

EX3DV4 Sn:3708 (5/7)

EX3DV4\_Sn:3708 October 22, 2019

Model	Serial	Year	Month	Day	Time	Power	Frequency	Bandwidth	Modulation	SNR	BER	BER Error	BER Rate
10001	10001	2019	10	22	10:00	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10002	10002	2019	10	22	10:01	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10003	10003	2019	10	22	10:02	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10004	10004	2019	10	22	10:03	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10005	10005	2019	10	22	10:04	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10006	10006	2019	10	22	10:05	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10007	10007	2019	10	22	10:06	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10008	10008	2019	10	22	10:07	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10009	10009	2019	10	22	10:08	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10010	10010	2019	10	22	10:09	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10011	10011	2019	10	22	10:10	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10012	10012	2019	10	22	10:11	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10013	10013	2019	10	22	10:12	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10014	10014	2019	10	22	10:13	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10015	10015	2019	10	22	10:14	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10016	10016	2019	10	22	10:15	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10017	10017	2019	10	22	10:16	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10018	10018	2019	10	22	10:17	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10019	10019	2019	10	22	10:18	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10020	10020	2019	10	22	10:19	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10021	10021	2019	10	22	10:20	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10022	10022	2019	10	22	10:21	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10023	10023	2019	10	22	10:22	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10024	10024	2019	10	22	10:23	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10025	10025	2019	10	22	10:24	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10026	10026	2019	10	22	10:25	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10027	10027	2019	10	22	10:26	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10028	10028	2019	10	22	10:27	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10029	10029	2019	10	22	10:28	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10030	10030	2019	10	22	10:29	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10031	10031	2019	10	22	10:30	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10032	10032	2019	10	22	10:31	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10033	10033	2019	10	22	10:32	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10034	10034	2019	10	22	10:33	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10035	10035	2019	10	22	10:34	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10036	10036	2019	10	22	10:35	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10037	10037	2019	10	22	10:36	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10038	10038	2019	10	22	10:37	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10039	10039	2019	10	22	10:38	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10040	10040	2019	10	22	10:39	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10041	10041	2019	10	22	10:40	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10042	10042	2019	10	22	10:41	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10043	10043	2019	10	22	10:42	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10044	10044	2019	10	22	10:43	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10045	10045	2019	10	22	10:44	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10046	10046	2019	10	22	10:45	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10047	10047	2019	10	22	10:46	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10048	10048	2019	10	22	10:47	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10049	10049	2019	10	22	10:48	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10050	10050	2019	10	22	10:49	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10051	10051	2019	10	22	10:50	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10052	10052	2019	10	22	10:51	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10053	10053	2019	10	22	10:52	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10054	10054	2019	10	22	10:53	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10055	10055	2019	10	22	10:54	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10056	10056	2019	10	22	10:55	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10057	10057	2019	10	22	10:56	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10058	10058	2019	10	22	10:57	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10059	10059	2019	10	22	10:58	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10060	10060	2019	10	22	10:59	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10061	10061	2019	10	22	11:00	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10062	10062	2019	10	22	11:01	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10063	10063	2019	10	22	11:02	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10064	10064	2019	10	22	11:03	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10065	10065	2019	10	22	11:04	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10066	10066	2019	10	22	11:05	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10067	10067	2019	10	22	11:06	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10068	10068	2019	10	22	11:07	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10069	10069	2019	10	22	11:08	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10070	10070	2019	10	22	11:09	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10071	10071	2019	10	22	11:10	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10072	10072	2019	10	22	11:11	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10073	10073	2019	10	22	11:12	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10074	10074	2019	10	22	11:13	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10075	10075	2019	10	22	11:14	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10076	10076	2019	10	22	11:15	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10077	10077	2019	10	22	11:16	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10078	10078	2019	10	22	11:17	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10079	10079	2019	10	22	11:18	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10080	10080	2019	10	22	11:19	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10081	10081	2019	10	22	11:20	1000	100.00	10.00	QPSK	10.0	0.00	0.00	0.00%
10082	10082</												







D750V3 Sn:1101 (1/2)




Add: No.11 Xuyuan Road, Jiaodaokou, Beijing 100015, China  
 Tel: +86-10-52019333/3378 Fax: +86-10-52019334/3334  
 E-mail: srtc@ttdl.com.cn http://www.ttdl.com.cn

**Client: SRTC Certificate No.: Z17-07134**

### CALIBRATION CERTIFICATE

**Object:** D750V3 - SN: 1101  
**Calibration Procedure(s):** FR-215-003-01  
 Calibration Procedure for dipole calibration etc.  
**Calibration date:** September 12, 2017

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(1). The measurements and the uncertainties with confidence probability are given in the following pages and are part of the certificate.

All calibrations have been conducted in the stated laboratory facility, environment, temperature(2)(3) and humidity(4).

