

HAC TEST REPORT

< for T-Coil measurement>

Applicant Name	Qisda Corporation
Address of Applicant	157 Shan-Yang Road, Gueishan Taoyuan 333, Taiwan
EUT Type	Mobile Internet Device
Model Number	M01M002
Date of receive	2010.03.04
Date of Test(s)	2010.03.13
Date of Issue	2010.03.18

Standards:

ANSI C63.19-2007

FCC RULE PART(S): 47 CFR PART 20.19(B) HAC RATE CATEGORY: T3 (T Category)

In the configuration tested, the EUT complied with the standards specified above.

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS Taiwan Electronics & Communication Laboratory or testing done by SGS Taiwan Electronics & Communication Laboratory in connection with distribution or use of the product described in this report must be approved by SGS Taiwan Electronics & Communication Laboratory in writing.

Tested by :		Approved by:	nick	rick How		
Ricky Huang	Nick Hsu					
Asst. Supervisor	Date:	2010/03/18	Supervisor	Date:	2010/03/18	
se stated the results shown in this test re 此報告結果僅對測試之樣品負責,同時此				only.		
is issued by the Company subject to its						
bject to Terms and Conditions for Elect					ity, indemnification and jurisdiction is	

docum 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.

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 台灣檢驗科技股份有限公司 t (886-2) 2299-3279 f (886-2) 2298-0488

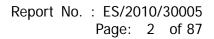
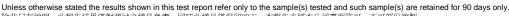




Table of Contents

1. Introduction	3
2. Testing Laboratory	4
3. Details of Applicant	4
4. Description Of EUT	4
5. Test Environment	5
6. System Specifications of DASY4	5
7. Measurement Procedure	8
8. System Verification	9
9. Test Standards and Limits	. 10
10. Instruments List	. 11
11. Summary of Results	. 12
12. Measurement Data	. 15
13. Probe Calibration certificate	. 15
14 Uncertainty Analysis	. 82



除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



1. Introduction

The purpose of the Hearing Aid Compatibility extension is to enable measurements of the near electric and magnetic fields generated by wireless communication devices in the region controlled for use by a hearing aid in accordance with ANSI-C63.19-2007

FCC has granted a request for waiver of the HAC rules in section 20.19 for dual band GSM handsets. The waiver has specific conditions, as stated in the order (FCC 05-166) and expires 1 August 2007.

The purpose of this standard is to establish categories for hearing aids and for WD (wireless) communications devices) that can indicate to health care practitioners and hearing aid users which hearing aids are compatible with which WD, and to provide tests that can be used to assess the electromagnetic characteristics of hearing aids and WD and assign them to these categories. The various parameters required, in order to demonstrate compatibility and accessibility are measured. The design of the standard is such that when a hearing aid and WD achieve one of the categories specified, as measured by the methodology of this standard, the indicated performance is realized.

In order to provide for the usability of a hearing aid with a WD, several factors must be coordinated:

- a) Radio frequency (RF) measurements of the near-field electric and magnetic fields emitted by a WD to categorize these emissions for correlation with the RF immunity of a hearing aid.
- b) Magnetic field measurements of a WD emitted via the audio transducer associated with the T-coil mode of the hearing aid, for assessment of hearing aid performance.
- c) Measurements with the hearing aid and a simulation of the categorized WD T-coil emissions to assess the hearing aid RF immunity in the T-coil mode.

The WD radio frequency (RF) and audio band emissions are measured.

Hence, the following are measurements made for the WD:

- a) RF E-Field emissions
- b) RF H-Field emissions
- c) T-coil mode, magnetic signal strength in the audio band
- d) T-coil mode, magnetic signal and noise articulation index
- e) T-coil mode, magnetic signal frequency response through the audio band

Corresponding to the WD measurements, the hearing aid is measured for:

- a) RF immunity in microphone mode
- b) RF immunity in T-coil mode

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

SGS

2. Testing Laboratory

Company Name	SGS Taiwan Ltd. Electronics & Communication Laboratory
Company address	134, Wu Kung Road, Wuku Industrial Zone Taipei county,
	Taiwan, R.O.C.
Telephone	+886-2-2299-3279
Fax	+886-2-2298-0488
Website	http://www.tw.sgs.com

3. Details of Applicant

Applicant Name	Qisda Corporation
Applicant Address	157 Shan-Ying Road, Gueishan Taoyuan 333, Taiwan
Contact Person	Kun Han Liu
TEL	+886 3 359 5000 Ext. 3704
Fax	+886 3 359 3395
E-mail	Kun.han.liu@qisda.com

4. Description Of EUT

EUT Name	Mobile Internet Device			
FCC ID	5	VRSM01M002		
Model Name	M01M002			
Brand Name	DELL			
Freq. of Operation	GSM /GPRS/EDGE/WCDMA/HSDPA/HSUPA/802.11b+g			
IMEI Code	01221400000230			
Definition	Production unit			
Channel Number	GSM 850	GSM1900	WCDMA B4	
(ARFCN)	128- 251	512- 810	1312- 1513	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



5. Test Environment

Ambient Temperature	22.2° C
Relative Humidity	<60 %

6. System Specifications of DASY4

6.1 Measurement system Diagram for SPEAG Robotic

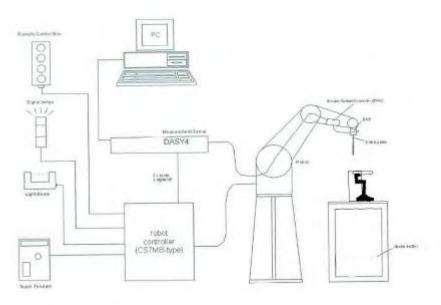


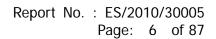
Fig 1. The SPEAG Robotic Diagram

The DASY4 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension is for accommodating the data acquisition electronics (DAE).
- A Audio Magnetic probe.
- 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 between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.





tering, control of the robot operation and fast movement interrupts.

- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 2000 or Windows XP.
- DASY4 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The Test Arch SAM phantom
- The device holder for handheld mobile phones.
- Validation dipole kits allowing to validate the proper functioning of the system.

6.2 Audio Magnetic Probe AM1DV2

Description	- Active single sensor probe for both axial	
Description	0	8
	and radial measurement scans	
	- Fully RF shielded, compatible with DAE,	
	with adapted probe cup	14
Dynamic Range	0.1 KHz to 20 KHz	4
Sensitivity	<-50dB A/m @ 1KHz	
Pre-Amp	40dB	
Dimensions	300X18mm	
		AM1DV2 Audio Probe

6.3 Test Arch

Description	Enables easy and well defined positioning of	
	the phone and validation dipoles as well as	
	simple teaching of the robot.	
Dimensions	length: 370 mm	
	width: 370 mm	
	height: 370 mm	
		Test Arch

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



6.4 AMCC- Audio Magnetic Calibration Coil

Allows calibration of the complete measurement setup, The two horizontal coils create a homogeneous magnetic field in the z direction. Refer to Appendix 5 for more detail on AMCC coil	AMCC B
	AMCC
	measurement setup, The two horizontal coils create a homogeneous magnetic field in the z direction. Refer to Appendix 5 for

6.5 Phone Holder

Description	Supports accurate and reliable positioning of any phone Effect on near field <+/- 0.5 dB	
		Phone Holder

6.6 AMMI - Audio Magnetic Measurement Instrument

0.071111111710	alo magnetie measarement mstrament	
Description	-USB interface to PC	
	- Probe signal digitization and power supply	
	- Test signal generation for wireless device	AMMI
	(via base station simulator)	AMMI AMMI
	- Auto-calibration and interfaces to AMCC	-
	for complete setup-calibration	AMMI
Data Rate	48 KHz / 24bit	
Dynamic Range	85 dB	
Dimensions:	19″ X 65 X 270mm	CIVI

