

EX3DV4 - SN:7346 March 30, 2022

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346

**Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/V/m) <sup>2</sup>	0.46	0.47	0.61	± 10.1 %
DCP (mV) <sup>2</sup>	101.4	106.0	106.9	

**Calibration Results for Modulation Response**

UID	Communication System Name	f <sub>0</sub> (MHz)	dB <sub>μV</sub>	α	β	γ	VR (mV)	Max dev.	Max Used (k=2)
0	CW	X: 0.00	0.00	1.00	0.00	0.00	143.5	± 3.0 %	4.4 %
		Y: 0.00	0.00	1.00	0.00	0.00	139.3		
		Z: 0.00	0.00	1.00	0.00	0.00	139.0		
10303-AAA	Pulse Waveform (200Hz, 10%)	X: 3.33	68.90	11.66	10.00	60.0	± 3.5 %	± 9.6 %	
		Y: 4.03	70.70	12.35	60.0				
		Z: 1.63	61.25	6.76	60.0				
10303-AAA	Pulse Waveform (200Hz, 20%)	X: 3.00	70.65	11.31	6.99	60.0	± 2.4 %	± 9.6 %	
		Y: 11.51	81.32	14.72	86.0				
		Z: 9.83	69.60	5.11	60.0				
10304-AAA	Pulse Waveform (200Hz, 40%)	X: 7.41	78.85	12.51	3.98	60.0	± 2.7 %	± 9.6 %	
		Y: 26.03	81.62	15.51	95.0				
		Z: 0.18	136.38	0.01	95.0				
10305-AAA	Pulse Waveform (200Hz, 60%)	X: 2.27	75.13	9.52	2.22	120.0	± 1.7 %	± 9.6 %	
		Y: 20.00	91.58	16.29	120.0				
		Z: 7.54	156.51	16.87	120.0				
10307-AAA	QPSK Waveform, 1 MHz	X: 1.47	64.88	13.82	1.00	150.0	± 4.2 %	± 9.6 %	
		Y: 1.56	66.27	14.65	0.00	150.0			
		Z: 0.45	61.88	11.05	150.0				
10308-AAA	QPSK Waveform, 10 MHz	X: 1.56	66.27	14.65	0.00	150.0	± 1.1 %	± 9.6 %	
		Y: 2.06	67.33	15.38	150.0				
		Z: 2.41	64.75	13.38	150.0				
10306-AAA	64-QAM Waveform, 100 MHz	X: 2.63	69.51	18.25	3.01	150.0	± 1.0 %	± 9.6 %	
		Y: 2.74	70.81	19.04	150.0				
		Z: 1.70	64.72	15.99	150.0				
10309-AAA	64-QAM Waveform, 40 MHz	X: 3.38	66.97	15.25	0.00	150.0	± 2.0 %	± 9.6 %	
		Y: 3.38	66.97	15.25	150.0				
		Z: 2.70	65.72	14.74	150.0				
10414-AAA	WLAN CCK4, 64-QAM, 40MHz	X: 4.11	65.35	15.27	0.00	150.0	± 3.6 %	± 9.6 %	
		Y: 4.70	65.54	15.41	150.0				
		Z: 3.83	66.16	15.38	150.0				

Note: For details on UID parameters see Appendix.

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%.

\* The uncertainties of Norm, X, Y, Z do not affect the E<sub>1</sub> field uncertainty inside TSI, see Pages 5 and 6.  
 \* Numerical truncation parameter, uncertainty not required.  
 \* Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

Certificate No: EX3-7346\_Mar22 Page 3 of 34

EX3DV4 - SN:7346 March 30, 2022

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346

**Sensor Model Parameters**

CT	C2	α	T1	T2	T3	T4	T5	T6
f <sub>0</sub>	f <sub>0</sub>	ms V <sup>-1</sup>	ms V <sup>-1</sup>	ms	ms	ms	ms	ms
X	39.3	291.80	35.10	5.63	0.03	5.02	1.42	0.12
Y	37.1	270.84	34.12	6.29	0.00	5.01	1.82	0.05
Z	9.7	69.74	33.37	4.96	0.00	4.94	0.61	0.00

**Other Probe Parameters**

Sensor Arrangement	Triangular
Connector Angle (°)	-166.1
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

Note: Measurement distance from surface can be increased to 3-4 mm for an Area Scan job.

