SAR TEST REPORT

Applicant	Mobiwire SAS
FCC ID	QPN-MOBIPHONE
Product	3G Feature Phone
Brand	Altice
Model	H30
Report No.	R1907A0371-S2V1
Issue Date	August 8, 2019

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in**IEEE 1528- 2013, ANSI C95.1: 1992/IEEE C95.1: 1991.** The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Yu Wang　　Guangchang Fan

Performed by: Yu Wang　　*Approved by: Guangchang Fan*

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1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.**The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA(Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

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1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.

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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

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2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for the EUT are as follows:
Table 1: Highest Reported SAR

Mode	Highest Reported SAR (W/kg)	
	1g SAR Head	1g SAR Body-worn (Separation 10mm)
GSM 850	**0.422**	**0.726**
GSM 1900	0.253	0.334
Date of Testing:	August 7, 2019	

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3 Description of Equipment under Test

Client Information

Applicant	Mobiwire SAS
Applicant address	79 avenue Francois Arago, 92000 NANTERRE France
Manufacturer	Mobiwire SAS
Manufacturer address	79 avenue Francois Arago, 92000 NANTERRE France

General Technologies

Application Purpose:	Original Grant
EUT Stage:	Identical Prototype
Model:	H30
IMEI:	863336040000542
Hardware Version:	V01
Software Version:	NL185_H30_ODO_S_L_V01_20190628_MP
Antenna Type:	Internal Antenna
Device Class:	B
Power Class:	GSM 850:4 GSM 1900:1
Power Level:	GSM 850:level 5 GSM 1900:level 0
EUT Accessory	
Adapter	Manufacturer: Dongguan Aohai Aohai Power Power Technology Co., Ltd Model: A31A-050055U-US1
Battery	Manufacturer: Shenzhen Aerospace Electronic Co.,Ltd. Model: 178100170 Power Rating: DC 3.7V, 1000mAh, Li-ion
Charging cradle	Manufacturer: SAGETEL HK Model: H30

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Wireless Technology and Frequency Range

Wireless Technology		Modulation	Operating mode	Tx (MHz)
GSM	850	Voice(GMSK) GPRS(GMSK)	☐Multi-slot Class:8-1UP ☐Multi-slot Class:10-2UP ☒Multi-slot Class:12-4UP ☐Multi-slot Class:33-4UP	824 ~ 849
	1900			1850 ~ 1910
	Does this device support DTM (Dual Transfer Mode)? ☐Yes ☒No			

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4 Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE 1528- 2013, ANSI C95.1: 1992/IEEE C95.1: 1991, the following FCC Published RF exposure KDB procedures:

447498 D01 General RF Exposure Guidance v06
648474 D04 Handset SAR v01r03
690783 D01 SAR Listings on Grants v01r03
865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
865664 D02 RF Exposure Reporting v01r02
941225 D01 3G SAR Procedures v03r01

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5 Operational Conditions during Test

5.1 Test Positions

5.1.1 Against Phantom Head

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.

The positions used in the measurements were according to IEEE 1528 - 2013 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

5.1.2 Body Worn Configuration

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person’s face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

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5.2 Measurement Variability

Per FCC KDB Publication 865664 D01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:
1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

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5.3 Test Configuration

5.3.1 GSM Test Configuration

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot. The allowed power reduction in the multi-slot configuration is as following:

Output power of reductions:

Table 1: The allowed power reduction in the multi-slot configuration

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power,(dB)
1	0
2	0 to 3,0
3	1,8 to 4,8
4	3,0 to 6,0

