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 ±5% for the 900 MHz, 1900 MHz, 2450 MHz and 5.0 GHz dipoles.

The applicable verification normalised to 1 Watt.

System Check 900 Head
Date: 16/07/2013
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	22.8 ºC	ε_r	41.50	39.91	-3.83	5.00
				σ	0.97	0.96	-1.39	5.00
				1g SAR	10.50	10.48	-0.19	5.00
				10g SAR	6.74	6.80	0.89	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
128	Low	824.2	ε_r	40.40
			σ	0.90
190	Middle	836.6	ε_r	40.30
			σ	0.91
251	High	848.8	ε_r	40.20
			σ	0.92
Channel Number	**Channel Description**	**Frequency (MHz)**	**Parameters**	
4132	Low	826.4	ε_r	40.40
			σ	0.91
4183	Middle	836.6	ε_r	40.30
			σ	0.91
4233	High	846.6	ε_r	40.30
			σ	0.92

System Check 900 Body
Date: 16/07/2013
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 ºC	22.9 ºC	ε_r	55.00	53.29	-3.11	5.00
				σ	1.05	1.04	-1.43	5.00
				1g SAR	10.80	10.80	0.00	5.00
				10g SAR	6.96	7.08	1.72	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
4132	Low	826.4	ε_r	53.50
			σ	1.00
4183	Middle	836.6	ε_r	53.50
			σ	1.00
4233	High	846.6	ε_r	53.50
			σ	1.01

Date: 17/07/2013
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 ºC	22.9 ºC	ε_r	55.00	53.29	-3.11	5.00
				σ	1.05	1.04	-1.43	5.00
				1g SAR	10.80	10.72	-0.74	5.00
				10g SAR	6.96	6.96	0.00	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
4132	Low	826.4	ε_r	53.50
			σ	1.00
4183	Middle	836.6	ε_r	53.50
			σ	1.00
4233	High	846.6	ε_r	53.50
			σ	1.01

System Check 900 Body (Continued):
Date: 19/07/2013
Validation Dipole and Serial Number: D900V2; SN: 035

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	900	24.0ºC	22.5ºC	ε_r	55.00	54.42	-1.05	5.00
				σ	1.05	1.07	2.19	5.00
				1g SAR	10.80	10.56	-2.22	5.00
				10g SAR	6.96	6.92	-0.57	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
128	Low	824.2	ε_r	53.10
			σ	1.00
190	Middle	836.6	ε_r	53.10
			σ	1.01
251	High	848.8	ε_r	53.00
			σ	1.02

Date: 20/07/2013
Validation Dipole and Serial Number: D900V2; SN: 035

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	900	24.0ºC	22.5ºC	ε_r	55.00	52.90	-3.82	5.00
				σ	1.05	1.06	0.48	5.00
				1g SAR	10.80	10.88	0.74	5.00
				10g SAR	6.96	7.12	2.30	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
128	Low	824.2	ε_r	53.30
			σ	1.00
190	Middle	836.6	ε_r	53.20
			σ	1.01
251	High	848.8	ε_r	53.20
			σ	1.02

System Check 1900 Head
Date: 15/07/2013
Validation Dipole and Serial Number: D1900V2; SN: 537

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Head	1900	24.0 ºC	24.0 ºC	ε_r	40.00	39.10	-2.25	5.00
				σ	1.40	1.45	3.29	5.00
				1g SAR	39.40	38.88	-1.32	5.00
				10g SAR	20.70	20.28	-2.03	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
512	Low	1850.2	ε_r	39.30
			σ	1.40
661	Middle	1880	ε_r	39.20
			σ	1.43
810	High	1909.8	ε_r	39.10
			σ	1.46

System Check 1900 Body
Date: 15/07/2013
Validation Dipole and Serial Number: D1900V2; SN: 537

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	1900	24.0 ºC	23.3 ºC	ε_r	53.30	50.82	-4.65	5.00
				σ	1.52	1.50	-1.39	5.00
				1g SAR	40.50	40.40	-0.25	5.00
				10g SAR	21.40	21.16	-1.12	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
512	Low	1850.2	ε_r	50.80
			σ	1.45
661	Middle	1880	ε_r	50.80
			σ	1.48
810	High	1909.8	ε_r	50.80
			σ	1.51

System Check 2450 Head
Date: 24/07/2013
Validation Dipole and Serial Number: D2440V2; SN: 701

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Head	2450	24.0 ºC	23.0 ºC	ε_r	39.20	39.93	1.86	5.00
				σ	1.80	1.85	2.69	5.00
				1g SAR	52.30	52.40	0.19	5.00
				10g SAR	24.20	24.20	0.00	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1	Low	2412	ε_r	40.05
			σ	1.81
6	Middle	2437	ε_r	39.97
			σ	1.84
11	High	2462	ε_r	39.88
			σ	1.87

System Check 2450 Body
Date: 18/07/2013
Validation Dipole and Serial Number: D2440V2; SN: 701

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	2450	24.0 ºC	24.0 ºC	ε_r	52.70	51.29	-2.68	5.00
				σ	1.95	2.02	3.72	5.00
				1g SAR	52.00	52.80	1.54	5.00
				10g SAR	24.10	24.00	-0.41	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1	Low	2412	ε_r	51.42
			σ	1.98
6	Middle	2437	ε_r	51.33
			σ	2.01
11	High	2462	ε_r	51.215
			σ	2.04