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



7. Measurement Procedure

The sequence of the measurement is T-Coil testing procedure over a wireless communication device:

- 1) Confirm Geometry & signal check. Probe phantom alignment and check of accuracy.
- 2) Background noise measurement in the area of the WD.
- 3) Perform coarse resolution axial scan with narrow band signal. For the three orientation positions, using the optimal ABM1 point from the coarse resolution axial scan, perform fine resolution scans in the area of interest with narrow band signal.
- 4) For the three orientation positions, using the optimal SNR point from corresponding fine resolution area scans, perform point measurement with a narrowband signal – determine ABM1 and SNR. For Axial position, perform point measurement with a broadband signal – determine Frequency Response.
- 5) Speech input level is -18dbm.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



8. System Verification

An Input Level is measured to verify that it is within +/-0.1dB from the Reference Input Level in section 6.3.2.1 of ANSI PC63.19-2007

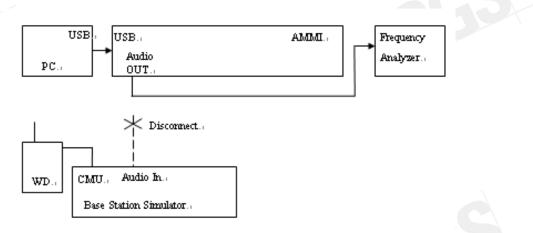


Figure 2: Signal Verification Setup

"Audio Out" of the AMMI is connected to the Bruel & Kjaar 3560C analyzer. On the analyzer, the "Input User ref" is set to the "OdBm Input reference" value to account for CMU's inherent offset values. A signal from AMMI is initiated by running the appropriate DASY template. The template includes both broadband and narrowband signals. The signal is captured on the analyzer. The value from the analyzer is compared to the target given in 6.3.2.1 of ANSI PC63.19-2007. If it is not within +/-0.1dB, the gains setting in the DASY template are adjusted.

Signal Verification has been conducted on the same days as DUT measurements.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



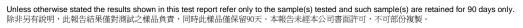
9. Test Standards and Limits

The measurements were performed to ensure compliance to the ANSI PC63.19-2007 standard.

The limit values please follow in Table2

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Table 2: Signal Quality Range



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司



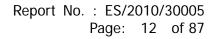
10. Instruments List

+					
	Manufacturer	Device	Туре	Serial Number	Date Of Last Calibration
	Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	547	Jan.22.2010
	Schmid & Partner Engineering AG	Software	DASY 4 V4.7 Build 80	N/A	Calibration isn't necessary
	Schmid & Partner Engineering AG	Audio Magnetic 1D Field Probe	AM1DV2	1030	Apr.23.2009
	Schmid & Partner Engineering AG	ammi se ums	010 AB	1028	Calibration isn't necessary
	Schmid & Partner Engineering AG	AMCC SD HAC	P01 BA	1026	N/A
	Schmid & Partner Engineering AG	Test Arch SD HAC	P01	1047	N/A
	R&S	Radio Communication Test	CMU200	109326	Mar.17.2009
	562			S	GR

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.





11. Summary of Results

Probe Position	Frequency Band (MHz)	Channel	Ambient Noise (dB A/m)	ABM1 (dB A/m)	SNR (dB)	T-coil SNR Rating
		128	-30.68	-5.31	25.4	Т3
Axial (Z)	GSM850	190	-32.65	-7.91	24.7	Т3
		251	-32.09	-6.42	25.7	Т3
		128	-35.27	-12.7	22.7	Т3
Radial (X)	GSM850	190	-34.62	-14.4	20.9	Т3
		251	-35.84	-14.4	22.5	Т3
		128	-41.58	-13.5	28.6	Т3
Radial (Y)	ial (Y) GSM850	190	-41.47	-12.9	28.6	Т3
		251	-41.55	-12.5	29.1	Т3
Freq Resp			P	PASS	2	



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



Report No. : ES/2010/30005 Page: 13 of 87

GSM1900

	Probe Position	Frequency Band (MHz)	Channel	Ambient Noise (dB A/m)	ABM1 (dB A/m)	SNR (dB)	T-coil SNR Rating	
			512	-33.88	-8.10	25.8	Т3	X
	Axial (Z)	GSM1900	661	-32.58	-6.99	25.6	Т3	
			810	-31.82	-6.07	25.8	Т3	
	Radial (X)	al (X) GSM1900	512	-35.45	-12.2	24.8	Т3	
			661	-36.93	-11.3	25.6	Т3	
			810	-36.1	-12.5	24.3	Т3	
			512	-40.38	-13.6	28.5	Т3	
	Radial (Y)	adial (Y) GSM1900	661	-40.42	-13	28.4	Т3	
			810	-40.43	-12.7	28.4	Т3	
	Free	q Resp	C	Р	ASS			



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



Probe Position	Frequency Band (MHz)	Channel	Ambient Noise (dB A/m)	ABM1 (dB A/m)	SNR (dB)	T-coil SNR Rating
		1312	-33.08	-7.06	26	Т3
Axial (Z)	WCDMA B4	1412	35.49	-9.50	26	Т3
		1513	-33.44	-8.08	25.4	Т3
		1312	-36.29	-10.4	26.4	Т3
Radial (X)	WCDMA B4	1412	-36.53	-10.6	26.9	Т3
		1513	-36.56	-10.2	26.5	T3
		1312	-40.56	-11.5	29.5	Т3
Radial (Y) WCDMA E	WCDMA B4	1412	-40.71	-11.3	30.1	Τ4
		1513	-42.66	-16.1	29.1	Т3
Freq Resp			P	ASS		

WCDMA B4

Note: The ABM1, SNR and T-coil Rating results are shown in Section 11. The delta between Ambient Noise measurement and ABM2 measurement should be greater than 10dB. However, in cases where ABM2 is very low, it is suitable for the delta to be less than 10 dB. For the three probe positions, noise spectrum plots for the highest ambient noise, indicated with bold numbers.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.



12. Measurement Data

Date: 2010/3/13

T-Coil_GSM850_CH128

DUT: M01M002;

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -2.32 dB A/m BWC Factor = 0.166978 dB Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1): Measurement grid: dx=10mm, dy=10mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

Report No. : ES/2010/30005 Page: 16 of 87



Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** ABM1 comp = -2.18 dB A/m BWC Factor = 0.166978 dB Location: 0, 0, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** ABM1 comp = -5.31 dB A/m BWC Factor = 10.8 dB Location: 0, 0, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Telephone parameters WD signalCategoryquality [(signal+noise)-to-noise rationin decibels]		
Category T1	0 dB to 10 dB	
Category T2	10 dB to 20 dB	
Category T3	20 dB to 30 dB	
Category T4	> 30 dB	

Cursor: ABM1/ABM2 = 25.4 dBABM1 comp = -5.31 dB A/m

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

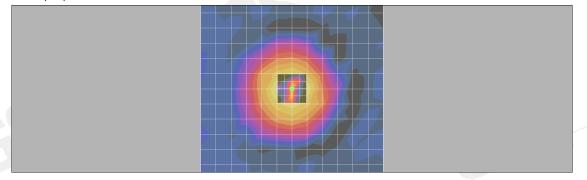
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

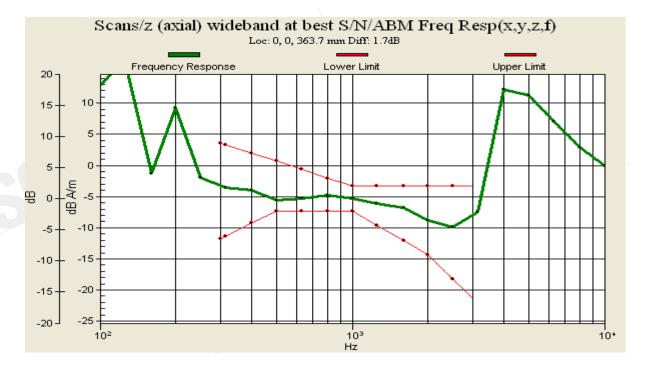


Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** Diff = 1.70 dB BWC Factor = 10.8 dB Location: 0, 0, 363.7 mm



 $0 \, dB = 1.00 \, A/m$



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司



T-Coil_GSM850_CH128

DUT: M01M002;

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -14.4 dB A/m BWC Factor = 0.166978 dB Location: 4.2, 4.2, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.