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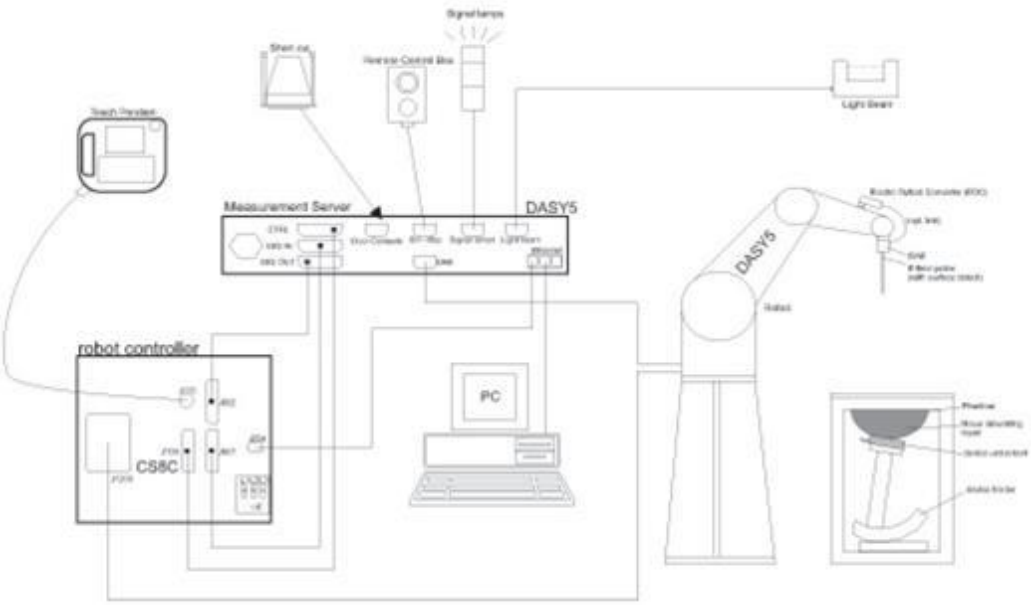
6 SAR Measurements System Configuration

6.1 SAR Measurement Set-up

The DASY system for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

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6.2 DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ES3DV3 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

ES3DV3 Probe Specification

Construction	Symmetrical design with triangular coreInterleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to 4 GHz Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 μW/g to > 100 mW/g Linearity: ± 0.2dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tipdiameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based

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temperature probe is used in conjunction with the E-field probe.

SAR=C∆T/∆t

Where: ∆t = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

∆T = Temperature increase due to RF exposure.

Or

SAR=$|E|^2\sigma/\rho$

Where: σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

6.3 SAR Measurement Procedure

Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

	≤3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: ΔxArea, ΔyArea	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

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Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

			≤3GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\triangle x_{zoom} \triangle y_{zoom}$			≤2GHz: ≤8mm 2 – 3GHz: ≤5mm*	3 – 4GHz: ≤5mm* 4 – 6GHz: ≤4mm*
Maximum zoom scan spatial resolution, normal to phantom surface	Uniform grid: $\triangle z_{zoom}(n)$		≤5mm	3 – 4GHz: ≤4mm 4 – 5GHz: ≤3mm 5 – 6GHz: ≤2mm
	Graded grid	$\triangle z_{zoom}(1)$: between 1st two points closest to phantom surface	≤4mm	3 – 4GHz: ≤3mm 4 – 5GHz: ≤2.5mm 5 – 6GHz: ≤2mm
		$\triangle z_{zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \triangle z_{zoom}(n-1)$	
Minimum zoom scan volume	X, y, z		≥30mm	3 – 4GHz: ≥28mm 4 – 5GHz: ≥25mm 5 – 6GHz: ≥22mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4W/kg, ≤8mm, ≤7mm and ≤5mm zoom scan resolution may be applied, respectively, for 2GHz to 3GHz, 3GHz to 4GHz and 4GHz to 6GHz.

Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

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7 Main Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Data	Cal. interval
System Validation Dipole	SPEAG	D835V2	4d005	May. 18, 2018	3 Year
System Validation Dipole	SPEAG	D1900V2	509	May. 18, 2018	3 Year
Dosimetric E-Field Probe	SPEAG	ES3DV3	3090	Apr. 12, 2019	1 Year
Data Acquisition Electronics	SPEAG	DAE4	662	Apr. 11, 2019	1 Year
Radio Communication Analyzer	Anritsu	MT8820C	6200918396	Dec. 12, 2018	1 Year
ENA Series Network Analyzer	Agilent	8753ES	US39170317	Dec. 12, 2018	1 Year
Dielectric Assessment Kit	SPEAG	DAK-3.5	1056	N/A	N/A
USB/GPIB Interface	Agilent	82357B	N10149	N/A	N/A
Signal Generator	R&S	SMT06	100796	May. 14, 2019	1 Year
Signal Generator	R&S	SMB100A	103718	Dec. 12, 2018	1 Year
POWER METER	R&S	NRP	101293	Dec. 18, 2018	1 Year
Thermometer	Shanghai Gao Zhi Precision Instrument Co., Ltd.	HB6801	120100323	May. 16, 2019	1 Year
oupler	REBES	TC-05180-10S	161221001	N/A	N/A
Amplifier	Mini-Circuit	ZHL42	QA1252001	N/A	N/A
DC Source	Agilent	66319B	MY43000795	N/A	N/A

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8 Tissue Dielectric Parameter Measurements&System Verification

8.1 Tissue Verification

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance.

Target values

Frequency (MHz)		Water (%)	Salt (%)	Sugar (%)	Glycol (%)	Preventol (%)	Cellulose (%)	ε_r	σ(s/m)
Head	835	41.45	1.45	56	0	0.1	1.0	41.5	0.90
	1900	55.242	0.306	0	44.452	0	0	40.0	1.40
Body	835	52.5	1.4	45	0	0.1	1.0	55.2	0.97
	1900	69.91	0.13	0	29.96	0	0	53.3	1.52

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Measurements results

Frequency (MHz)		Test Date	Temp ℃	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within ±5%)	
				σ(s/m)	ε_r	σ(s/m)	ε_r	Dev σ(%)	Dev ε_r(%)
835	Head	8/7/2019	22.1	0.93	43.00	0.90	41.50	3.44	3.61
	Body	8/7/2019	22.1	0.99	55.30	0.97	55.20	2.16	0.18
1900	Head	8/7/2019	22.1	1.44	41.00	1.40	40.00	2.86	2.50
	Body	8/7/2019	22.1	1.55	52.40	1.52	53.30	1.97	-1.69
Note: The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.									

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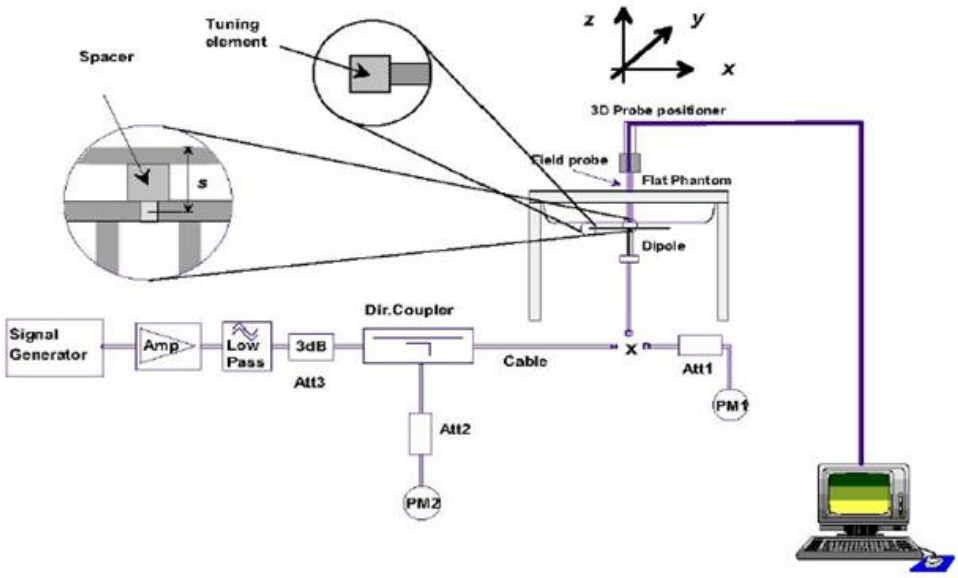
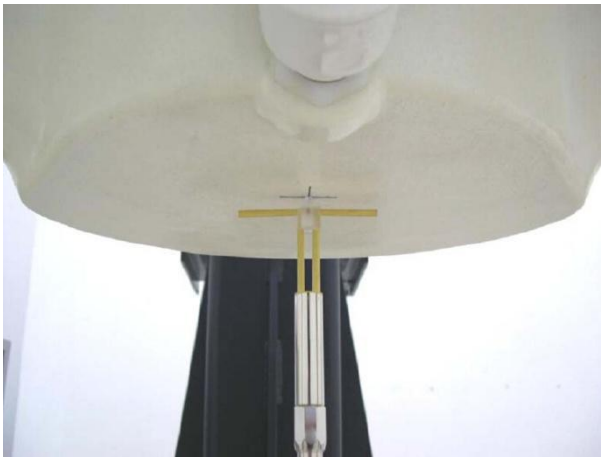
8.2 System Performance Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured using the dielectric probe kit and the network analyzer. A system check measurement for every day was made following the determination of the dielectric parameters of the Tissue simulates, using the dipole validation kit. The dipole antenna was placed under the flat section of the twin SAM phantom.