Date: 19/07/2013
Validation Dipole and Serial Number: D2440V2; SN: 701

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	2450	24.0 ºC	24.0 ºC	ε_r	52.70	51.29	-2.68	5.00
				σ	1.95	2.02	3.72	5.00
				1g SAR	52.00	53.20	2.31	5.00
				10g SAR	24.10	24.40	1.24	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1	Low	2412	ε_r	51.42
			σ	1.98
6	Middle	2437	ε_r	51.33
			σ	2.01
11	High	2462	ε_r	51.215
			σ	2.04

System Check 5200Head
Date: 15/07/2013
Validation Dipole and Serial Number: D5GHzV2; SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Head	5200	24.0 ºC	23.5 ºC	ε_r	36.00	36.07	0.19	5.00
				σ	4.66	4.73	1.48	5.00
				1g SAR	78.10	78.00	-0.13	5.00
				10g SAR	23.00	22.60	1.35	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
48	Middle	5240	ε_r	35.94
			σ	4.78

Date: 16/07/2013
Validation Dipole and Serial Number: D5GHzV2; SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Head	5200	24.0 ºC	23.5 ºC	ε_r	36.00	36.07	0.19	5.00
				σ	4.66	4.73	1.48	5.00
				1g SAR	78.10	80.20	2.69	5.00
				10g SAR	23.00	22.00	-1.35	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
42	Middle	5210	ε_r	36.04
			σ	4.75
46	Middle	5230	ε_r	35.97
			σ	4.77
48	Middle	5240	ε_r	35.94
			σ	4.78
52	Middle	5260	ε_r	35.88
			σ	4.80
54	Middle	5270	ε_r	35.85
			σ	4.80
58	Middle	5290	ε_r	35.79
			σ	4.82

System Check 5500 Head
Date: 16/07/2013
Validation Dipole and Serial Number: D5GHzV2; SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Head	5500	24.0 ºC	23.5 ºC	ε_r	35.60	35.43	-0.48	5.00
				σ	4.96	5.01	7.60	5.00
				1g SAR	82.50	82.20	-0.36	5.00
				10g SAR	23.50	23.20	-1.28	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
106	Middle	5530	ε_r	35.38
			σ	5.04
134	Middle	5670	ε_r	35.21
			σ	5.17

System Check 5800Head
Date: 16/07/2013
Validation Dipole and Serial Number: D5GHzV2; SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Head	5800	24.0 ºC	23.5 ºC	ε_r	35.30	35.00	-0.85	5.00
				σ	5.27	5.31	0.76	5.00
				1g SAR	77.00	79.80	3.64	5.00
				10g SAR	21.90	22.40	2.28	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
159	Middle	5795	ε_r	35.01
			σ	5.31

System Check 5200 Body
Date: 17/07/2013
Validation Dipole and Serial Number: D5GHzV2; SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	5200	24.0 ºC	23.0 ºC	ε_r	49.00	48.84	-0.33	5.00
				σ	5.30	5.39	1.71	5.00
				1g SAR	75.10	78.00	3.86	5.00
				10g SAR	21.10	21.60	2.37	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
48	Middle	5240	ε_r	48.71
			σ	5.45
52	Middle	5260	ε_r	48.65
			σ	5.48

System Check 5500 Body
Date: 17/07/2013
Validation Dipole and Serial Number: D5GHzV2; SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	5500	24.0 ºC	23.0 ºC	ε_r	48.60	48.21	-0.80	5.00
				σ	5.65	5.77	2.16	5.00
				1g SAR	79.00	78.50	-0.63	5.00
				10g SAR	22.00	21.80	-0.91	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
116	Middle	5580	ε_r	48.12
			σ	5.87

System Check 5800 Body
Date: 17/07/2013
Validation Dipole and Serial Number: D5GHzV2; SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	5800	24.0 ºC	23.0 ºC	ε_r	48.20	47.81	-0.81	5.00
				σ	6.00	6.14	2.41	5.00
				1g SAR	74.40	73.10	-1.75	5.00
				10g SAR	20.60	20.20	-1.94	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
149	Middle	5745	ε_r	47.93
			σ	6.11

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 (% by weight)	**Frequency 750/835/850/900 MHz**	
	Head	**Body**
De-Ionized Water	52.87	71.30
Polysorbate 20	46.10	28.00
Salt	1.03	0.70

Ingredient (% by weight)	**Frequency 1800/1900 MHz**	
	Head	**Body**
De-Ionized Water	55.40	71.50
Polysorbate 20	44.22	28.00
Salt	0.38	0.50

Ingredient (% by weight)	**Frequency 2450/2600 MHz**	
	Head	**Body**
De-Ionized Water	55.75(1)	71.70
Polysorbate 20	45.25(1)	28.00
Salt	0.00	0.30

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

Ingredient (% by weight)	**Frequency**
	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 reciepe 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 16-bit 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.