ABM1 comp = -12.7 dB A/m BWC Factor = 0.166978 dB Location: -8.5, -2.2, 363.7 mm

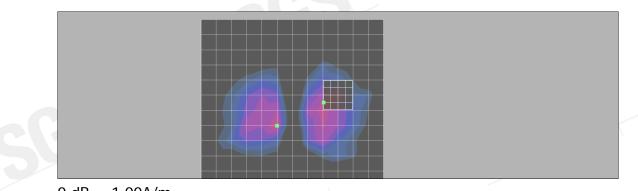
Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal ory quality [(signal+noise)-to-noise ratio in decibels]		
Category T1	0 dB to 10 dB		
Category T2	10 dB to 20 dB		
Category T3	20 dB to 30 dB		
Category T4	> 30 dB		

Cursor:

ABM1/ABM2 = 22.7 dB ABM1 comp = -12.7 dB A/m BWC Factor = 0.166978 dB Location: -8.5, -2.2, 363.7 mm



 $0 \, dB = 1.00 \, A/m$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



T-Coil_GSM850_CH128

DUT: M01M002;

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x_y_z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.4 dB A/m BWC Factor = 0.166978 dB Location: 0, 12.5, 363.7 mm

Scans/y (transversal) fine $2mm 8 \times 8/ABM$ Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.166978 dB

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 t (886-2) 2299-3279

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488



Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.5 dB A/m BWC Factor = 0.166978 dB Location: 2, 10.5, 363.7 mm

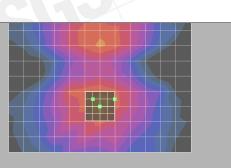
Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]			
Category T1	0 dB to 10 dB			
Category T2	10 dB to 20 dB			
Category T3	20 dB to 30 dB			
Category T4	> 30 dB			

Cursor:

ABM1/ABM2 = 28.6 dB ABM1 comp = -14.5 dB A/m BWC Factor = 0.166978 dB Location: -4, 10.5, 363.7 mm



$0 \, dB = 1.00 A/m$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



T-Coil_GSM850_CH190

DUT: M01M002;

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -4.98 dB A/m BWC Factor = 0.166978 dB Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.166978 dB

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

www.tw.sgs.com



Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor: ABM1 comp = -4.43 dB A/m BWC Factor = 0.166978 dB Location: -2.2, -2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** ABM1 comp = -7.91 dB A/m BWC Factor = 10.8 dB Location: -2.2, 4, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]			
Category T1	0 dB to 10 dB			
Category T2	10 dB to 20 dB			
Category T3	20 dB to 30 dB			
Category T4	> 30 dB			

Cursor:

ABM1/ABM2 = 24.7 dB ABM1 comp = -7.91 dB A/m BWC Factor = 10.8 dB Location: -2.2, 4, 363.7 mm

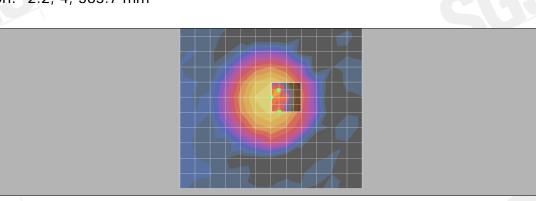
Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 险北口方的时,他都在结果像影响过力接出合意,同時他接出你应知的主。才報告主领大公司主命就可,不可如必该制。

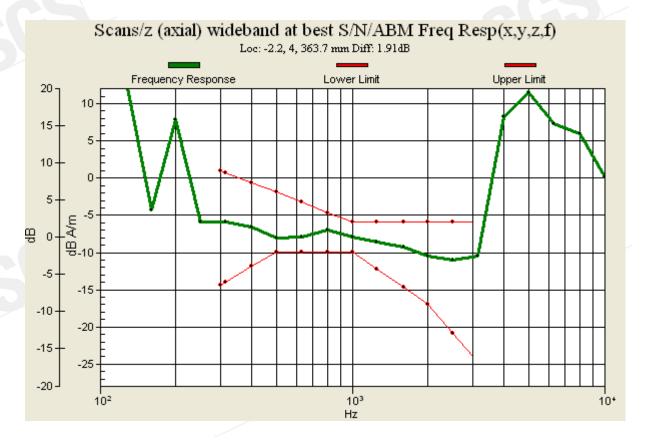
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** Diff = 1.91 dB BWC Factor = 10.8 dB Location: -2.2, 4, 363.7 mm



 $0 \, dB = 1.00 \, A/m$



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

 Ltd.
 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號

 公司
 t (886-2) 2299-3279
 f (886-2) 2298-0488
 www.tw.sgs.com



T-Coil_GSM850_CH190

DUT: M01M002;

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.5 dB A/m BWC Factor = 0.166978 dB Location: -8.3, 4.2, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.



ABM1 comp = -14.4 dB A/m BWC Factor = 0.166978 dB Location: -8.3, 6.2, 363.7 mm

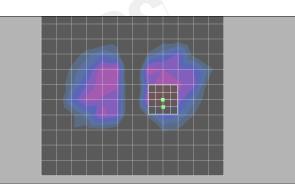
Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

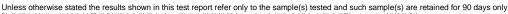
Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]			
Category T1	0 dB to 10 dB			
Category T2	10 dB to 20 dB			
Category T3	20 dB to 30 dB			
Category T4	> 30 dB			

Cursor:

ABM1/ABM2 = 20.9 dB ABM1 comp = -14.4 dB A/m BWC Factor = 0.166978 dB Location: -8.3, 6.2, 363.7 mm



$0 \, dB = 1.00 \, A/m$



除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



T-Coil_GSM850_CH190

DUT: M01M002;

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x_y_z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.9 dB A/m BWC Factor = 0.166978 dB Location: 4.2, -4.2, 363.7 mm

Scans/y (transversal) fine $2mm 8 \times 8/ABM$ Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.166978 dB

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.



Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -12.9 dB A/m BWC Factor = 0.166978 dB Location: 0.2, -6.2, 363.7 mm

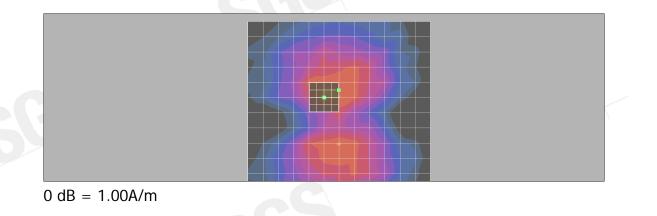
Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Telephone parameters WD signalCategoryquality [(signal+noise)-to-noise ratiin decibels]			
Category T1	0 dB to 10 dB		
Category T2	10 dB to 20 dB		
Category T3	20 dB to 30 dB		
Category T4	> 30 dB		

Cursor:

ABM1/ABM2 = 28.6 dB ABM1 comp = -12.9 dB A/m BWC Factor = 0.166978 dB Location: 0.2, -6.2, 363.7 mm



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



T-Coil_GSM850_CH251

DUT: M01M002;

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.165018 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -5.06 dB A/m BWC Factor = 0.165018 dB Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.165018 dB

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.



Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor: ABM1 comp = -3.46 dB A/m BWC Factor = 0.165018 dB Location: -2.2, 2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mmSignal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm Cursor: ABM1 comp = -6.42 dB A/m BWC Factor = 10.8 dB Location: -2.2, 2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 25.7 dBABM1 comp = -6.42 dB A/m BWC Factor = 10.8 dB Location: -2.2, 2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

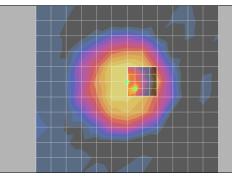
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

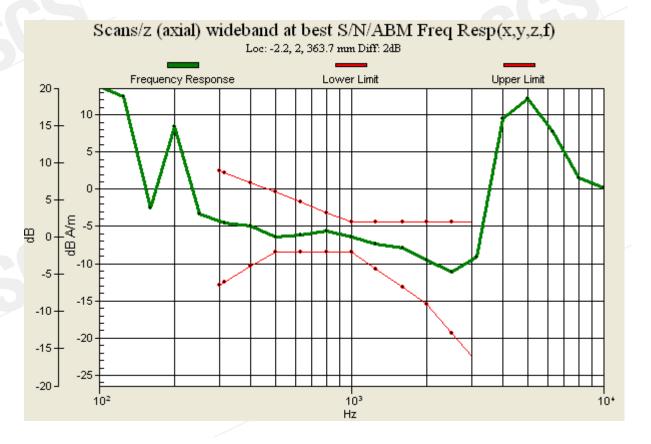
Report No. : ES/2010/30005 Page: 31 of 87

Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** Diff = 2.00 dB BWC Factor = 10.8 dB Location: -2.2, 2, 363.7 mm





 $0 \, dB = 1.00 A/m$



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司



T-Coil_GSM850_CH251

DUT: M01M002;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.165018 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.4 dB A/m BWC Factor = 0.165018 dB Location: 8.3, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.165018 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.



ABM1 comp = -14.4 dB A/m BWC Factor = 0.165018 dB Location: -8.3, 6.2, 363.7 mm

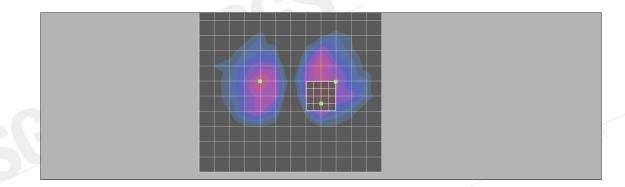
Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.165018 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 22.5 dB ABM1 comp = -14.6 dB A/m BWC Factor = 0.165018 dB Location: -12.3, 0.2, 363.7 mm



$0 \, dB = 1.00 A/m$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



T-Coil_GSM850_CH251

DUT: M01M002;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.165018 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.3 dB A/m BWC Factor = 0.165018 dB Location: 0, -8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.165018 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.



ABM1 comp = -12.5 dB A/m BWC Factor = 0.165018 dB Location: 0, -6.3, 363.7 mm

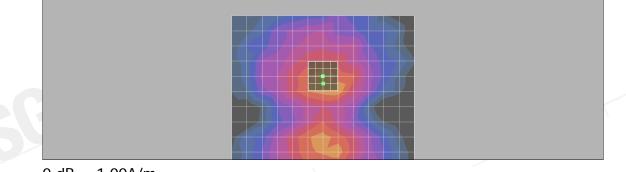
Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

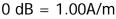
Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.165018 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 29.1 dB ABM1 comp = -12.5 dB A/m BWC Factor = 0.165018 dB Location: 0, -6.3, 363.7 mm





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.



T-Coil_GSM1900_CH512

DUT: M01M002;

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -5.45 dB A/m BWC Factor = 0.169959 dB Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.



ABM1 comp = -3.96 dB A/m BWC Factor = 0.169959 dBLocation: 2, 2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mmSignal Type: Audio File (.wav) 48k voice 300-3000 2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm Cursor: ABM1 comp = -8.10 dB A/mBWC Factor = 10.8 dBLocation: -4, 2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mmSignal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 25.8 dBABM1 comp = -8.10 dB A/mBWC Factor = 10.8 dB Location: -4, 2, 363.7 mm

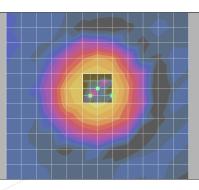
Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k voice 300-3000 2s.wav

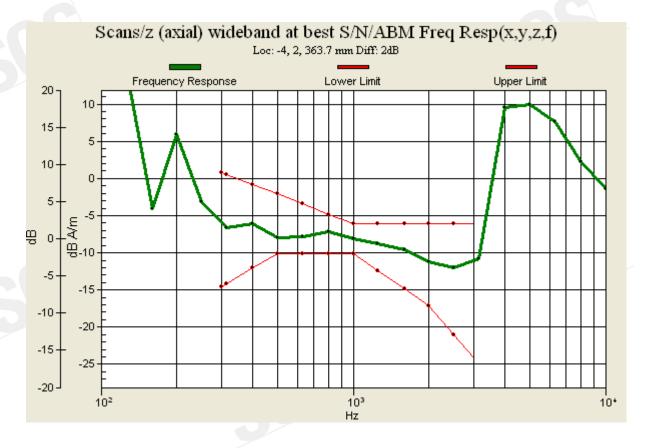
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製



Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** Diff = 2.00 dB BWC Factor = 10.8 dB Location: -4, 2, 363.7 mm



 $0 \, dB = 1.00 A/m$



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

 Ltd.
 No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路 134 號

 公司
 t (886-2) 2299-3279
 f (886-2) 2298-0488
 www.tw.sgs.com



T-Coil_GSM1900_CH512

DUT: M01M002;

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -12.5 dB A/m BWC Factor = 0.169959 dB Location: 4.2, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -12.2 dB A/m BWC Factor = 0.169959 dB Location: -8.5, 4.2, 363.7 mm

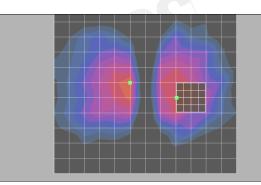
Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

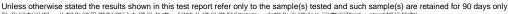
Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 24.8 dB ABM1 comp = -12.2 dB A/m BWC Factor = 0.169959 dB Location: -8.5, 4.2, 363.7 mm



$0 \, dB = 1.00 \, A/m$



除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



T-Coil_GSM1900_CH512

DUT: M01M002;

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.2 dB A/m BWC Factor = 0.169959 dB Location: -4.2, 8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -13.6 dB A/m BWC Factor = 0.169959 dB Location: -0.2, 12.3, 363.7 mm

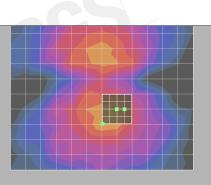
Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 28.5 dB ABM1 comp = -14.9 dB A/m BWC Factor = 0.169959 dB Location: -6.2, 8.3, 363.7 mm



$0 \, dB = 1.00 \, A/m$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_GSM1900_CH661

DUT: M01M002;

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -6.25 dB A/m BWC Factor = 0.169959 dB Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -4.43 dB A/m BWC Factor = 0.169959 dB Location: 0, 4.3, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** ABM1 comp = -6.99 dB A/m BWC Factor = 10.8 dB Location: 0, 4.3, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 25.6 dB ABM1 comp = -6.99 dB A/m BWC Factor = 10.8 dB Location: 0, 4.3, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):

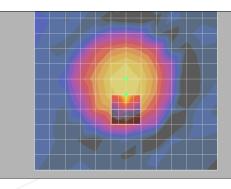
Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 险北口方的时, 应超化结用体影响于之样已合素, 同時世绪已体见如何子, 大超化土细大公司事品就可, 天可如心旋制。