System check is performed regularly on all frequency bands where tests are performed with the DASY system.



Picture 1System Performance Check setup



Picture 2 Setup Photo

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Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss (< - 20 dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

Dipole		Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
Dipole D835V2 SN: 4d005	Head Liquid	5/18/2018	-34.1	/	49.5	/
		5/15/2019	-32.0	6.2	48.6	0.9
	Body Liquid	5/18/2018	22.1	/	46.6	/
		5/15/2019	-21.4	3.16	44.1	2.5
Dipole D1900V2 SN: 509	Head Liquid	5/18/2018	-23.4	/	52.0	/
		5/15/2019	-22.7	3.00	54.4	2.4
	Body Liquid	5/18/2018	-21.4	/	52.7	/
		5/15/2019	-20.6	3.7	50.6	2.1

System Check results

Frequency (MHz)		Test Date	Temp ℃	10mW Measured SAR_{1g}(W/kg)	1W Normalized SAR_{1g} (W/kg)	1W Target SAR_{1g} (W/kg)	Δ % (Limit ±10%)	Plot No.
835	Head	8/7/2019	22.1	0.091	9.1	9.45	-3.70	P1
	Body	8/7/2019	22.1	0.095	9.50	9.74	-2.46	P3
1900	Head	8/7/2019	22.1	0.387	38.7	39.6	-2.27	P2
	Body	8/7/2019	22.1	0.405	40.50	39.5	2.47	P4
Note：Target Values used derive from the calibration certificate Data Storage and Evaluation.								

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9 Normal and Maximum Output Power

KDB 447498 D01 at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

9.1 GSM Mode

GSM 850		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	128 /824.2	190 /836.6	251 /848.8		MAX	128 /824.2	190 /836.6	251 /848.8
GSM	CS	33.00	32.12	**32.18**	32.13	9	24.00	23.12	23.18	23.13
GPRS (GMSK)	1 Tx Slot	33.00	32.04	32.12	32.05	9	24.00	23.04	23.12	23.05
	2 Tx Slots	32.00	31.14	31.21	31.17	6	26.00	25.14	25.21	25.17
	3 Tx Slots	30.00	29.45	29.49	29.43	4.26	25.74	25.19	25.23	25.17
	4 Tx Slots	29.50	28.71	28.77	28.68	3	**26.50**	**25.71**	**25.77**	**25.68**
GSM 1900		Burst-Averaged output power(dBm)				Division Factors	Frame-Averaged output power(dBm)			
		Tune-up	Channel/Frenqucy(MHz)				Tune-up	Channel/Frenqucy(MHz)		
		MAX	512 /1850.2	661 /1880	810 /1909.8		MAX	512 /1850.2	661 /1880	810 /1909.8
GSM	CS	30.50	29.77	29.86	**29.87**	9	21.50	20.77	20.86	20.87
GPRS (GMSK)	1 Tx Slot	30.50	29.71	29.78	29.84	9	21.50	20.71	20.78	20.84
	2 Tx Slots	29.50	28.75	28.85	28.89	6	23.50	22.75	22.85	22.89
	3 Tx Slots	27.50	26.84	26.93	26.98	4.26	23.24	22.58	22.67	22.72
	4 Tx Slots	26.50	25.91	25.99	26.01	3	**23.50**	**22.91**	**22.99**	**23.01**