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+
Robot System	
Positioner:	Stäubli Unimation Corp. Robot Model: RX90L
Repeatability:	0.025 mm
No. of Axis:	6
Serial Number:	F01/5J86A1/A/01
Reach:	1185 mm
Payload:	3.5 kg
Control Unit:	CS7
Programming Language:	V+
Robot System	
Positioner:	Stäubli Unimation Corp. Robot Model: TX60L
Repeatability:	±0.030 mm
No. of Axis:	6
Serial Number:	F12/5MZ7A1/A/01
Reach:	920 mm
Payload:	2.0 kg
Control Unit:	CS8C
Programming Language:	V+
Data Acquisition Electronic (DAE) System	
Serial Number:	DAE3 SN:417
Serial Number:	DAE3 SN:431
Serial Number:	DAE3 SN:450

DASY4 SAR System Specifications (Continued) PC Controller	
PC:	Dell Precision 340
Operating System:	Windows 2000
Data Card:	DASY 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.
E-Field Probe	
Model:	EX3DV4
Serial No:	3814
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
E-Field Probe	
Model:	ES3DV3
Serial No:	3304
Construction:	Triangular core
Frequency:	10 MHz to >4 GHz
Linearity:	±0.2 dB (30 MHz to 4 GHz)
Probe Length (mm):	337
Probe Diameter (mm):	10
Tip Length (mm):	10
Tip Diameter (mm):	4
Sensor X Offset (mm):	2
Sensor Y Offset (mm):	2
Sensor Z Offset (mm):	2

DASY4 SAR System Specifications (Continued)	
E-Field Probe	
Model:	ET3DV6
Serial No:	1528;1529
Construction:	Triangular core
Frequency:	10 MHz to 2.55GHz
Linearity:	±0.2 dB (30 MHz to 2.55GHz)
Probe Length (mm):	337
Probe Diameter (mm):	10
Tip Length (mm):	10
Tip Diameter (mm):	6.8
Sensor X Offset (mm):	2.7
Sensor Y Offset (mm):	2.7
Sensor Z Offset (mm):	2.7
Phantom	
Phantom:	SAM Phantom, Eli 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.

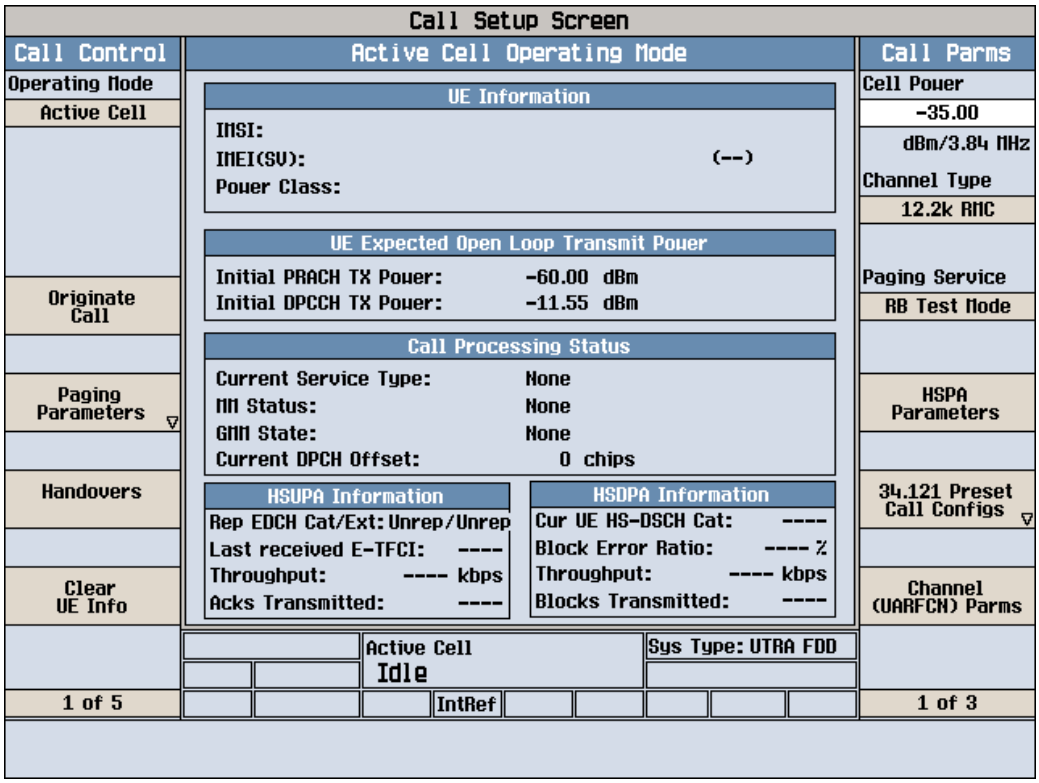


Figure 1: 3G Call Setup Screen

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.
2. 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.

