: -11.55 dBm	RB Test flode	
Juli	Call Processing Status		
	Current Service Type: None		
Paging Parameters _	III Status: None	HSPA Parameters	
	GIIII State: None	Parameters	
	Current DPCH Offset: 0 chips		
Handovers	HSUPA Information HSDPA Information	34.121 Preset	
	Rep EDCH Cat/Ext: Unrep/Unrep Cur VE HS-DSCH Cat:	Call Configs _V	
	Last received E-TFCI: Block Error Ratio: %		
Clear	Throughput: kbps Throughput: kbps Acks Transmitted: Blocks Transmitted: Transmitted: Blocks Transmitted:	Channel	
UE Info	Acks Transmitted: Blocks Transmitted:	(UARFCN) Parms	
	Active Cell Sys Type: UTRA FDD		
	Idle		
1 of 5	IntRef	1 of 3	

Figure 1: 3G Call Setup Screen

For a 12.2k RMC call follow the steps below.

8.1. Steps for 12.2k RMC

- 1. Ensure that the Operating Mode of the cell is off before setting up the instrument.
- On the Call Setup Screen, under Call Parameters, press the button against Cell Power. The Cell Power value is set to about -35dBm to account for all the losses and ensure sufficient signal strength to the EUT.
- 3. The Channel Type is selected to 12.2k RMC. Press button against Channel (VARFCN) Parms select the correct Downlink Channel for the required UMTS FDD Band.
- 4. On the Call Setup Screen, under Call Parameters, press the button against HSPA Parameters. Under HSDPA Parameters on page 1, press HSDPA Uplink parameters and set the Delta ACK, Delta NACK, Delta CQI values to 8. Under HSDPA Parms itself, press HSDPA RB Test Mode Setup button and then the HSDPA RB Test Mode Settings and change HS-DSCH Data Pattern to All Ones.

Test Report Version 2.0

Issue Date: 01 May 2013

Call Setup Screen			
Call Control	Active Cell Operating Mo	HSDPA Parms	
	INSI: INEI(SV):	()	
	Pouer Class:		HSDPA RB Test Node Setup
	UE Expected Open Loop Transmit	Pouer	
	Initial PRACH TX Pouer: -60.00 dBm Initial DPCCH TX Pouer: -11.55 dBm		UE Category Parameters _V
	HSDPA Uplink Parameters	Value	
	DeltaACK	8	llAC-(e)hs
	DeltaNACK	8	Parameters _V
	DeltaCQI	8	
	Ack-Nack Repetition Factor	1	HSDPA Uplink
	CQI Feedback Cycle (k)	2 ms	Parameters _V
	CQI Repetition Factor	1	
Close Nenu			Return
		Sys Type: UTRA FDD	
			1 of 2
	IntRef		1012

Figure 2: HSDPA Parameters

5. On the Call Setup Screen, under Call Parameters, on page 2, check if the DL DTCH Data is set to All Ones. On page 3, ensure that the Receiver is set to Manual. On page 3 itself, under UL CL Power Ctrl Parameters, UL CL Power Ctrl Mode is set to All Up Bits.

	Call Setup Screen	
Call Control	Active Cell Operating Mode	Call Parms
Operating Node	UE Information	DL DTCH Data
Active Cell	INSI:	All Ones
	INEI(SU): () Pouer Class:	
	Power class:	
	UE Expected Open Loop Transmit Pouer	
	Initial PRACH TX Pouer: -60.00 dBm	RLC Reestablish
Originate Call	Initial DPCCH TX Pouer: -11.55 dBm	Auto
	Call Processing Status	
	Current Service Type: None	Call Limit State
Paging Parameters	111 Status: None	Off
Parameters _V	Gilli State: None	
	Current DPCH Offset: 0 chips	Call Drop Timer
Handovers	HSUPA Information HSDPA Information	On
	Rep EDCH Cat/Ext: Unrep/Unrep Cur VE HS-DSCH Cat:	
	Last received E-TFCI: Block Error Ratio: Z	
Clear	Throughput: kbps Throughput: kbps	SRB
Clear UE Info	Acks Transmitted: Blocks Transmitted:	Parameters _▽
	Active Cell Sys Type: UTRA FDD]
	Idle	
1 of 5	IntRef	2 of 3