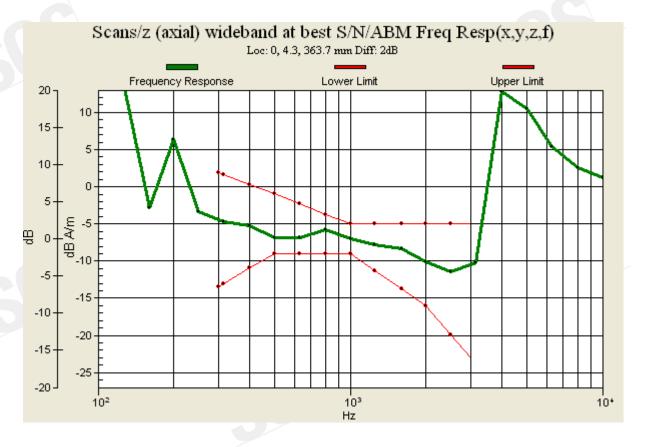
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm Cursor: Diff = 2.00 dBBWC Factor = 10.8 dB Location: 0, 4.3, 363.7 mm



 $0 \, dB = 1.00 \, A/m$



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_GSM1900_CH661

DUT: M01M002;

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -14.0 dB A/m BWC Factor = 0.169959 dB Location: -8.3, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -11.3 dB A/m BWC Factor = 0.169959 dB Location: -8.5, -0.2, 363.7 mm

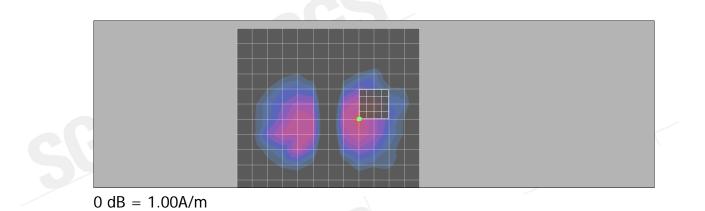
Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 25.6 dBABM1 comp = -11.3 dB A/m BWC Factor = 0.169959 dBLocation: -8.5, -0.2, 363.7 mm



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_GSM1900_CH661

DUT: M01M002;

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -11.7 dB A/m BWC Factor = 0.169959 dB Location: 0, 8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -13.0 dB A/m BWC Factor = 0.169959 dB Location: 0, 6.3, 363.7 mm

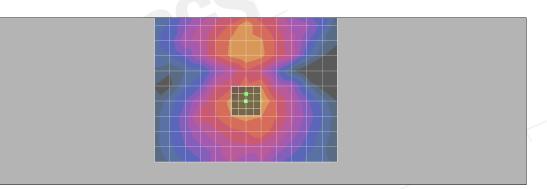
Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 28.4 dB ABM1 comp = -13.0 dB A/m BWC Factor = 0.169959 dB Location: 0, 6.3, 363.7 mm



$0 \, dB = 1.00 A/m$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



T-Coil_GSM1900_CH810

DUT: M01M002;

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169022 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -5.70 dB A/m BWC Factor = 0.169022 dB Location: 4.2, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169022 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -4.09 dB A/m BWC Factor = 0.169022 dBLocation: 0.2, -2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mmSignal Type: Audio File (.wav) 48k voice 300-3000 2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm Cursor: ABM1 comp = -6.07 dB A/m BWC Factor = 10.8 dB Location: 0.2, -2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mmSignal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 25.8 dBABM1 comp = -6.07 dB A/m BWC Factor = 10.8 dB Location: 0.2, -2, 363.7 mm

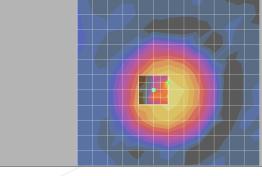
Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k voice 300-3000 2s.wav

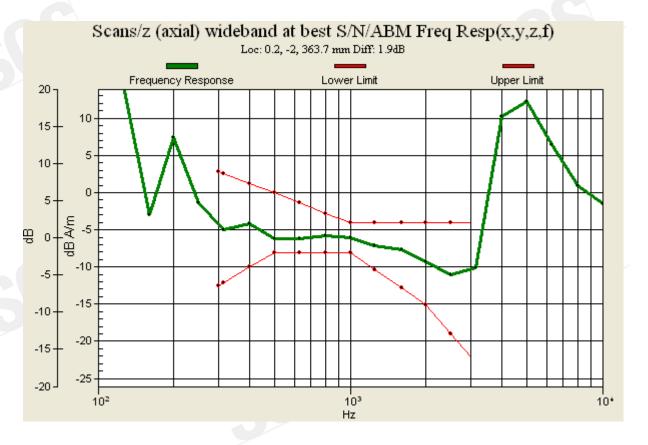
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製



Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** Diff = 1.90 dB BWC Factor = 10.8 dB Location: 0.2, -2, 363.7 mm



 $0 \, dB = 1.00 A/m$



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_GSM1900_CH810

DUT: M01M002;

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169022 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -12.4 dB A/m BWC Factor = 0.169022 dB Location: 8.3, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169022 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -12.5 dB A/m BWC Factor = 0.169022 dB Location: -10.5, 2, 363.7 mm

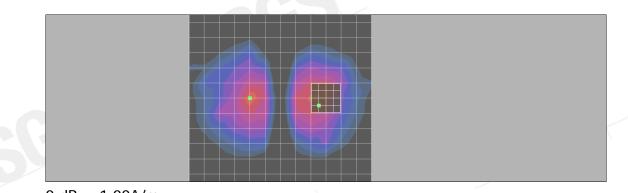
Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

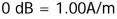
Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169022 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 24.3 dB ABM1 comp = -12.5 dB A/m BWC Factor = 0.169022 dB Location: -10.5, 2, 363.7 mm





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_GSM1900_CH810

DUT: M01M002;

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169022 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -11.9 dB A/m BWC Factor = 0.169022 dB Location: 0, 8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169022 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -12.7 dB A/m BWC Factor = 0.169022 dB Location: 2, 10.3, 363.7 mm

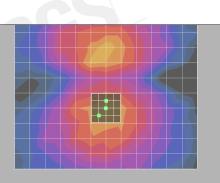
Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169022 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 28.4 dB ABM1 comp = -13.0 dB A/m BWC Factor = 0.169022 dB Location: 0, 6.3, 363.7 mm



$0 \, dB = 1.00 \, A/m$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_WCDMA B4_CH1312

DUT: M01M002;

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -5.12 dB A/m BWC Factor = 0.166978 dB Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -2.64 dB A/m BWC Factor = 0.166978 dB Location: -2, 0.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mmSignal Type: Audio File (.wav) 48k voice 300-3000 2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm Cursor: ABM1 comp = -7.06 dB A/m BWC Factor = 10.8 dB Location: -2, 0.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mmSignal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 26.0 dBABM1 comp = -7.06 dB A/m BWC Factor = 10.8 dB Location: -2, 0.2, 363.7 mm

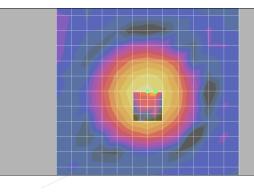
Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k voice 300-3000 2s.wav

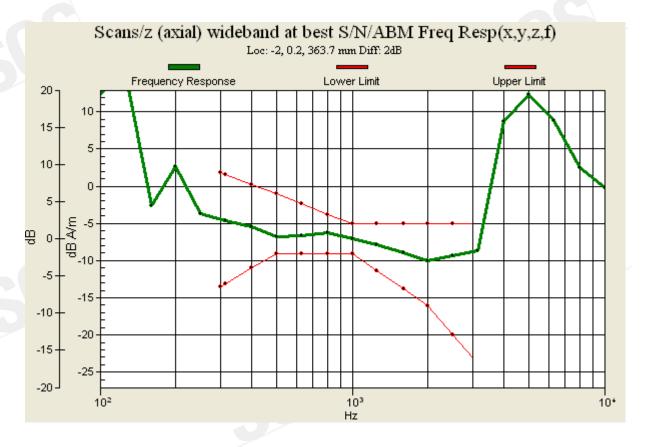
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製



Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm Cursor: Diff = 2.00 dBBWC Factor = 10.8 dB Location: -2, 0.2, 363.7 mm



 $0 \, dB = 1.00 \, A/m$



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



T-Coil_WCDMA B4_CH1312

DUT: M01M002;

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.5 dB A/m BWC Factor = 0.166978 dB Location: -8.3, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -10.4 dB A/m BWC Factor = 0.166978 dB Location: -8.3, 2, 363.7 mm

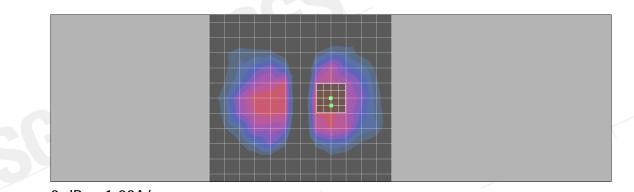
Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

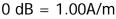
Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 26.4 dB ABM1 comp = -10.4 dB A/m BWC Factor = 0.166978 dB Location: -8.3, 2, 363.7 mm





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_WCDMA B4_CH1312

DUT: M01M002;

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -11.6 dB A/m BWC Factor = 0.166978 dB Location: 0, -8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -11.5 dB A/m BWC Factor = 0.166978 dB Location: 2, -6.3, 363.7 mm

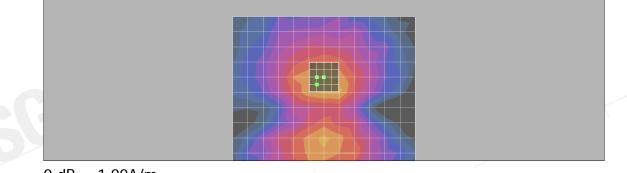
Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.166978 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:

ABM1/ABM2 = 29.5 dB ABM1 comp = -11.9 dB A/m BWC Factor = 0.166978 dB Location: 2, -8.3, 363.7 mm



$0 \, dB = 1.00 \, A/m$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_WCDMA B4_CH1412

DUT: M01M002;

Communication System: WCDMA BAND4; Frequency: 1732.4 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -4.69 dB A/m BWC Factor = 0.169959 dB Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -4.49 dB A/m BWC Factor = 0.169959 dB Location: -0.2, 0.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm **Cursor:** ABM1 comp = -9.50 dB A/m BWC Factor = 10.8 dB Location: -0.2, 6.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: 0ms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]				
Category T1	0 dB to 10 dB				
Category T2	10 dB to 20 dB				
Category T3	20 dB to 30 dB				
Category T4	> 30 dB				

Cursor:

ABM1/ABM2 = 26.0 dB ABM1 comp = -9.50 dB A/m BWC Factor = 10.8 dB Location: -0.2, 6.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):

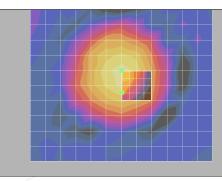
Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

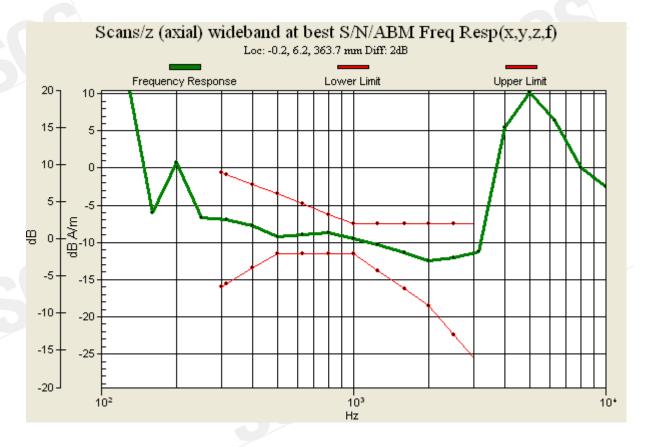
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm Cursor: Diff = 2.00 dBBWC Factor = 10.8 dB Location: -0.2, 6.2, 363.7 mm



 $0 \, dB = 1.00 \, A/m$



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

GS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



T-Coil_WCDMA B4_CH1412

DUT: M01M002;

Communication System: WCDMA BAND4; Frequency: 1732.4 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -11.5 dB A/m BWC Factor = 0.169959 dB Location: -8.3, 4.2, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -10.6 dB A/m BWC Factor = 0.169959 dB Location: -8.3, 2.2, 363.7 mm

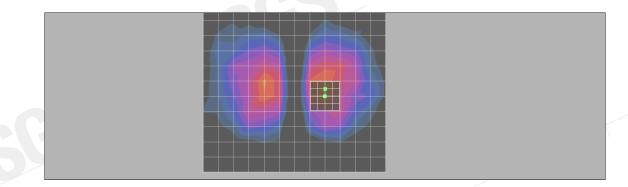
Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]			
Category T1	0 dB to 10 dB			
Category T2	10 dB to 20 dB			
Category T3	20 dB to 30 dB			
Category T4	> 30 dB			

Cursor:

ABM1/ABM2 = 26.9 dB ABM1 comp = -10.6 dB A/m BWC Factor = 0.169959 dB Location: -8.3, 2.2, 363.7 mm



$0 \, dB = 1.00 \, A/m$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_WCDMA B4_CH1412

DUT: M01M002;

Communication System: WCDMA BAND4; Frequency: 1732.4 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -12.9 dB A/m BWC Factor = 0.169959 dB Location: -4.2, -4.2, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -11.3 dB A/m BWC Factor = 0.169959 dB Location: -2.2, -6.2, 363.7 mm

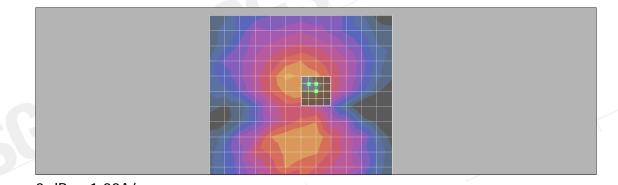
Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

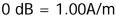
Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]			
Category T1	0 dB to 10 dB			
Category T2	10 dB to 20 dB			
Category T3	20 dB to 30 dB			
Category T4	> 30 dB			

Cursor:

ABM1/ABM2 = 30.1 dB ABM1 comp = -12.5 dB A/m BWC Factor = 0.169959 dB Location: -4.2, -6.2, 363.7 mm





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_WCDMA B4_CH1513

DUT: M01M002;

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -4.43 dB A/m BWC Factor = 0.169959 dB Location: 4.2, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -3.85 dB A/m BWC Factor = 0.169959 dBLocation: 2.2, -2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mmSignal Type: Audio File (.wav) 48k voice 300-3000 2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm Cursor: ABM1 comp = -8.08 dB A/mBWC Factor = 10.8 dB Location: 2.2, -2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mmSignal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav Output Gain: 80.084 Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]				
Category T1	0 dB to 10 dB				
Category T2	10 dB to 20 dB				
Category T3	20 dB to 30 dB				
Category T4	> 30 dB				

Cursor:

ABM1/ABM2 = 25.4 dBABM1 comp = -8.08 dB A/mBWC Factor = 10.8 dB Location: 2.2, -2, 363.7 mm

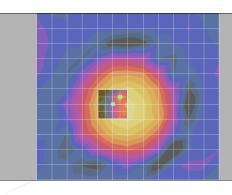
Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k voice 300-3000 2s.wav