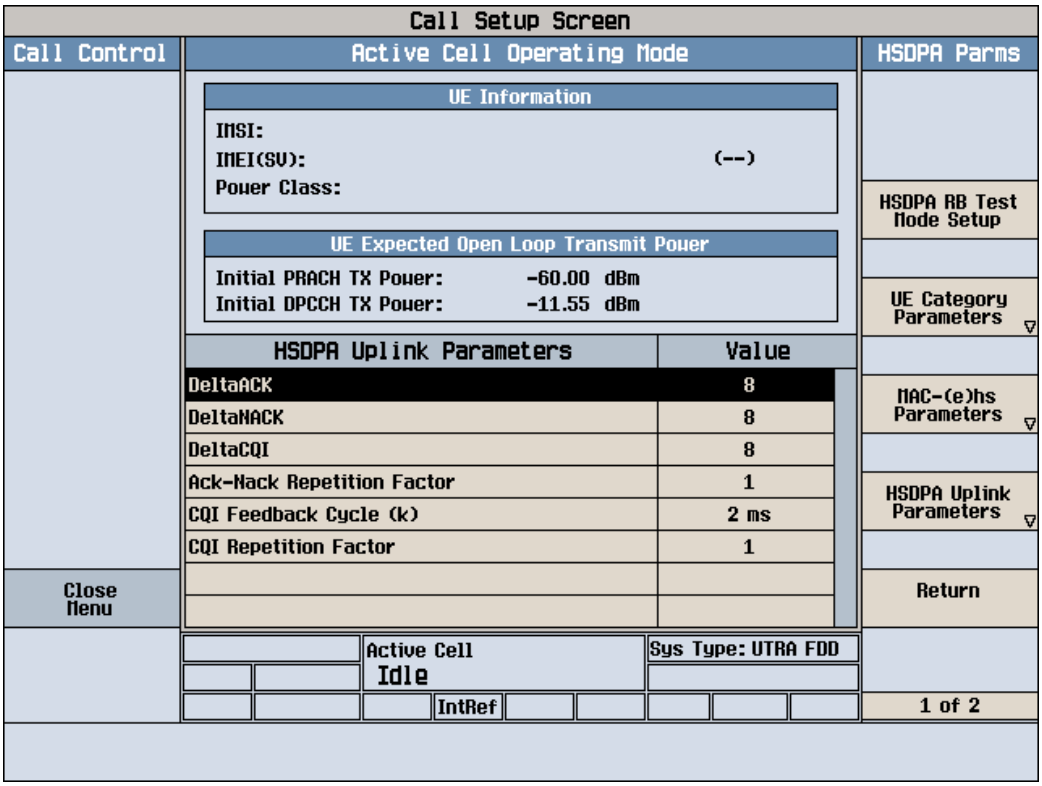


Figure 2: HSDPA Parameters

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.

