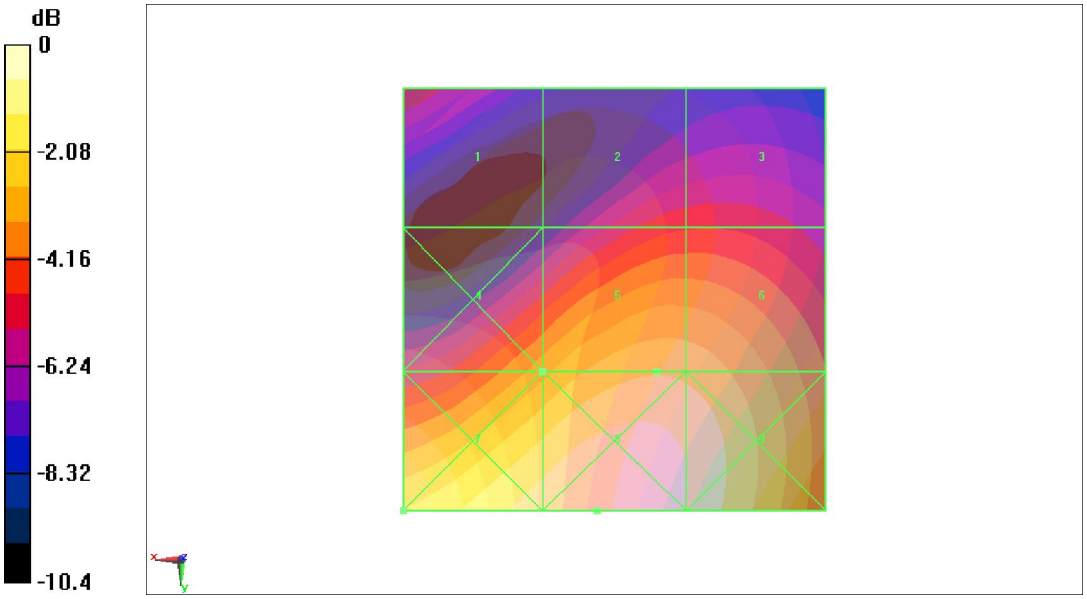


0 dB = 40.6V/m

RF RESULTS AND M-RATING	E-Field M Rating	**M4 (AWF 0 dB)**
	H-Field M Rating	**M4 (AWF 0 dB)**
	Total M Rating	**M4**