Notes:The worst-case configuration and mode for SAR testing is determined to be as follows:
1. Standalone: GSM 850 GMSK (GPRS) mode with 4 time slots for Max power, GSM 1900 GMSK (GPRS) mode with 4 time slots for Max power,based on the output power measurements above..

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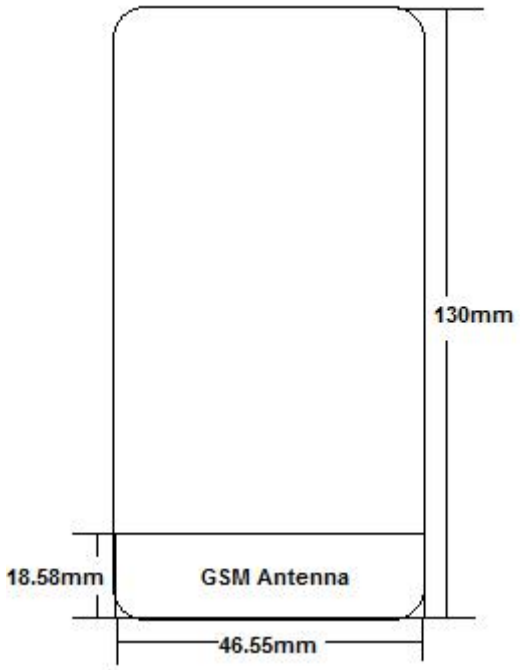
10 Measured and Reported (Scaled) SAR Results

10.1 EUT Antenna Locations



Overall (Length x Width): 130 mm x 50 mm Overall Diagonal: 134mm/Display Diagonal: 46 mm
Note: 1. Per FCC KDB 447498 D01, for each exposure position, testing of other requised channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is: a) ≤0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100MHz b) ≤0.6 W/kg or 1.5 W/kg, for1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz. c) ≤ 0.4 W/kg or 1.0 Wkg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz. 2.When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

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10.2 Measured SAR Results

Table 1: GSM 850

Test Position	Cover Type	Channel /Frequency (MHz)	Time slot	Duty Cycle	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Power Drift (dB)	Measured SAR1g	Scaling Factor	Report SAR1g	
Head SAR											
Left Cheek	standard	190/836.6	GSM	1:8.3	33.00	32.18	-0.050	0.349	1.21	0.422	P1
Left Tilt	standard	190/836.6	GSM	1:8.3	33.00	32.18	-0.130	0.168	1.21	0.203	/
Right Cheek	standard	190/836.6	GSM	1:8.3	33.00	32.18	-0.070	0.337	1.21	0.407	/
Right Tilt	standard	190/836.6	GSM	1:8.3	33.00	32.18	-0.030	0.163	1.21	0.197	/
Body-worn SAR (Distance 10m)											
Back Side	standard	190/836.6	GSM	1:8.3	33.00	32.18	-0.190	0.601	1.21	0.726	P3
Front Side	standard	190/836.6	GSM	1:8.3	33.00	32.18	-0.130	0.392	1.21	0.473	/

Note: 1.The value with blue color is the maximum SAR Value of each test band.