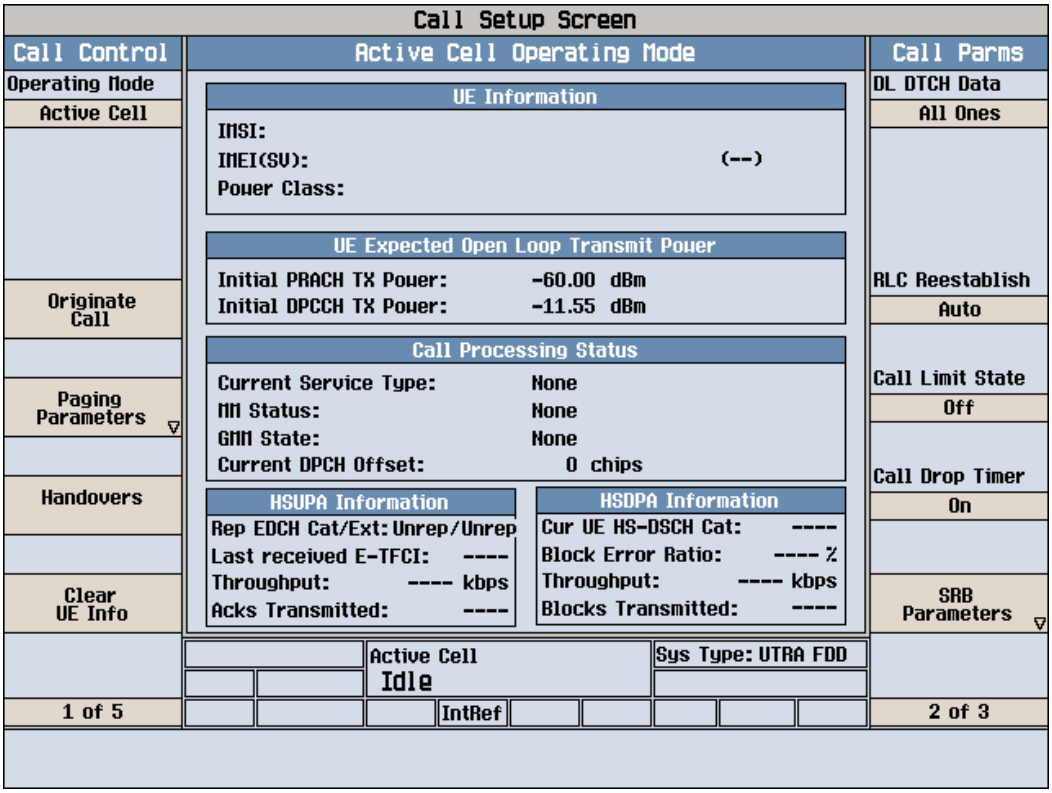


Figure 3: DL DTCH Data Parms

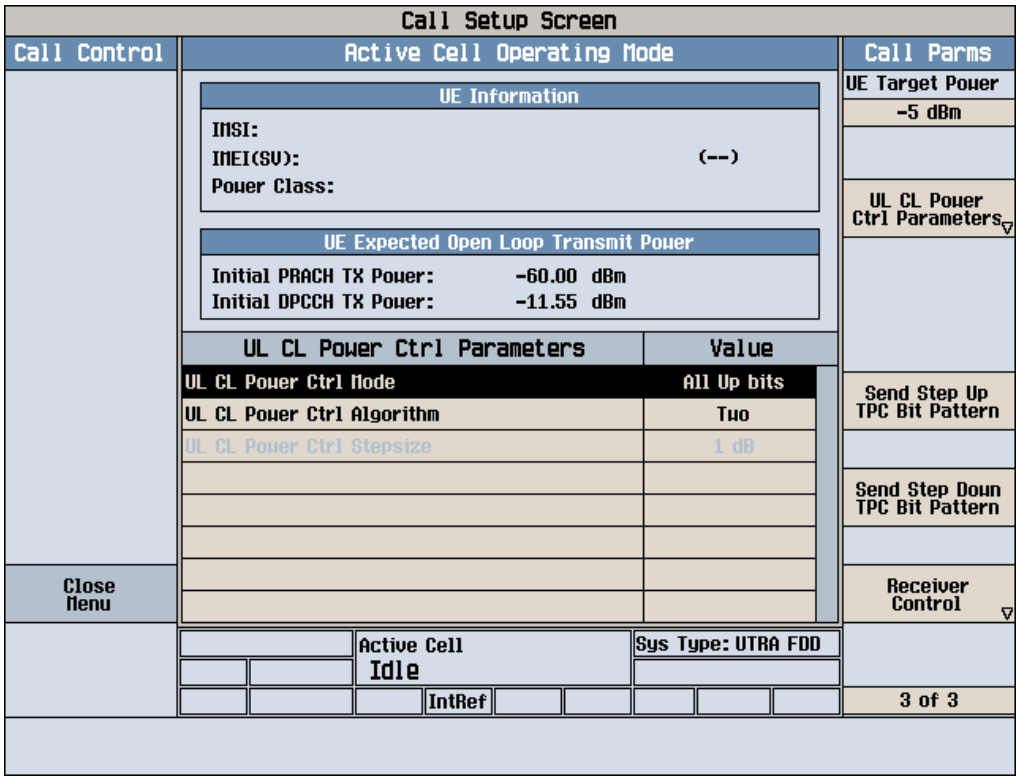


Figure 4: UL CL Power Ctrl Parameters

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.

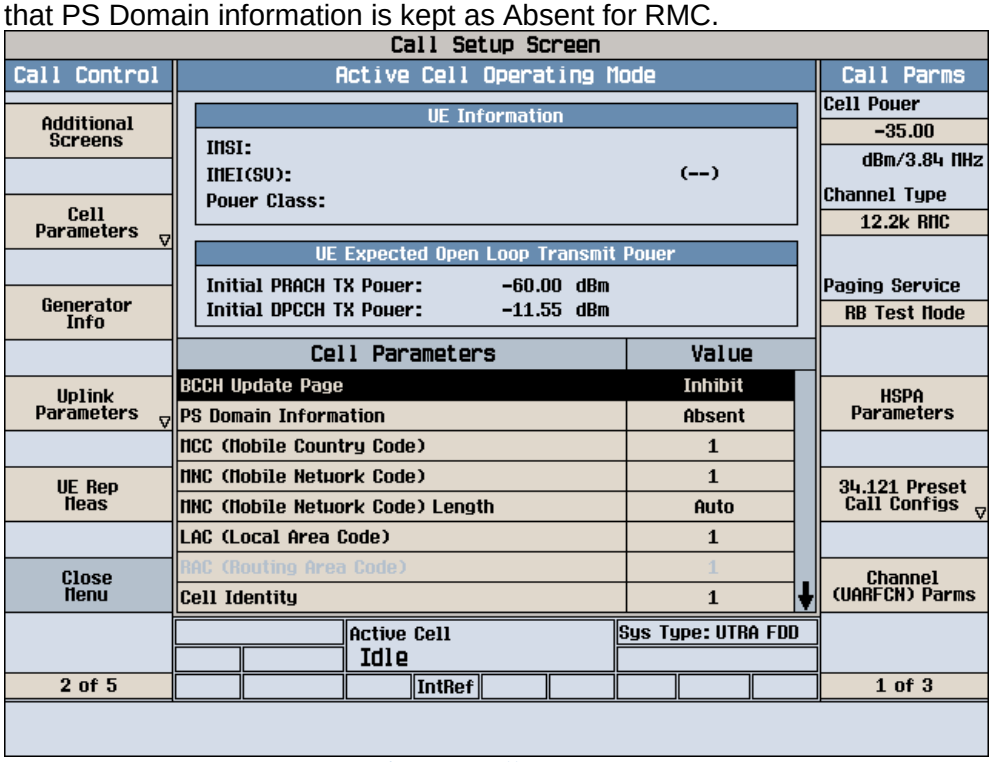


Figure 5: Cell Parameters

7. 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.