Fig B.21 Total M-rating of WCDMA 1700

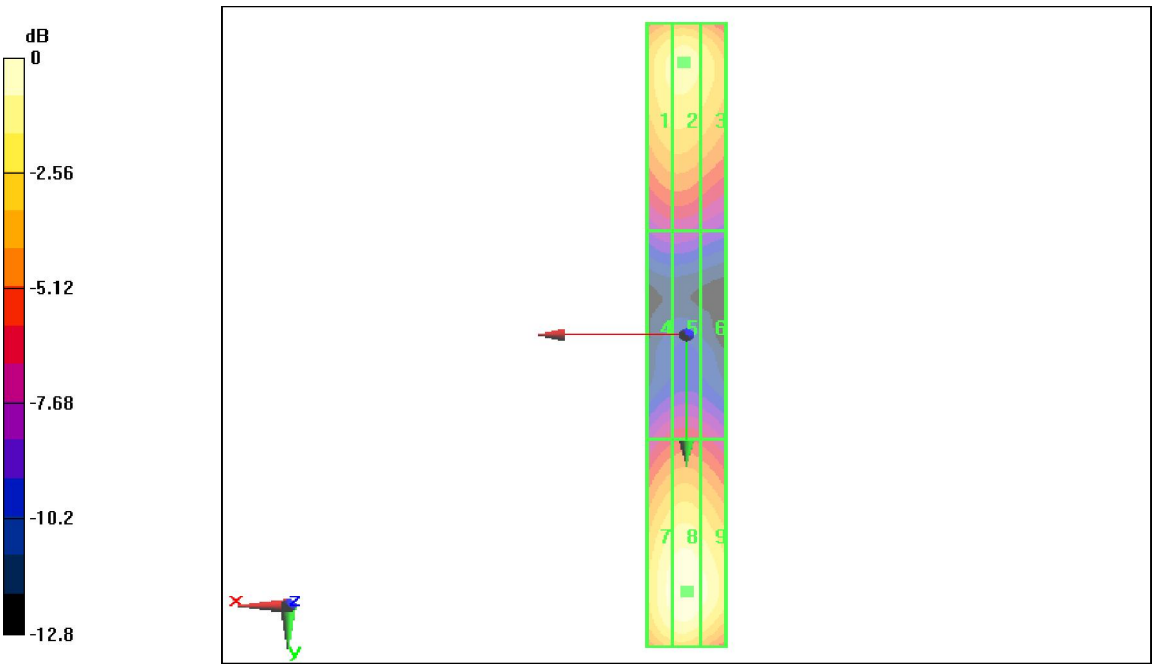
ANNEX C SYSTEM VALIDATION RESULT

E SCAN of Dipole 835 MHz

Date/Time: 7/28/2011 7:22:58 AM
Electronics: DAE4 Sn777
Medium: Air
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m3
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Probe: ER3DV6 - SN2428; ConvF(1, 1, 1)
E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 170.5 V/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 120.2 V/m; Power Drift = -0.109 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **145.2 M4**	Grid 2 **147.8 M4**	Grid 3 **139.9 M4**
Grid 4 **82.3 M4**	Grid 5 **84.4 M4**	Grid 6 **81.1 M4**
Grid 7 **162.3 M4**	Grid 8 **170.5 M4**	Grid 9 **162.1 M4**



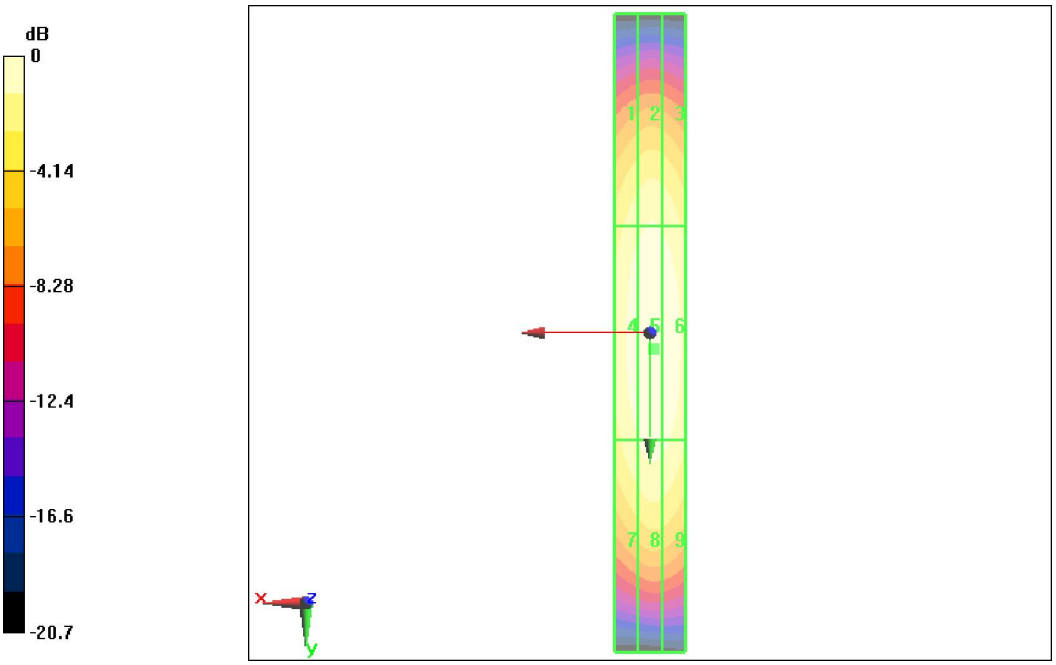
0 dB = 170.5V/m

H SCAN of Dipole 835 MHz

Date/Time: 7/28/2011 8:16:33 AM
Electronics: DAE4 Sn777
Medium: Air
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m3
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Probe: H3DV6 - SN6260;
H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.442 A/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 0.461 A/m; Power Drift = 0.041 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.357 M4**	Grid 2 **0.381 M4**	Grid 3 **0.368 M4**
Grid 4 **0.416 M4**	Grid 5 **0.442 M4**	Grid 6 **0.431 M4**
Grid 7 **0.370 M4**	Grid 8 **0.398 M4**	Grid 9 **0.387 M4**



0 dB = 0.442A/m

E SCAN of Dipole 1880 MHz

Date/Time: 7/28/2011 8:41:06 AM

Electronics: DAE4 Sn777

Medium: Air

Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3

Communication System: CW Frequency: 1900 MHz; Duty Cycle: 1:1

Probe: ER3DV6 - SN2428; ConvF(1, 1, 1)