Certificate No: EX3-7346\_Mar22 Page 4 of 34

EX3DV4 - SN:7346 March 30, 2022

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346

**Calibration Parameter Determined in Head Tissue Simulating Media**

f (MHz)	Relative Permittivity <sup>1</sup>	Conductivity (S/m) <sup>2</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>3</sup>	Depth <sup>4</sup> (mm)	Unc (k=2)
750	41.9	0.89	10.56	10.56	10.56	0.55	0.85	± 12.0 %
835	41.5	0.90	10.12	10.12	10.12	0.42	0.96	± 12.0 %
900	41.5	0.97	10.10	10.10	10.10	0.53	0.80	± 12.0 %
1450	40.5	1.20	9.26	9.26	9.26	0.50	0.80	± 12.0 %
1750	40.1	1.37	8.83	8.83	8.83	0.34	0.86	± 12.0 %
1900	40.0	1.40	8.48	8.48	8.48	0.35	0.86	± 12.0 %
2000	40.0	1.40	8.35	8.35	8.35	0.34	0.86	± 12.0 %
2300	39.5	1.67	7.86	7.86	7.86	0.39	0.90	± 12.0 %
2450	39.2	1.80	7.63	7.63	7.63	0.41	0.90	± 12.0 %
2800	39.0	1.96	7.33	7.33	7.33	0.44	0.90	± 12.0 %
3300	38.2	2.71	7.15	7.15	7.15	0.30	1.35	± 13.1 %
3500	37.9	2.91	7.14	7.14	7.14	0.30	1.35	± 13.1 %
3700	37.7	3.12	6.85	6.85	6.85	0.30	1.35	± 13.1 %
3900	37.5	3.32	6.71	6.71	6.71	0.40	1.60	± 13.1 %
4100	37.2	3.53	6.58	6.58	6.58	0.40	1.60	± 13.1 %
4200	37.1	3.63	6.30	6.30	6.30	0.40	1.70	± 13.1 %
4400	36.9	3.84	6.24	6.24	6.24	0.40	1.70	± 13.1 %
4600	36.7	4.04	6.11	6.11	6.11	0.40	1.70	± 13.1 %
4800	36.4	4.25	6.08	6.08	6.08	0.40	1.80	± 13.1 %
4950	36.3	4.40	5.84	5.84	5.84	0.40	1.80	± 13.1 %
5200	36.0	4.66	5.25	5.25	5.25	0.40	1.80	± 13.1 %
5300	35.9	4.76	5.12	5.12	5.12	0.40	1.80	± 13.1 %
5500	35.6	4.98	4.85	4.85	4.85	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.70	4.70	4.70	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.75	4.75	4.75	0.40	1.80	± 13.1 %

<sup>1</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency sets.  
<sup>2</sup> At frequencies 0-10 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if equal compensation formula is applied to measured GPR values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.  
<sup>3</sup> Alpha/Depth are determined during calibration. SFEAD warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz, below ± 2% for frequencies between 3-6 GHz, and below ± 4% for frequencies between 6-10 GHz at any distance larger than half the probe tip diameter from the boundary.  
<sup>4</sup> Alpha/Depth are determined during calibration. SFEAD warrants that the remaining deviation due to the boundary effect after compensation is always less than 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

Certificate No: EX3-7346\_Mar22 Page 5 of 34

EX3DV4 - SN:7346 March 30, 2022

### DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346

**Calibration Parameter Determined in Head Tissue Simulating Media**

f (MHz)	Relative Permittivity <sup>1</sup>	Conductivity (S/m) <sup>2</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>3</sup>	Depth <sup>4</sup> (mm)	Unc (k=2)
6500	34.5	6.07	5.30	5.30	5.30	0.20	2.50	± 18.6 %

<sup>1</sup> Frequency validity above 6GHz is ± 700 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency sets.  
<sup>2</sup> At frequencies 0-10 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if equal compensation formula is applied to measured GPR values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.  
<sup>3</sup> Alpha/Depth are determined during calibration. SFEAD warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz, below ± 2% for frequencies between 3-6 GHz, and below ± 4% for frequencies between 6-10 GHz at any distance larger than half the probe tip diameter from the boundary.  
<sup>4</sup> Alpha/Depth are determined during calibration. SFEAD warrants that the remaining deviation due to the boundary effect after compensation is always less than 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