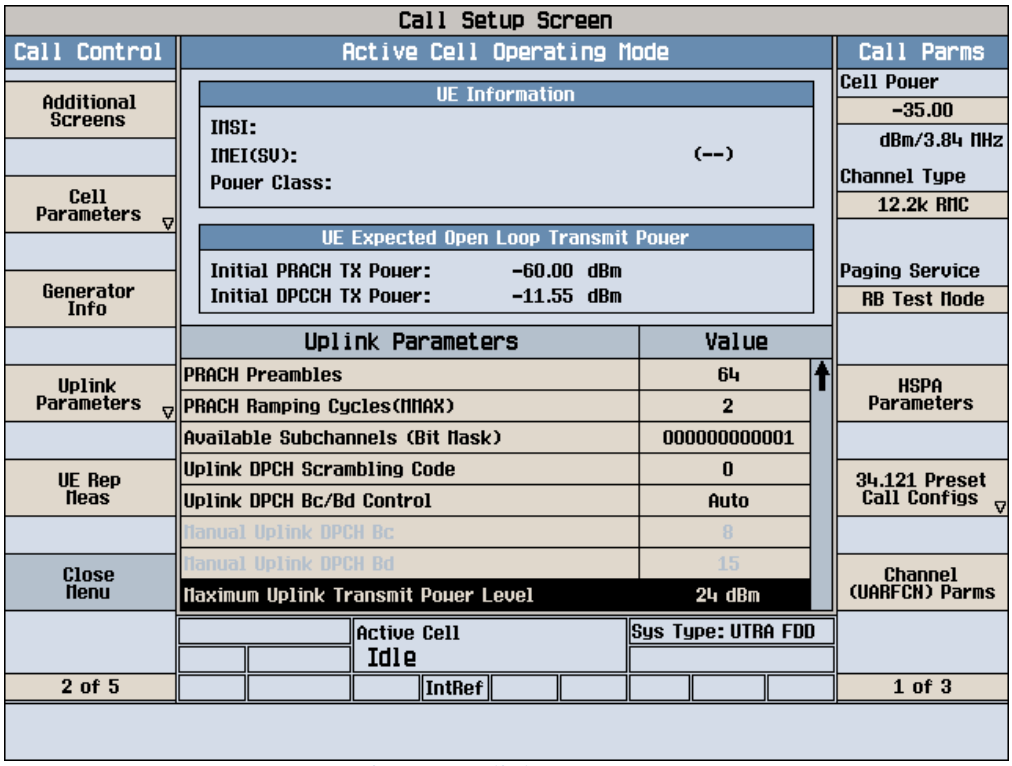


Figure 6: Uplink Parameters

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.

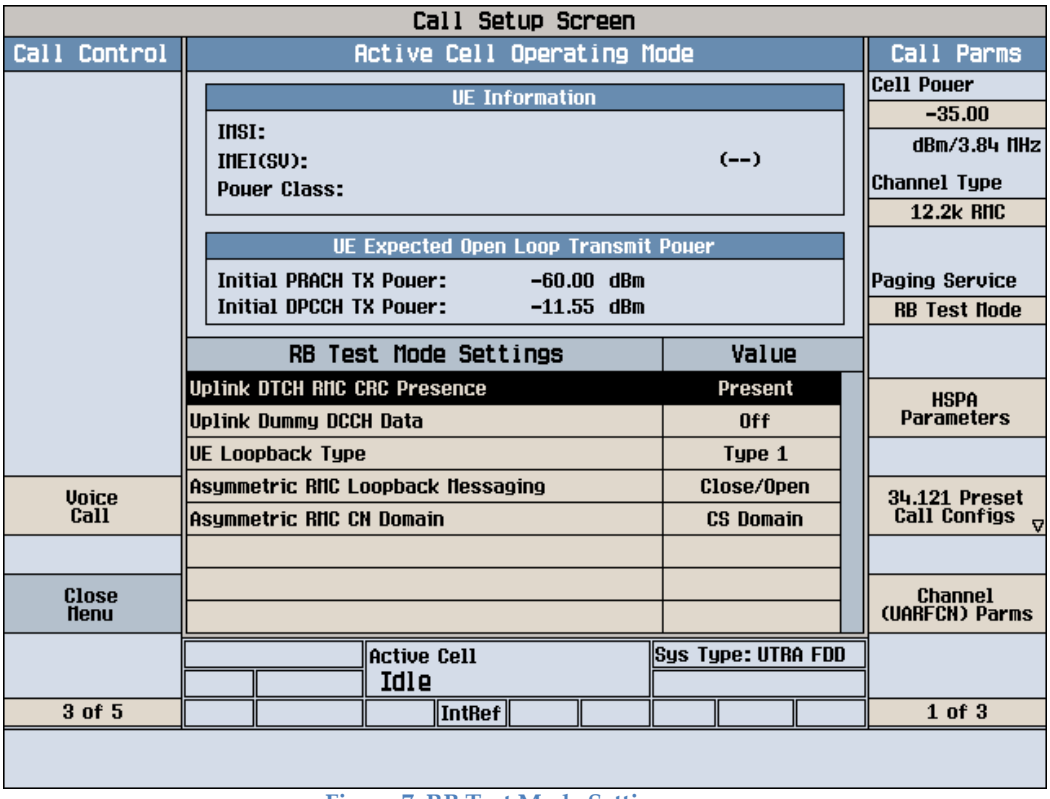


Figure 7: RB Test Mode Settings

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

1. 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 1 Setup for Release 5 HSDPA

Sub-test	β_c	β_d	B_d *(SF)*	β_c/β_d	β_{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

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

Note 2: CM = 1 for β_c/β_d = 12/15, B_{hs}/β_c = 24/15

Note 3: For subtest 2 the β_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 β_c = 11/15 and β_d = 15/15

Sub-test 5 Setup for Release 6 HSUPA

Sub-test	β_c	β_d	B_d *(SF)*	β_c/β_d	β_{hs} (1)	B_{oc}	B_{od}	B_{od} *(SF)*	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 $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