E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 133.8 V/m

Probe Modulation Factor = 1

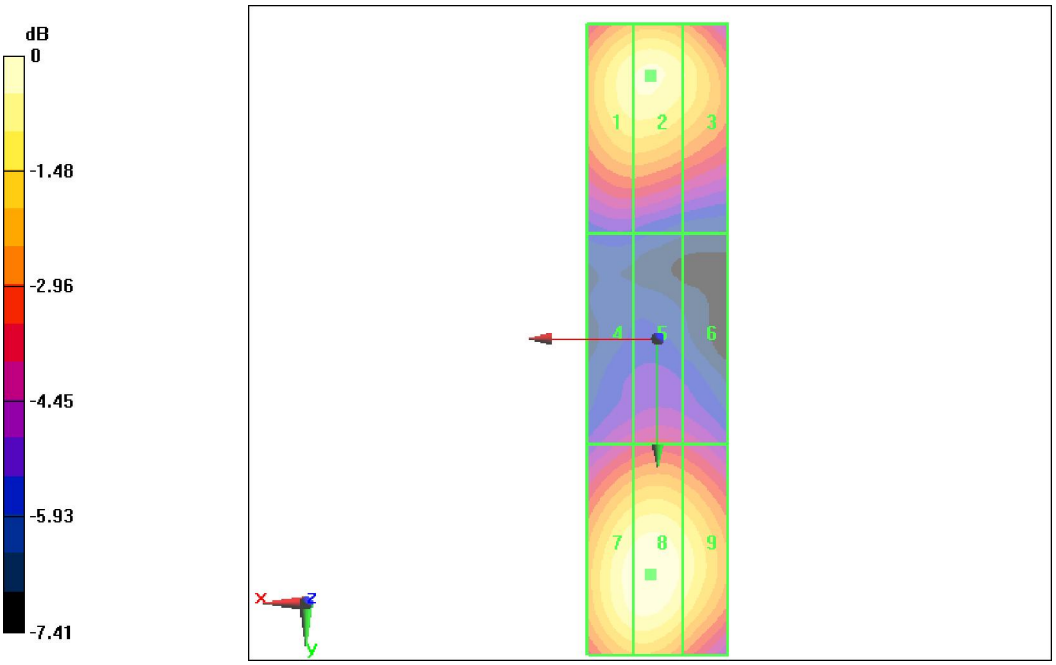
Device Reference Point: 0, 0, -6.3 mm

Reference Value = 139.5 V/m; Power Drift = 0.113 dB

Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **126.1 M2**	Grid 2 **128.1 M2**	Grid 3 **120.6 M2**
Grid 4 **84.1 M3**	Grid 5 **87.1 M3**	Grid 6 **84.8 M3**
Grid 7 **131.5 M2**	Grid 8 **133.8 M2**	Grid 9 **125.3 M2**