Figure 3: DL DTCH Data Parms

	Call Setup Screen		
Call Control	Active Cell Operating Mo	Call Parms	
	UE Information	UE Target Pouer	
	INSI:		-5 dBm
	INEI(SV):	()	
	Pouer Class:		UL CL Pouer
			Ctrl Parameters _v
	UE Expected Open Loop Transmit I	Pouer	Ť
	Initial PRACH TX Pouer: -60.00 dBm		
	Initial DPCCH TX Pouer: -11.55 dBm		
	UL CL Power Ctrl Parameters	Value	
	UL CL Pouer Ctrl Node	All Up bits	Send Step Up
	UL CL Pouer Ctrl Algorithm	Тио	TPC Bit Pattern
	UL CL Pouer Ctr1 Stepsize	1 dB	
			Send Step Doun TPC Bit Pattern
			TPC DIC Patterii
Close Nenu			Receiver Control ⊽
	Active Cell S	Sys Type: UTRA FDD]
	Idle		
	IntRef		3 of 3



6. On the Call Setup Screen, under Call Control, page 2, Cell Parameters, it is ensured that PS Domain information is kept as Absent for RMC.

Call Setup Screen				
Call Control	Active Cell Operating Mode		Call Parms	
	UE Information			Cell Pouer
Additional Screens	Insi:			-35.00
	INGL:		()	dBm/3.84 MHz
0.11	Pouer Class:			Channel Type
Cell Parameters _v				12.2k RHC
v	UE	Expected Open Loop Transmit	Pouer	
	Initial PRACH T			Paging Service
Generator Info	Initial DPCCH T	Х Pouer: -11.55 dBm		RB Test flode
	Cel	l Parameters	Value	
Uplink	BCCH Update Page		Inhibit	HSPA
	Parameters V PS Domain Information		Absent	Parameters
	NCC (Nobile Count	ry Code)	1	
UE Rep	MNC (Nobile Netuo	rk Code)	1	34.121 Preset
lleas	MNC (Nobile Netuo	rk Code) Length	Auto	Call Configs _V
	LAC (Local Area C	ode)	1	
Close	RAC (Routing Area	Code)	1	Channel
llenu	Cell Identity		1	(UARFCN) Parms
			Sys Type: UTRA FDD]
		Idle]
2 of 5		IntRef		1 of 3

Figure 5: Cell Parameters

 On the same page under Uplink Parameters the maximum Uplink Transmit Power is made 24dBm. Uplink DPCH Bc/Bd Control Settings are kept at Auto for RMC. These vary according for HSDPA and HSUPA as per the values given in KDB 941225 D01 SAR test for 3G devices v02.

Issue Date: 01 May 2013

1 of 3

Cal

2 of 5

Call Setup Screen			
all Control	Active Cell Operating Mo	Call Parms	
	UE Information		Cell Pouer
Additional Screens	Insi:		-35.00
	INST: INEI(SU):	()	dBm/3.84 MHz
	Pouer Class:	~ <i>y</i>	Channel Type
Cell Parameters _			12.2k RHC
	UE Expected Open Loop Transmit	Pouer	
	Initial PRACH TX Pouer: -60.00 dBm		Paging Service
Generator Info	Initial DPCCH TX Pouer: -11.55 dBm		RB Test flode
Into	Uplink Parameters	Value	-
Uplink Parameters _	PRACH Preambles	64 1	HSPA Parameters
	PRACH Ramping Cycles(1111AX)	2	Parameters
	Available Subchannels (Bit Nask)	00000000001	
UE Rep	Uplink DPCH Scrambling Code	0	34.121 Preset
lleas	Uplink DPCH Bc/Bd Control	Auto	Call Configs _V
	Manual Uplink DPCH Bc	8	
Close	Manual Uplink DPCH Bd	15	Channel
lienu	Naximum Uplink Transmit Pouer Level	24 dBm	(UARFCN) Parms
	Active Cell	Sys Type: UTRA FDD	

Figure 6: Uplink Parameters

Idle

IntRef

8. On page 3 under Call Control, for the RB Test Mode setup, Asymmetric RMC CN Domain is ensured to be in CS Domain for RMC call.