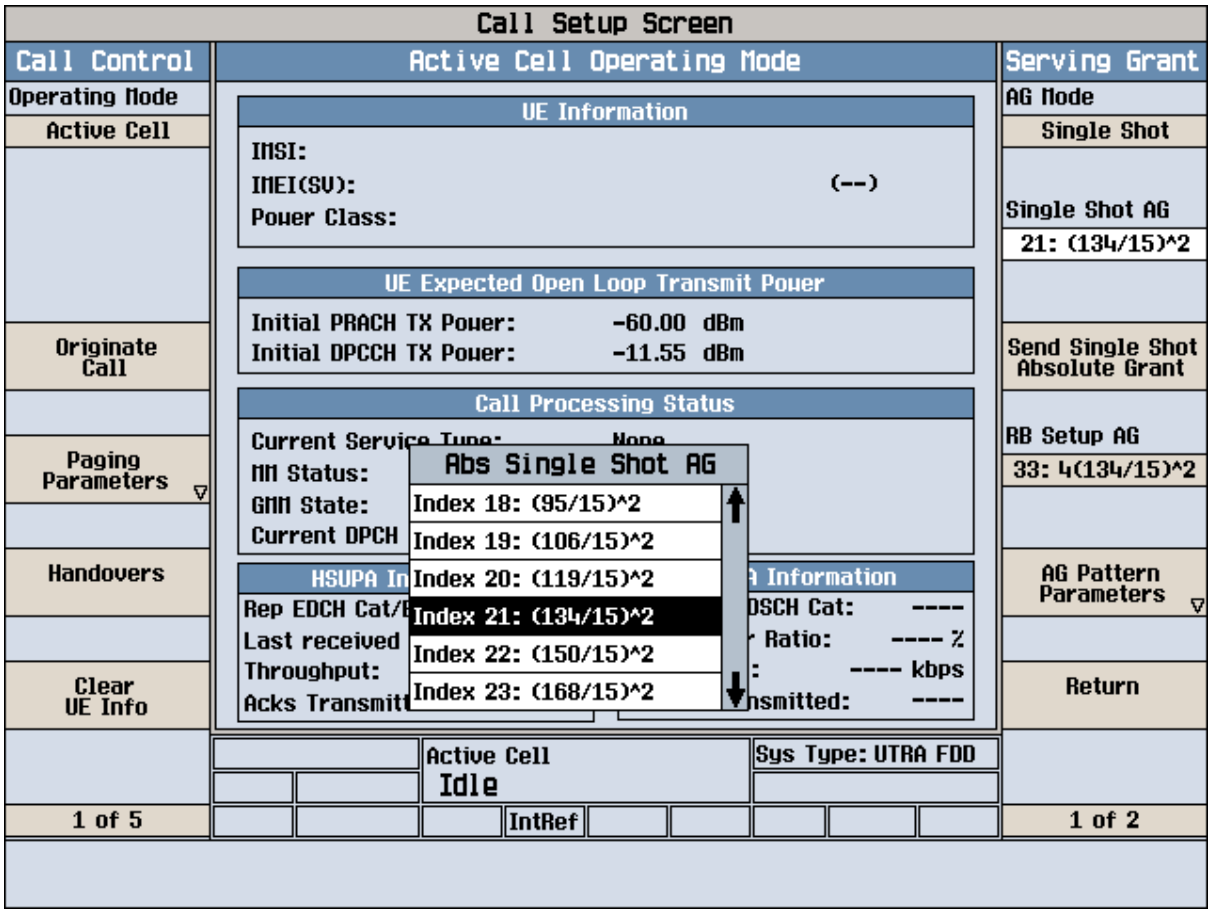
Note 2: CM = 1 for β_c/β_d = 12/15, B_{hs}/β_c = 24/15. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH AND E-DPCCH for the MPR is based on the relative CM difference.

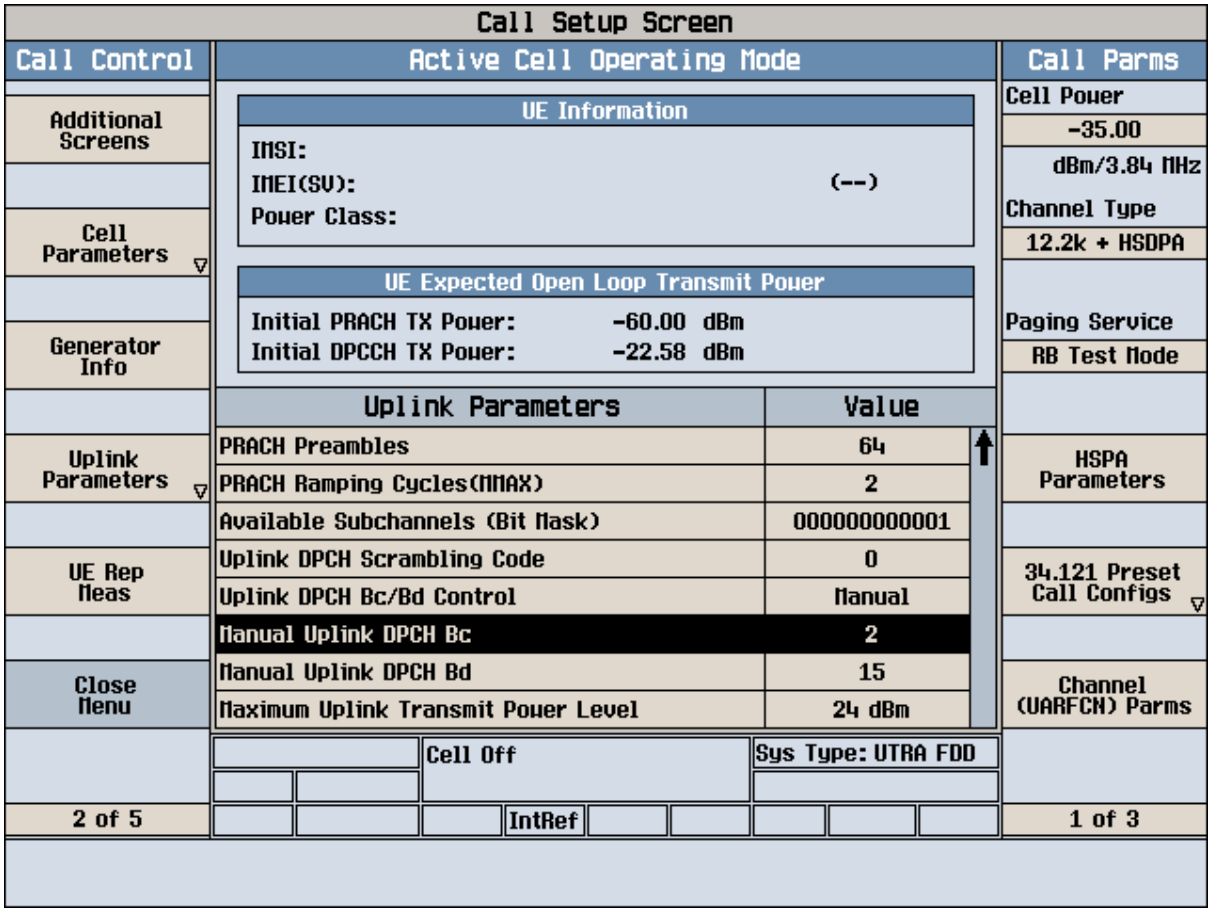
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.