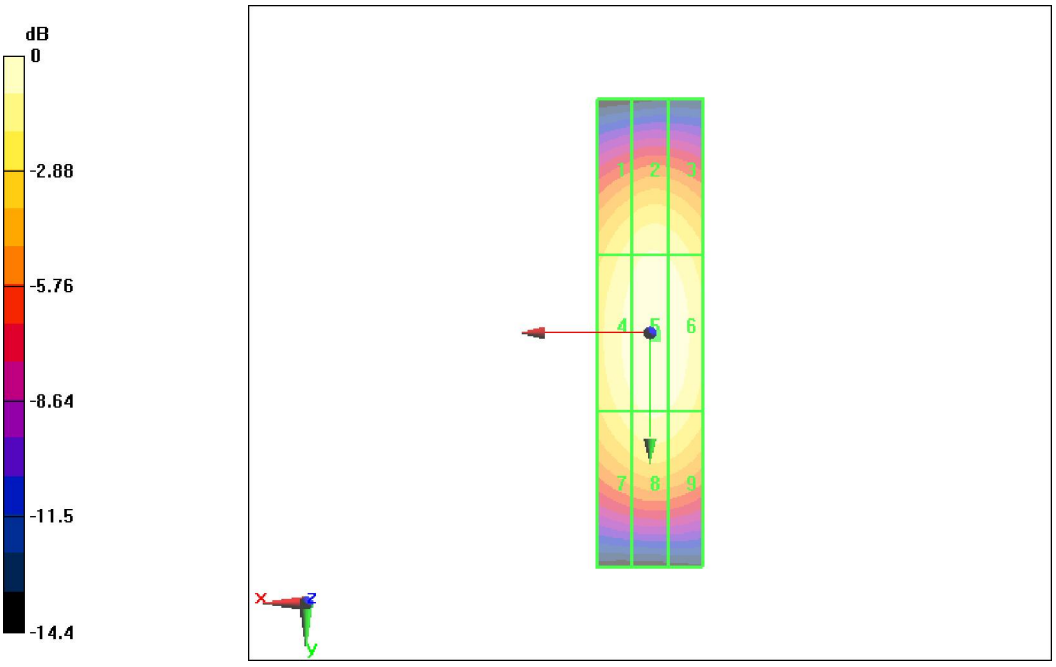
0 dB = 133.8V/m

H SCAN of Dipole 1880 MHz

Date/Time: 7/28/2011 9:15:18 AM
Electronics: DAE4 Sn777
Medium: Air
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Probe: H3DV6 - SN6260;
H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.450 A/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 0.463 A/m; Power Drift = -0.00763 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.377 M2**	Grid 2 **0.400 M2**	Grid 3 **0.393 M2**
Grid 4 **0.416 M2**	Grid 5 **0.450 M2**	Grid 6 **0.430 M2**
Grid 7 **0.380 M2**	Grid 8 **0.405 M2**	Grid 9 **0.400 M2**



0 dB = 0.450A/m

ANNEX D PROBE CALIBRATION CERTIFICATE

E_Probe ER3DV6

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client TMC

Certificate No: ER3-2428_Oct10

CALIBRATION CERTIFICATE

Object ER3DV6 - SN:2428

Calibration procedure(s) QA CAL-02.v5 and QA CAL-25.v2
Calibration procedure for E-field probes optimized for close near field evaluations in air

Calibration date: October 20, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-10 (No. 217-01030)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01030)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01030)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-10 (No. 217-01026)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-10 (No. 217-01028)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-10 (No. 217-01027)	Mar-11
Reference Probe ER3DV6	SN: 2328	3-Oct-10 (No. ER3-2328_Oct10)	Oct-11
DAE4	SN: 789	19-Dec-09 (No. DAE4-789_Dec09)	Dec-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Marcel Fehr	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 21, 2010

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

NORMx,y,z	sensitivity in free space
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1309-2005, " IEEE Standard for calibration of electromagnetic field sensors and probes, excluding antennas, from 9 kHz to 40 GHz", December 2005.

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 for XY sensors and ϑ = 90 for Z sensor (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart).
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *Ax,y,z; Bx,y,z; Cx,y,z* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media.
- *Spherical isotropy (3D deviation from isotropy)*: in a locally homogeneous field realized using an open waveguide setup.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

Probe ER3DV6

SN:2428

Manufactured:	September 11, 2007
Last calibrated:	October 20, 2009
Recalibrated:	October 20, 2010

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ER3DV6 SN:2428 October 20, 2010

DASY - Parameters of Probe: ER3DV6 SN:2428

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)	1.52	1.59	1.86	± 10.1%
DCP (mV)[A]	91.5	93.0	98.9	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc (k=2)
10000	CW		X	0.00	0.00	1.00	300	± 1.5%
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

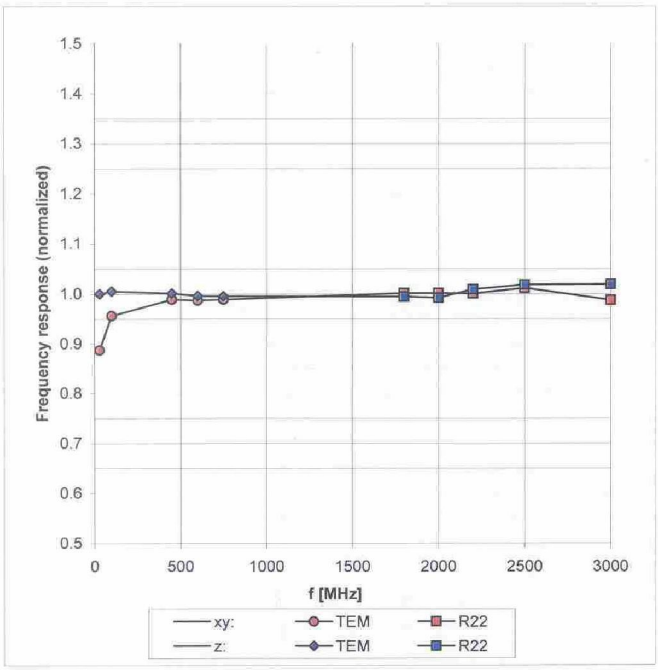
The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] numerical linearization parameter: uncertainty not required

ER3DV6 SN:2428 October 20, 2010

Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)