Certificate No: EX3-7346\_Mar22 Page 6 of 34

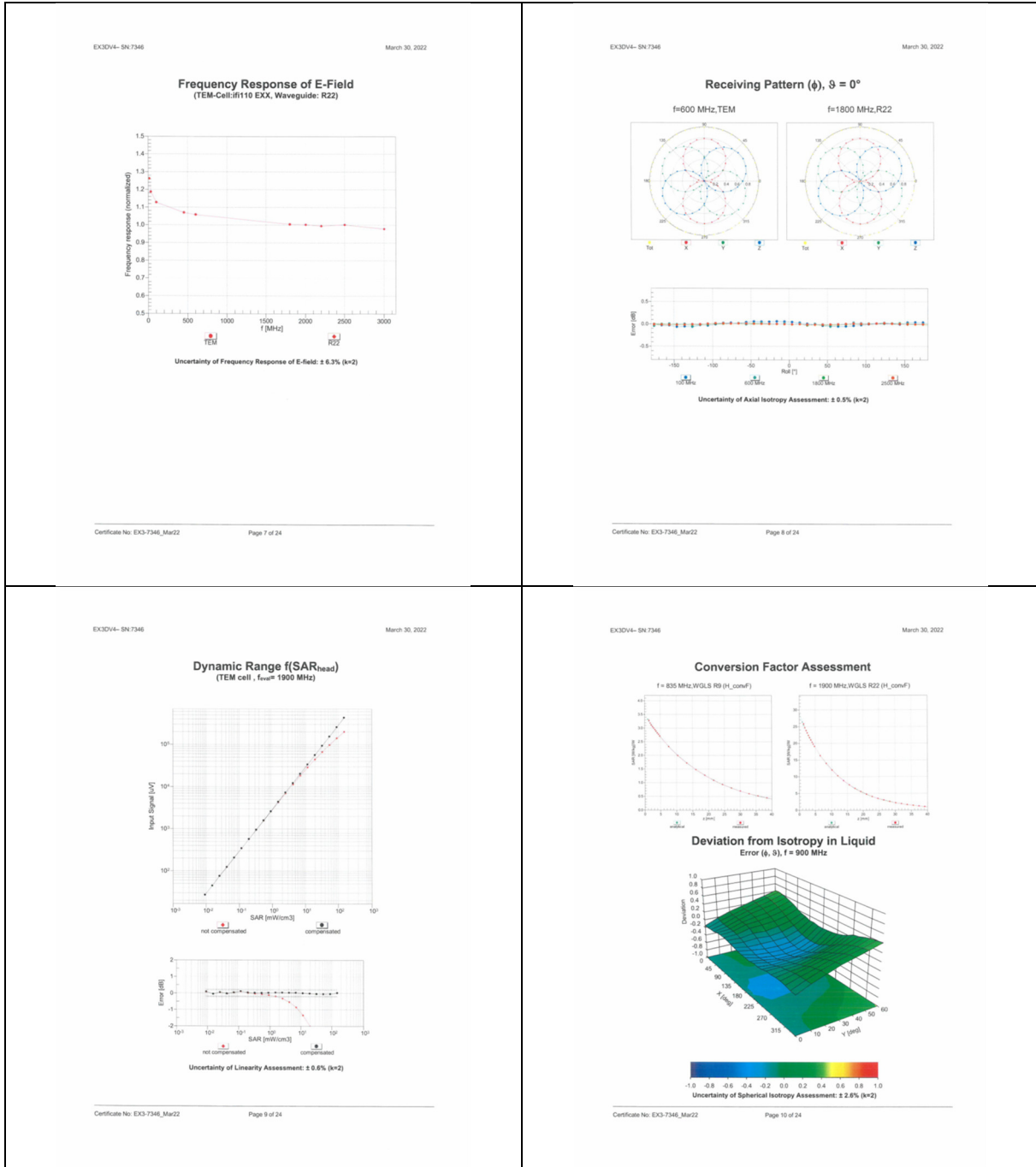


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN\_Doccheck@sgs.com

No.10, Weyue Road, Innovation Park, Kunshan, Jiangsu, China 215300  
 中国·江苏·昆山市留学生创业园伟业路10号 邮编 215300

t(86-512)57355888 f(86-512)57370818 www.sgsgroup.com.cn  
 t(86-512)57355888 f(86-512)57370818 sgs.china@sgs.com



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

**Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300  
 中国·江苏·昆山市留学院创业园伟业路10号 邮编 215300

t(86-512)57355888 f(86-512)57370818 www.sgs.com.cn  
 t(86-512)57355888 f(86-512)57370818 sgs.china@sgs.com



Table with columns: UID, Rev, Communication System Name, Group, PAIR, Unit, and test results for EX3V4-SN-7346. Includes sub-header 'Appendix: Modulation Calibration Parameters'.