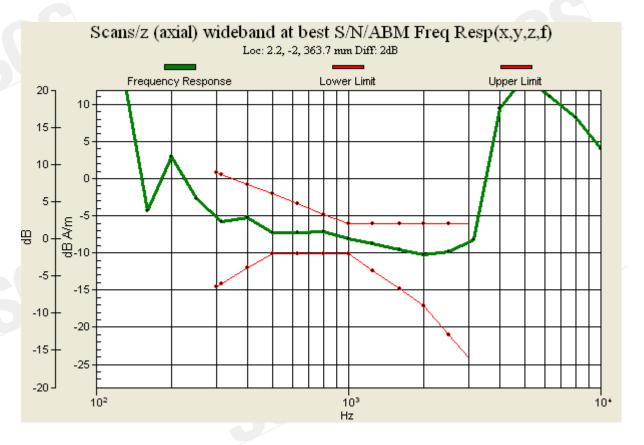
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製



Measure Window Start: Oms Measure Window Length: 2000ms BWC applied: 10.8 dB Device Reference Point: 0.000, 0.000, 353.7 mm Cursor: Diff = 2.00 dBBWC Factor = 10.8 dB Location: 2.2, -2, 363.7 mm



 $0 \, dB = 1.00 \, A/m$



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

GS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488



T-Coil_WCDMA B4_CH1513

DUT: M01M002;

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.1 dB A/m BWC Factor = 0.169959 dB Location: -8.3, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -10.2 dB A/m BWC Factor = 0.169959 dB Location: -6.3, 2, 363.7 mm

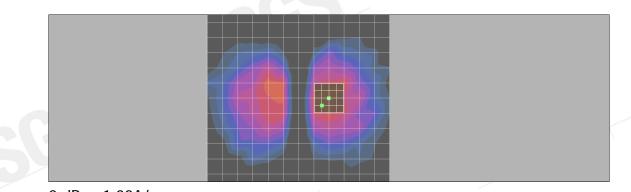
Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

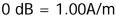
Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]			
Category T1	0 dB to 10 dB			
Category T2	10 dB to 20 dB			
Category T3	20 dB to 30 dB			
Category T4	> 30 dB			

Cursor:

ABM1/ABM2 = 26.5 dB ABM1 comp = -10.2 dB A/m BWC Factor = 0.169959 dB Location: -6.3, 2, 363.7 mm





Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



T-Coil_WCDMA B4_CH1513

DUT: M01M002;

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: AMB with Coil Section

DASY4 Configuration:

- Probe: AM1DV2 1030; ; Calibrated: 2009/4/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/1/22
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:

ABM1 comp = -13.2 dB A/m BWC Factor = 0.169959 dB Location: 4.2, -4.2, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: 0ms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



ABM1 comp = -16.1 dB A/m BWC Factor = 0.169959 dB Location: -4.3, 8.5, 363.7 mm

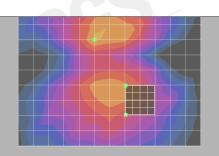
Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav Output Gain: 40.892 Measure Window Start: Oms Measure Window Length: 1000ms BWC applied: 0.169959 dB Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]			
Category T1	0 dB to 10 dB			
Category T2	10 dB to 20 dB			
Category T3	20 dB to 30 dB			
Category T4	> 30 dB			

Cursor:

ABM1/ABM2 = 29.1 dBABM1 comp = -17.0 dB A/m BWC Factor = 0.169959 dBLocation: -4.3, 16.5, 363.7 mm



$0 \, dB = 1.00 \, A/m$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. 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.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com

13. Probe Calibration certificate

SGS

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zu	ory of	ACC MRA	 Schweizerischer Kalibrierdiens Service suisse d'étalonnage Servizio svizzero di taratura Swiss Calibration Service
Accredited by the Swiss Accred The Swiss Accreditation Serv Multilateral Agreement for the	rice is one of the signatories	s to the EA	tation No.: SCS 108
Client SGS - TW (A			ate No: DAE4-547_Jan10
CALIBRATION	CERTIFICATE		
Object	DAE4 - SD 000 D	004 BJ - SN: 547	
Calibration procedure(s)	QA CAL-06.v12 Calibration procee	dure for the data acquisition	electronics (DAE)
Calibration date:	January 22, 2010		
The measurements and the un	ncertainties with confidence pr	onal standards, which realize the physi obability are given on the following pag y facility: environment temperature (22	es and are part of the certificate.
The measurements and the un All calibrations have been con Calibration Equipment used (M	acertainties with confidence pr ducted in the closed laborator 1&TE critical for calibration)	obability are given on the following pages of a second sec	ges and are part of the certificate. ± 3)°C and humidity < 70%.
The measurements and the un All calibrations have been con	acertainties with confidence pr ducted in the closed laboration 1&TE critical for calibration) ID #	obability are given on the following page	es and are part of the certificate.
The measurements and the un All calibrations have been con Calibration Equipment used (M Primary Standards Keithley Multimeter Type 2001	Acertainties with confidence pr ducted in the closed laboratory M&TE critical for calibration) ID # SN: 0810278	Cal Date (Certificate No.) 1-Oct-09 (No: 9055)	tes and are part of the certificate. ± 3)°C and humidity < 70%. Scheduled Calibration Oct-10
The measurements and the un All calibrations have been con Calibration Equipment used (M Primary Standards	Acertainties with confidence pr ducted in the closed laboratory A&TE critical for calibration) ID # SN: 0810278 ID #	obability are given on the following page y facility: environment temperature (22 Cal Date (Certificate No.)	es and are part of the certificate. ± 3)°C and humidity < 70%. Scheduled Calibration
The measurements and the un All calibrations have been con Calibration Equipment used (M Primary Standards Keithley Multimeter Type 2001 Secondary Standards	Acertainties with confidence pr ducted in the closed laboratory A&TE critical for calibration) ID # SN: 0810278 ID #	obability are given on the following page y facility: environment temperature (22 Cal Date (Certificate No.) 1-Oct-09 (No: 9055) Check Date (in house)	tes and are part of the certificate. ± 3)°C and humidity < 70%. Scheduled Calibration Oct-10 Scheduled Check
The measurements and the un All calibrations have been con Calibration Equipment used (M Primary Standards Keithley Multimeter Type 2001 Secondary Standards	Acertainties with confidence pr ducted in the closed laboratory A&TE critical for calibration) ID # SN: 0810278 ID #	obability are given on the following page y facility: environment temperature (22 Cal Date (Certificate No.) 1-Oct-09 (No: 9055) Check Date (in house)	tes and are part of the certificate. ± 3)°C and humidity < 70%. Scheduled Calibration Oct-10 Scheduled Check In house check: Jun-10 Signature
The measurements and the un All calibrations have been con Calibration Equipment used (M Primary Standards Keithley Multimeter Type 2001 Secondary Standards	Acertainties with confidence pr ducted in the closed laboratory 18TE critical for calibration) ID # SN: 0810278 ID # SE UMS 006 AB 1004	obability are given on the following page y facility: environment temperature (22 <u>Cal Date (Certificate No.)</u> 1-Oct-09 (No: 9055) <u>Check Date (in house)</u> 05-Jun-09 (in house check)	tes and are part of the certificate. ± 3)°C and humidity < 70%. Scheduled Calibration Oct-10 Scheduled Check In house check: Jun-10 Signature
The measurements and the un All calibrations have been con Calibration Equipment used (M Primary Standards Keithley Multimeter Type 2001 Secondary Standards Calibrator Box V1.1	Anternatives with confidence producted in the closed laboratory M&TE critical for calibration) ID # ID # ID # SE UMS 006 AB 1004 Name	obability are given on the following page y facility: environment temperature (22 <u>Cal Date (Certificate No.)</u> 1-Oct-09 (No: 9055) <u>Check Date (in house)</u> 05-Jun-09 (in house check) Function	tes and are part of the certificate. ± 3)°C and humidity < 70%. Scheduled Calibration Oct-10 Scheduled Check In house check: Jun-10

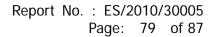
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

台灣檢驗科技股份有限公司

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



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

SGS



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

Accreditation No.: SCS 108

S

С

S

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 Client SGS (Auden)