Calibration Equipment used (MATE critical for calibration)

Primary Standards	ID #	Cal Date/Calibrated by/ Certificate No.	Schedule Calibration
Power Meter N9100	102198	02-Mar-17 (CITL No. J17002284)	Mar-18
Power sensor N9175	102096	02-Mar-17 (CITL No. J1701034)	Mar-18
Reference Power E43C9	SN 7433	25-Sep-16(SPEAG/No.0047433_Sep16)	Sep-17
EMF	SN 1331	16-Jan-17(CITL/0996434/Z17-07131)	Jan-18


Secondary Standards	ID #	Cal Date/Calibrated by/ Certificate No.	Schedule Calibration
Signal Generator E4438C	RF49874438	15-Jan-17 (CITL No. J17002286)	Jan-18
Network Analyser CS171C	674611121C	15-Jan-17 (CITL No. J17002288)	Jan-18

**Calibrated by:** Name: Zhen-Ang, Function: SAR Test Engineer, Signature:   
**Reviewed by:** Ye Zongyong, SAR Test Engineer, Signature:   
**Approved by:** Qi Danyuan, SAR Project Leader, Signature: 

Issued: September 15, 2017

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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**Glossary:**

TSL: tissue simulating liquid  
 Conf#: sensitivity in TSL / NORM: y/z  
 NA: not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 3GHz)", July 2016
- IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- KDB600004, SAR Measurement Requirements for 100 MHz to 6 GHz

**Additional Documentation:**

① DASYS System Handbook.

**Methods Applied and Interpretation of Parameters:**

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the apertures to position its feed point exactly below the center marking of the fat phantom section, with the arms oriented parallel to the body axis.
- Feed Power Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transferred from the measurement of the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR is measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna terminals.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

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%.

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**Measurement Conditions**  
 DASYS system configuration, see full report page 1

DASY Version	DAE732	02-10-2-1943
Exposure Unit	Advanced Calibration	
Phantom	Topa Fat Phantom 6.1C	
Distance (Dipole Center - TSL)	10 mm	with spacer
2000 Scan Resolution	4x 4x 3x = 1 mm	
Frequency	210 MHz ± 1 kHz	

**Head TSL parameters**  
 The following parameters and calculations were applied:

Temperature	Humidity	Conductivity	
Measured Head TSL parameters	22.9 °C	47.9	0.85 mS/cm
Measured Head TSL parameters	(22.9 ± 0.2) °C	(47.9 ± 0.5)	(0.85 mS/cm ± 0.5%)
Head TSL temperature change during test	(+1.2) °C	---	---

**SAR result with Head TSL**

SAR measured	Condition	200 mW / g
SAR for nominal Head TSL parameters <td>normalized to 1W</td> <td>0.28 mW / g ± 18.8% (k=2)</td>	normalized to 1W	0.28 mW / g ± 18.8% (k=2)
SAR averaged over 10 cm <sup>2</sup> (10 g) of Head TSL <td>Condition</td> <td>0.17 mW / g</td>	Condition	0.17 mW / g
SAR measured	200 mW input power	1.34 mW / g
SAR for nominal Head TSL parameters <td>normalized to 1W</td> <td>0.58 mW / g ± 19.7% (k=2)</td>	normalized to 1W	0.58 mW / g ± 19.7% (k=2)

**Body TSL parameters**  
 The following parameters and calculations were applied:

Temperature	Humidity	Conductivity	
Measured Body TSL parameters	22.1 °C	49.5	0.96 mS/cm
Measured Body TSL parameters	(22.1 ± 0.2) °C	(49.5 ± 0.5)	(0.96 mS/cm ± 0.5%)
Body TSL temperature change during test	(+1.2) °C	---	---

**SAR result with Body TSL**

SAR measured	Condition	200 mW / g
SAR for nominal Body TSL parameters <td>normalized to 1W</td> <td>0.69 mW / g ± 18.8% (k=2)</td>	normalized to 1W	0.69 mW / g ± 18.8% (k=2)
SAR averaged over 10 cm <sup>2</sup> (10 g) of Body TSL <td>Condition</td> <td>0.42 mW / g</td>	Condition	0.42 mW / g
SAR measured	200 mW input power	1.42 mW / g
SAR for nominal Body TSL parameters <td>normalized to 1W</td> <td>0.75 mW / g ± 19.7% (k=2)</td>	normalized to 1W	0.75 mW / g ± 19.7% (k=2)

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**Appendix (Additional assessments outside the scope of CNAS 15010)**

**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	50 Ohm ± 0.3 Ohm
Return Loss	> 28.4 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	50 Ohm ± 2.2 Ohm
Return Loss	> 30.9 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.18 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard serrated coaxial cable. The center conductor of the feeding line is closely connected to the second arm of the dipole. The antenna is therefore shielded by DC signals. On some of the dipole, small metal caps are added to the dipole arms in order to improve matching when placed according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by the change. The overall dipole length is still according to the Standard. No excessive force should be applied to the dipole arms, because they might lead to the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

Manufactured by:	OPUS
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D750V3 Sn:1101 (2/2)