2.When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

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Table 2: GSM 1900

Test Position	Cover Type	Channel /Frequency (MHz)	Time slot	Duty Cycle	Tune-up (dBm)	Measured power (dBm)	Limit of SAR 1.6 W/kg (mW/g)				Plot No.
							Power Drift (dB)	Measured SAR1g	Scaling Factor	Report SAR1g	
Head SAR											
Left Cheek	standard	810/1909.8	GSM	1:8.3	30.50	29.87	0.170	0.219	1.16	0.253	P2
Left Tilt	standard	810/1909.8	GSM	1:8.3	30.50	29.87	-0.030	0.079	1.16	0.091	/
Right Cheek	standard	810/1909.8	GSM	1:8.3	30.50	29.87	0.000	0.170	1.16	0.197	/
Right Tilt	standard	810/1909.8	GSM	1:8.3	30.50	29.87	-0.180	0.104	1.16	0.120	/
Body-worn SAR (Distance 10m)											
Back Side	standard	810/1909.8	GSM	1:8.3	30.50	29.87	-0.130	0.289	1.16	0.334	P4
Front Side	standard	810/1909.8	GSM	1:8.3	30.50	29.87	-0.170	0.167	1.16	0.193	/

Note: 1.The value with blue color is the maximum SAR Value of each test band.

2.When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

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11 Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528- 2013 is not required in SAR reports submitted for equipment approval.

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ANNEX A: Test Layout

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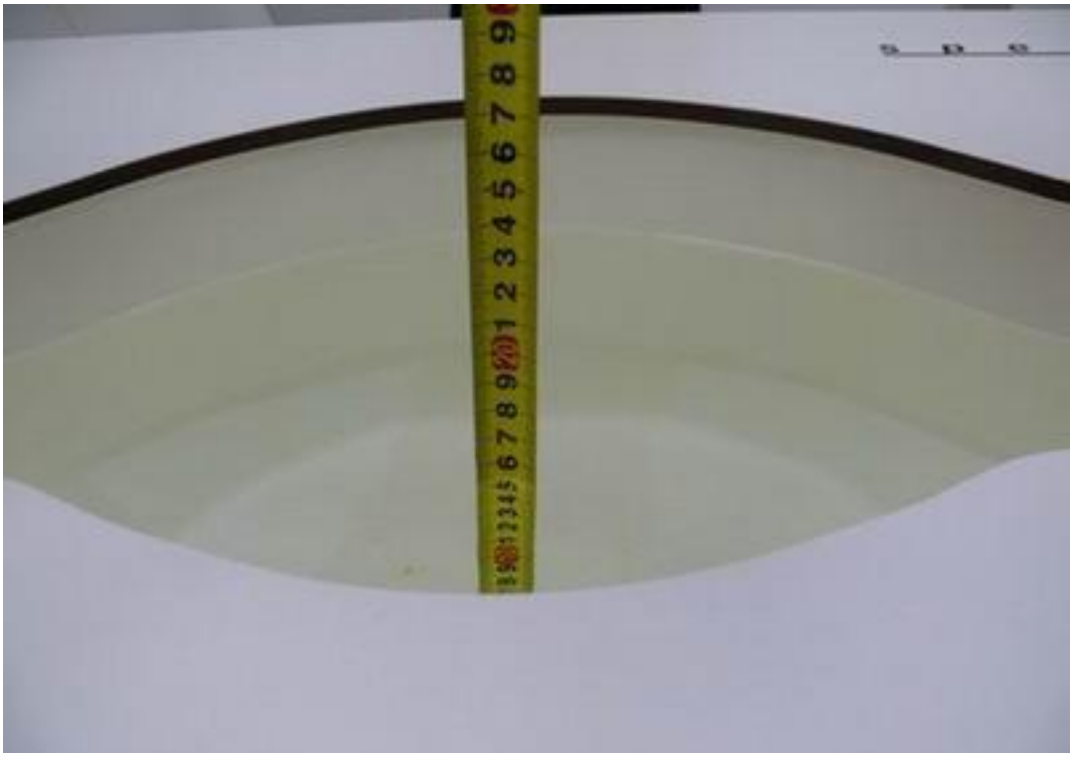
Tissue Simulating Liquids

For the measurement of the field distribution inside the flat phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For Head and Body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Picture 3 and Picture 4.