Call Setup Screen			
Call Control	Active Cell Operating Mode		Call Parms
	UE Information	Cell Pouer	
	Insi:		-35.00
	Inst. IMEI(SU):	()	dBm/3.84 MHz
	Pouer Class:		Channel Type
			12.2k RHC
	UE Expected Open Loop Transmit	Pouer	
	Initial PRACH TX Pouer: -60.00 dBm		Paging Service
	Initial DPCCH TX Pouer: -11.55 dBm		RB Test flode
	RB Test Mode Settings	Value	
	Uplink DTCH RHC CRC Presence	Present	HSPA
	Uplink Dummy DCCH Data	Off	Parameters
	UE Loopback Type	Type 1	
Voice	Asymmetric RNC Loopback Nessaging	Close/Open	34.121 Preset
Call	Asymmetric RNC CN Domain	CS Domain	Call Configs _V
Close Nenu			Channel (UARFCN) Parms
	Active Cell	Sys Type: UTRA FDD	Ī
]
3 of 5	IntRef		1 of 3

Figure 7: RB Test Mode Settings

9. After the test set has been set up, change the cell Operating Mode to Active Cell and originate a call.

8.2. Steps for 12.2k RMC + HSDPA/HSUPA

- Most of the steps to be followed are as in the case of 12.2k RMC however, some of the settings need to be changed. The Channel Type is changed to 12.2k RMC+HSDPA or 12.2k RMC+HSUPA as required.
- 2. For HSDPA and HSUPA, the settings remain same as the case for RMC but the PS Domain is made Present for Cell Parameters (Figure 5) and RB Test Mode Setup (Figure 7).
- 3. The following tables taken from FCC 3G SAR procedures (KDB 941225 D01 SAR test for 3G devices v02) below were applied to the Agilent 8960 series 10 wireless communications test set which supports 3G / HSDPA release 5 / HSUPA release 6.

Sub-test T Setup for Release 3 HSDF A								
Sub-test	βc	β _d	B _d (SF)	$\beta_{c/} \beta_{d}$	${\beta_{hs}}^{(1)}$	SM (dB) ⁽²⁾		
1	2/15	15/15	64	2/15	4/15	0.0		
2	12/15 ⁽³⁾	15/15 ⁽³⁾	64	12/15 ⁽³⁾	24/15	1.0		
3	15/15	8/15	64	15/8	30/15	1.5		
4	15/15	4/15	64	15/4	30/15	1.5		

Sub-test 1 Setup for Release 5 HSDPA

Note 1: $\Delta_{ACK, \Delta_{NACK}}$ and $\Delta_{CQI} = 8 \iff A_{hs} = \beta_{hs}/\beta_c = 30/15 \iff \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_{c/} \beta_d$ = 12/15, B_{hs}/β_c = 24/15

Note 3: For subtest 2 the $\beta_{c'}$ β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

Sub-test 5 Setup for Release 6 HSUPA

Sub- test	βc	βd	B _d <i>(SF)</i>	βc/βd	$\beta_{hs}^{(1)}$	B _{oc}	B _{od}	B₀d <i>(SF)</i>	B _{od} (codes)	CM ⁽²⁾ (dB)	MPR (dB)	AG ⁽⁴⁾ Index	E- TFCI
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽³⁾	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	31/15	B _{al1} : 47/15 B _{al2} : 47/15	4	1	2.0	1.0	15	92
4	2/15	15/15	64	2/15	2/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	15/15 ⁽⁴⁾	24/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \iff A_{hs} = \beta_{hs}/\beta_c = 30/15 \iff \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_{c'} \beta_d$ = 12/15, B_{hs}/β_c = 24/15. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH AND E-DPCCH for the MPR is based on the relative CM difference.

Note 3: For subtest 1 the $\beta_{c'}\beta_d$ ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the $\beta_{c'}\beta_d$ ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g. Note 6: B_{od} cannot be set directly; it is set by Absolute Grant Value.