Note 4: For subtest 5 the β_c/β_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 β_c = 14/15 and β_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 Tavle 5.1g.

Note 6: B_{od} can not be set directly; it is set by Absolute Grant Value.


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


Call Setup Screen
Call Control
Active Cell Operating Mode
Call Parms
Additional Screens
UE Information
IMSI:
IMEI(SV): (--)
Power Class:
Cell Power
-35.00
dBm/3.84 MHz
Channel Type
12.2k + HSDPA
Cell Parameters
UE Expected Open Loop Transmit Power
Initial PRACH TX Power: -60.00 dBm
Initial DPCCH TX Power: -22.58 dBm
Generator Info
Paging Service
RB Test Mode
Uplink Parameters
Value
PRACH Preambles 64
PRACH Ramping Cycles(MMAX) 2
Available Subchannels (Bit Mask) 000000000001
Uplink DPCH Scrambling Code 0
Uplink DPCH Bc/Bd Control Manual
Manual Uplink DPCH Bc 2
Manual Uplink DPCH Bd 15
Maximum Uplink Transmit Power Level 24 dBm
HSPA Parameters
UE Rep Meas
34.121 Preset Call Configs
Close Menu
Channel (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.

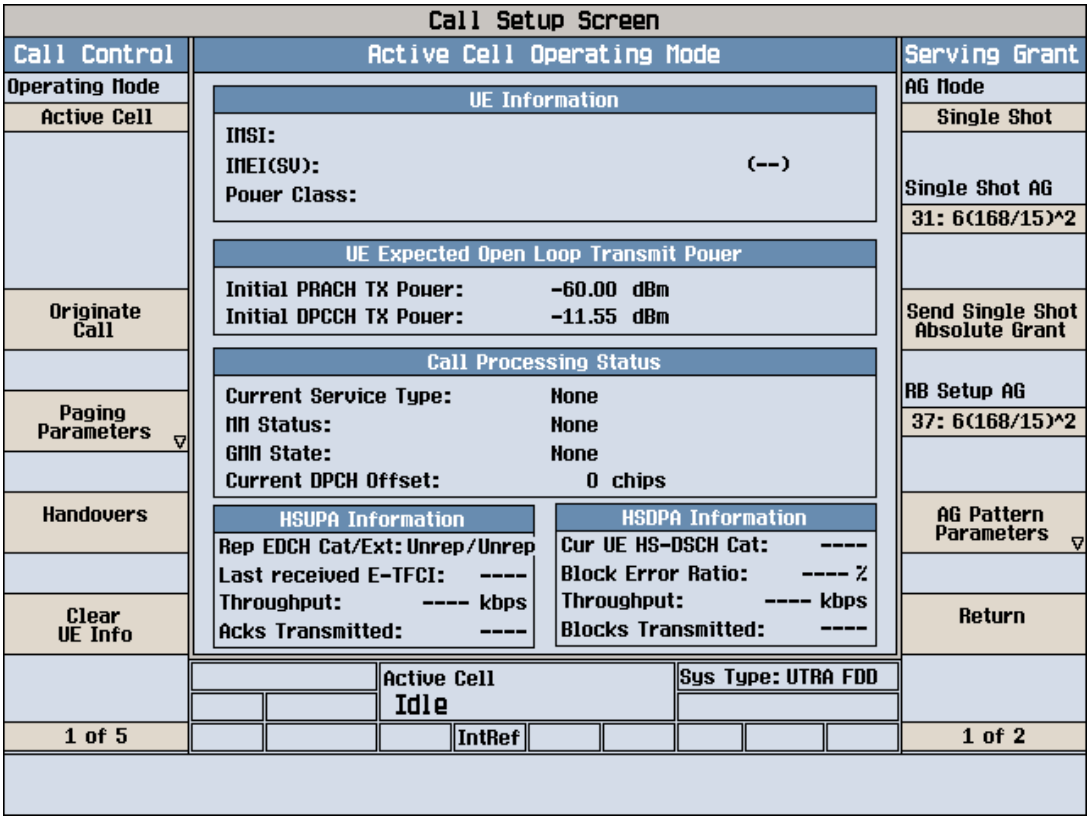


Figure 8: Serving Grant Example