Picture 3: liquid depth in the head Phantom



Picture 4: Liquid depth in the flat Phantom

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ANNEX B:The EUT Appearances and Test Configuration

Front Side

Back Side
a: EUT

Picture 5: Constituents of EUT

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Picture 6:Left Hand Touch Cheek Position

Picture 7: Left Hand Tilt 15 Degree Position

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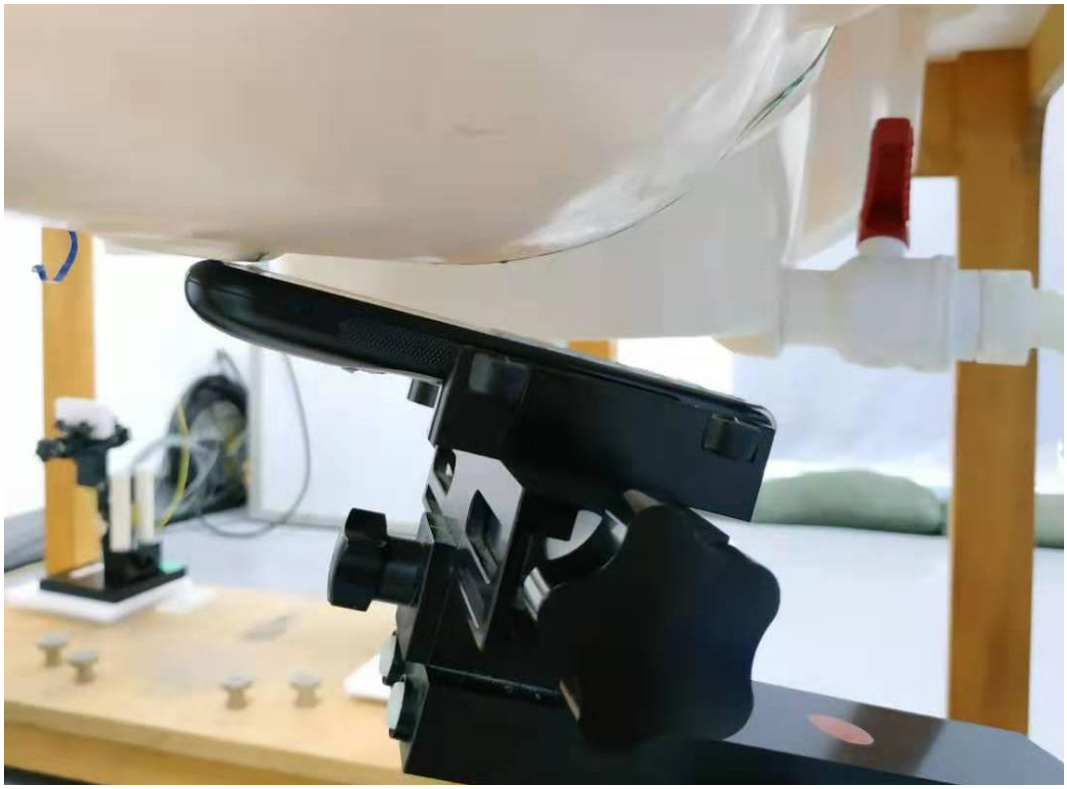
Picture 8: Right Hand Touch Cheek Position