Serial No: UL-SAR-RP92315JD03A V2.0

Issue Date: 01 May 2013

Test Report Version 2.0

Call Setup Screen Call Control Active Cell Operating Mode Serving Grant Operating Hode AG Node **UE Information** Active Cell Single Shot INSI: (---) INEI(SV): Single Shot AG Pouer Class: 21: (134/15)^2 UE Expected Open Loop Transmit Pouer Initial PRACH TX Pouer: -60.00 dBm Originate Call Send Single Shot Absolute Grant Initial DPCCH TX Pouer: -11.55 dBm **Call Processing Status** RB Setup AG Current Service Tune None Paging Parameters Abs Single Shot AG 33: 4(134/15)*2 MI Status: Index 18: (95/15)^2 GNN State: t Current DPCH Index 19: (106/15)^2 AG Pattern Parameters) Information Handovers HSUPA In Index 20: (119/15)^2 Rep EDCH Cat/HIndex 21: (134/15)^2 DSCH Cat: Last received Ratio: - Z Index 22: (150/15)^2 Throughput: - kbps Acks Transmitt Index 23: (168/15)^2 Clear UE Info Return Insmitted: Active Cell Sys Type: UTRA FDD Idle 1 of 5 1 of 2 IntRef

Call Setup Screen							
Call Control	Active Cell Operating Mo	Call Parms					
Additional	UE Information	Cell Pouer					
Screens	Insi:		-35.00				
	INEI(SV):	()	dBm/3.84 MHz				
Cell	Pouer Class:		Channel Type				
Parameters _V		12.2k + HSDPA					
	UE Expected Open Loop Transmit	Pouer					
Generator	Initial PRACH TX Pouer: -60.00 dBm		Paging Service				
Info	Initial DPCCH TX Pouer: -22.58 dBm		RB Test flode				
	Uplink Parameters	Value					
Uplink	PRACH Preambles	64	HSPA				
Parameters _V	PRACH Ramping Cycles(111AX)	2	Parameters				
	Available Subchannels (Bit Nask)	00000000001					
UE Rep	Uplink DPCH Scrambling Code	0	34.121 Preset				
lleas	Up1ink DPCH Bc/Bd Control	Manual	Call Configs 🗸				
	Manual Uplink DPCH Bc	2					
Close	Manual Uplink DPCH Bd	15	Channel				
llenu	Naximum Uplink Transmit Pouer Level	24 dBm	(UARFCN) Parms				
	Cell Off	Sys Type: UTRA FDD]				
2 of 5	IntRef		1 of 3				

4. For HSUPA the Serving Grant Parameter needs to be set. On the Call Setup Screen, under Call Parameters, press the button against HSPA Parameters. On the new screen that pops up, press HSUPA and Serving Grant. The Serving Grant is set according to the table for HSPA in the KDB (AG Index). The correct AG is chosen from the Single Shot AG. Consecutively, the RG Setup AG is set as per the ratio set on Single Shot AG.

Call Setup Screen							
Call Control	Active Cell Operating Mode	Serving Grant					
Operating flode	UE Information	AG Node					
Active Cell	Inst:	Single Shot					
	INST: INEI(SU): ()						
	Pouer Class:	Single Shot AG					
	F0461 01033.	31: 6(168/15)^2					
	UE Expected Open Loop Transmit Pouer						
	Initial PRACH TX Poyer: -60.00 dBm						
Originate Call	Initial DPCCH TX Pouer: -11.55 dBm	Send Single Shot Absolute Grant					
	Call Processing Status						
D	Current Service Type: None	RB Setup AG					
Paging Parameters _V	IIII Status: None	37: 6(168/15)^2					
V	GNN State: None						
	Current DPCH Offset: 0 chips						
Handovers	HSUPA Information HSDPA Information	AG Pattern Parameters					
	Rep EDCH Cat/Ext: Unrep/Unrep Cur UE HS-DSCH Cat:						
	Last received E-TFCI: Block Error Ratio: Z						
Clear	Throughput: kbps Throughput: kbps Acks Transmitted: Blocks Transmitted:	Return					
UE Info	Acks Transmitted: Blocks Transmitted:						
	Active Cell Sys Type: UTRA FDD]					
	Idle						
1 of 5	IntRef	1 of 2					

Figure 8: Serving Grant Example