Table with columns: UID, Rev, Communication System Name, Group, PAIR, Unit, and test results for EX3V4-SN-7346. Continuation of the test results table.

Table with columns: UID, Rev, Communication System Name, Group, PAIR, Unit, and test results for EX3V4-SN-7346. Continuation of the test results table.

Table with columns: UID, Rev, Communication System Name, Group, PAIR, Unit, and test results for EX3V4-SN-7346. Continuation of the test results table.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx... Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.10, Weyue Road, Innovation Park, Kunshan, Jiangsu, China 215300 (86-512)57355888 (86-512)57370818 www.sgsgrupp.com.cn 中国·江苏·昆山市留学生创业园伟业路10号 邮编 215300 (86-512)57355888 (86-512)57370818 sgschina.com



Table with columns: Reference No., Part No., Description, Test Method, Result, and Date. Includes sub-header EX30V4-SN7346 and March 30, 2022.

Table with columns: Reference No., Part No., Description, Test Method, Result, and Date. Includes sub-header EX30V4-SN7346 and March 30, 2022.

Certificate No: EX3-7346\_Mar22 Page 15 of 24

Certificate No: EX3-7346\_Mar22 Page 16 of 24

Table with columns: Reference No., Part No., Description, Test Method, Result, and Date. Includes sub-header EX30V4-SN7346 and March 30, 2022.

Table with columns: Reference No., Part No., Description, Test Method, Result, and Date. Includes sub-header EX30V4-SN7346 and March 30, 2022.

Certificate No: EX3-7346\_Mar22 Page 17 of 24

Certificate No: EX3-7346\_Mar22 Page 18 of 24



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf... Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com



<p>EX3DV4-SN 7346</p> <p>March 30, 2022</p> <p>15985 AAA SG NR DL (CP-QPDM, TM 3.1, 40 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.54 ± 9.6 %</p> <p>15986 AAA SG NR DL (CP-QPDM, TM 3.1, 50 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.50 ± 9.6 %</p> <p>15987 AAA SG NR DL (CP-QPDM, TM 3.1, 60 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.53 ± 9.6 %</p> <p>15988 AAA SG NR DL (CP-QPDM, TM 3.1, 70 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.38 ± 9.6 %</p> <p>15989 AAA SG NR DL (CP-QPDM, TM 3.1, 80 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.33 ± 9.6 %</p> <p>15990 AAA SG NR DL (CP-QPDM, TM 3.1, 90 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.52 ± 9.6 %</p> <p><small>* Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the test value.</small></p>	<p>EX3DV4-SN 7346</p> <p>March 30, 2022</p> <p>15985 AAA SG NR DL (CP-QPDM, TM 3.1, 40 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.54 ± 9.6 %</p> <p>15986 AAA SG NR DL (CP-QPDM, TM 3.1, 50 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.50 ± 9.6 %</p> <p>15987 AAA SG NR DL (CP-QPDM, TM 3.1, 60 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.53 ± 9.6 %</p> <p>15988 AAA SG NR DL (CP-QPDM, TM 3.1, 70 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.38 ± 9.6 %</p> <p>15989 AAA SG NR DL (CP-QPDM, TM 3.1, 80 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.33 ± 9.6 %</p> <p>15990 AAA SG NR DL (CP-QPDM, TM 3.1, 90 MHz, 64-QAM, 30 MHz) SG NR FR1 TOD 9.52 ± 9.6 %</p> <p><small>* Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the test value.</small></p>
--	--

#### 4 Impedance and return loss

Dipole CLA150 SN 4025				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
2021/4/26	-31.4	/	47.8	/
Dipole D450V3 SN 1103				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
2021/4/21	-23	/	57.1	/



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>; and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN\\_Doccheck@sgs.com](mailto:CN_Doccheck@sgs.com)

No.10, Weiye Road, Innovation Park, Kunshan, Jiangsu, China 215300      t(86-512)57355888      f(86-512)57370818      www.sgsgroup.com.cn  
 中国·江苏·昆山市留学院创业园伟业路10号 邮编 215300      t(86-512)57355888      f(86-512)57370818      sgs.china@sgs.com