Picture 9: Right Hand Tilt 15 Degree Position

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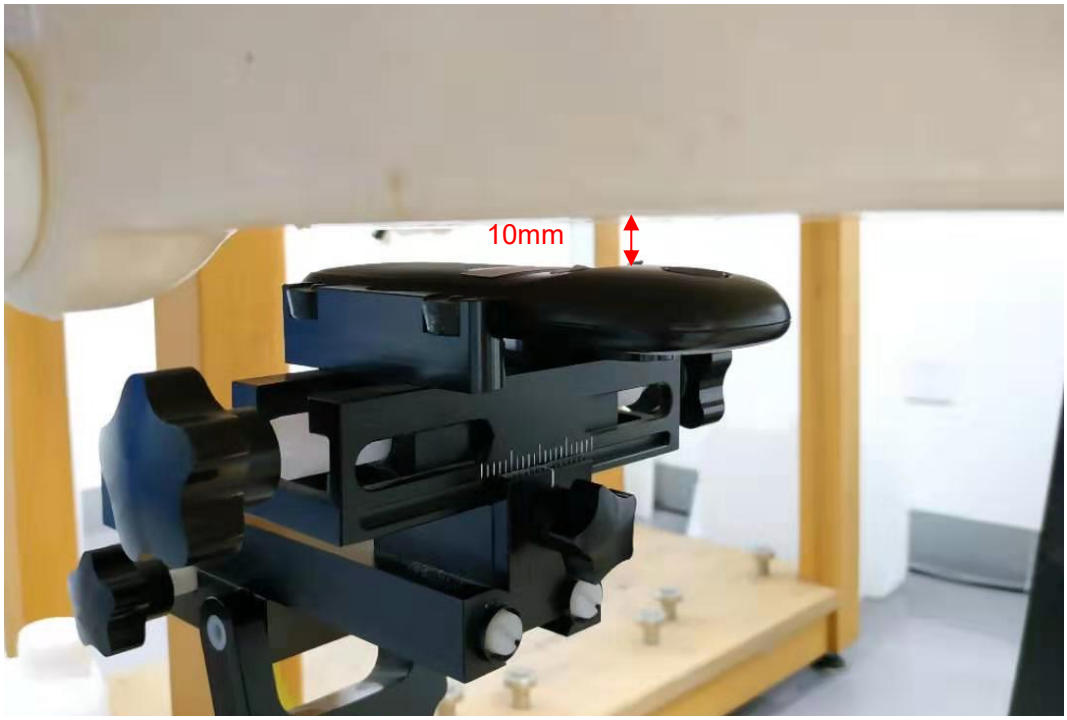
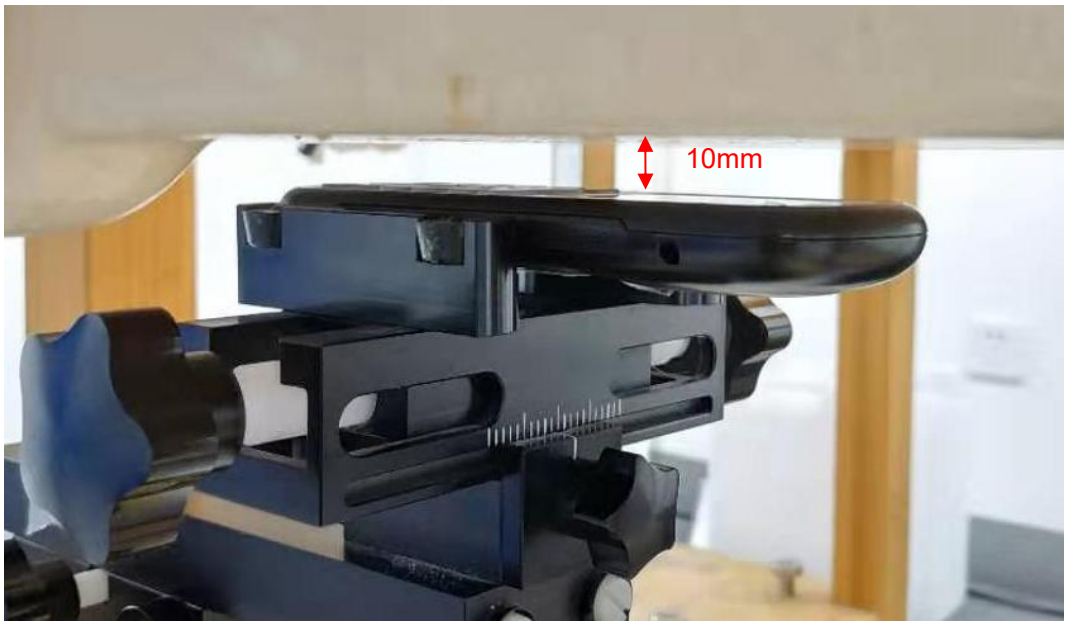


Picture 10: Back Side, the distance from handset to the bottom of the Phantom is 10mm



Picture 11: Front Side, the distance from handset to the bottom of the Phantom is 10mm

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ANNEX C: System Check Results

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ANNEX D: Highest Graph Results

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ANNEX E: Calibration Certificate

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