Certificate No: AM1DV2-1030_Apr09

Object	AM1DV2 - SN: 1030					
Calibration procedure(s)	QA CAL-24.v2 Calibration procedure for AM1D magnetic field probes and TMFS in the audio range					
Calibration date:	April 23, 2009	April 23, 2009				
Condition of the calibrated item	In Tolerance	In Tolerance				
The measurements and the unce	ertainties with confidenc	national standards, which realize the physical unit re probability are given on the following pages and atory facility: environment temperature (22 ± 3)°C n)	d are part of the certificate.			
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration			
Keithley Multimeter Type 2001 Reference Probe AM1DV2 DAE4	SN: 0810278 SN: 1008 SN: 781	30-Sep-08 (No: 7670) 12-Jan-09 (No. AM1D-1008_Jan09) 20-Feb-09 (No. DAE4-781_Feb09)	Sep-09 Jan-10 Feb-10			
Secondary Standards	ID #	Check Date (in house)	Scheduled Check			
AMCC	1050	15-Aug-08 (in house check Aug-08)	Aug-09			
	Name	Function RF Technician	Signature			
Calibrated by:	Mike Meili	The recimician	1. teili			
Calibrated by:	Mike Meili					
Calibrated by: Approved by:	Mike Meili Fin Bomholt	R&D Director	Simbile			

Certificate No: AM1D-1030_Apr09

Page 1 of 3

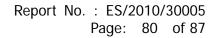
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

台灣檢驗科技股份有限公司

SGS Taiwan Ltd. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 f (886-2) 2298-0488 t (886-2) 2299-3279



References

SG

- ANSI C63.19-2007 [1]
- American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids. [2]
 - DASY4 manual, Chapter: Hearing Aid Compatibility (HAC) T-Coil Extension

Description of the AM1D probe

The AM1D Audio Magnetic Field Probe is a fully shielded magnetic field probe for the frequency range from 100 Hz to 20 kHz. The pickup coil is compliant with the dimensional requirements of [1]. The probe includes a symmetric low noise amplifier for the signal available at the shielded 3 pin connector at the side. Power is supplied via the same connector (phantom power supply) and monitored via the LED near the connector. The 7 pin connector at the end of the probe does not carry any signals, but determines the angle of the sensor when mounted on the DAE. The probe supports mechanical detection of the surface.

The single sensor in the probe is arranged in a tilt angle allowing measurement of 3 orthogonal The single sensor in the probe is arranged in a till angle allowing measurement or 3 orthogonal field components when rotating the probe by 120° around its axis. It is aligned with the perpendicular component of the field, if the probe axis is tilted nominally 35.3° above the measurement plane, using the connector rotation and sensor angle stated below. The probe is fully RF shielded when operated with the matching signal cable (shielded) and allows measurement to faudi magnetic fields in the close vicinity of RF emitting wireless devices according to [1] without additional shielding.

Handling of the item

The probe is manufactured from stainless steel. In order to maintain the performance and calibration of the probe, it must not be opened. The probe is designed for operation in air and shall not be exposed to humidity or liquids. For proper operation of the surface detection and emergency stop functions in a DASY system, the probe must be operated with the special probe cup provided (larger diameter).

Methods Applied and Interpretation of Parameters

- Coordinate System: The AM1D probe is mounted in the DASY system for operation with a HAC Test Arch phantom with AMCC Helmholtz calibration coil according to [2], with the tip pointing to "southwest" orientation.
- Functional Test: The functional test preceding calibration includes test of Noise level

RF immunity (1kHz AM modulated signal). The shield of the probe cable must be well connected. Frequency response verification from 100 Hz to 5 kHz.

- Connector Rotation: The connector at the end of the probe does not carry any signals and is used for fixation to the DAE only. The probe is operated in the center of the AMCC Helmholtz coil using a 1 kHz magnetic field signal. Its angle is determined from the two minima at nominally +120° and -120° rotation, so the sensor in the tip of the probe is aligned to the vertical plane in z-direction, corresponding to the field maximum in the AMCC Helmholtz calibration coil.
- Sensor Angle: The sensor tilting in the vertical plane from the ideal vertical direction is determined from the two minima at nominally +120° and -120°. DASY system uses this angle to align the sensor for radial measurements to the x and y axis in the horizontal plane.
- Sensitivity: With the probe sensor aligned to the z-field in the AMCC, the output of the probe is compared to the magnetic field in the AMCC at 1 kHz. The field in the AMCC Helmholtz coil is given by the geometry and the current through the coil, which is monitored on the precision shunt resistor of the coil.

Certificate No: AM1D-1030 Apr09

Page 2 of 3

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 SGS Taiwan Ltd. t (886-2) 2299-3279 f (886-2) 2298-0488



AM1D probe identification and configuration data

Item	AM1DV2 Audio Magnetic 1D Field Probe		
Type No	SP AM1 001 AE		
Serial No	1030		

Overall length	296 mm			
Tip diameter	6.0 mm (at the tip)			
Sensor offset	3.0 mm (centre of sensor from tip)			
Internal Amplifier	40 dB			

Manufacturer / Origin	Schmid & Partner Engineering AG, Zurich, Switzerland
Manufacturing date	Jul-2006
Last calibration date	April 16, 2008

Calibration data

Connector rotation angle	(in DASY system)	251.3 °	+/- 3.6 ° (k=2)
Sensor angle	(in DASY system)	-0.11 °	+/- 0.5 ° (k=2)
Sensitivity at 1 kHz	(in DASY system)	0.0648 V / (A/m)	+/- 2.2 % (k=2)

Certificate No: AM1D-1030_Apr09

Page 3 of 3

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

.td. No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 - 司 t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com



14 Uncertainty Analysis

Error Description	Uncertainty value [%]	Prob. Dist.	Div.	c ABM1	c ABM2	Std. Unc. ABM1 [%]	Std. Unc. ABM2 [%]
PROBE SENSITIVITY		-	-				
Reference level	3.0	N	1.0	1	1	3.0	3.0
AMCC geometry	0.4		1.7	1	1	0.2	0.2
AMCC current	0.6		1.7	1	1	0.2	0.4
Probe positioning during calibration		R	1.7	1	1	0.4	0.1
Noise contribution	0.7		1.7	-	-	0.0	0.4
Frequency slope	5.9		1.7	0.0145	1.0		3.5
PROBE SYSTEM				1		-	
Repeatability / Drift	1.0	R	1.7	1	1	0.6	0.6
Linearity / Dynamic range	0.6	R	1.7	1	1	0.4	0.4
Acoustic noise	1.0	R	1.7	0.1	1	0.1	0.6
Probe angle	2.3	R	1.7	1	1	1.4	1.4
Spectral processing	0.9	R	1.7	1	1	0.5	0.5
Integration time	0.6	N	1.0	1	5	0.6	3.0
Field disturbation	0.2	R	1.7	1	1	0.1	0.1
TEST SIGNAL							
Reference signal spectral response	0.6	R	1.7	0	1	0.0	0.4
POSITIONING			-	1		1	
Probe positioning	1.9	R	1.7	1	1	1.1	1.1
Phantomthickness	0.9	R	1.7		1	0.5	0.5
DUT positioning	1.9	R	1.7	1	1	1.1	1.1
EXTERNAL CONTRIBUTIONS							
RF interference	0.0		1.7	1	1	0.0	0.0
Test signal variation	2.0	R	1.7	1	1	1.2	1.2
COMBINED UNCERTAINTY							
Combined Std. uncertainty (ABM field)		-		1	1	4.1	6.1
Expanded Std. uncertainty [%]					1	8.1	12.3

Table 18.1 Uncertainty of audio band magnetic measurements

End of 1st part of report

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms_e-document.htm</u>. 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號 t (886-2) 2299-3279 f (886-2) 2298-0488