



晶復科技股份有限公司

A Test Lab Techno Corp.

公眾交換電話網路終端設備試驗報告

報告編號	2008DT13
版本(Rev.)	00
產品名稱	傳真卡
申請廠商	金儀股份有限公司
廠牌	KONICA MINOLTA
型式 (號)	FK-514
產品試驗依據之標準	PSTN01 公眾交換電話網路終端設備技術規範(109.07.01)
報告發行日期	109 年 10 月 05 日

填發本型式認可報告之試驗機構 (認可代號)

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財團法人全國認證基金會
認證編號 : 1330
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免責聲明

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報告修訂紀錄

版本 (Rev.)	發行日期	修訂內容	修訂者
00	109 年 10 月 05 日	初版發行	林珮鈺

公眾交換電話網路終端設備試驗報告

發行日期：109年10月05日

產品名稱：傳真卡

廠牌：KONICA MINOLTA

型號：FK-514

申請廠商：金儀股份有限公司

申請者地址：臺北市信義區信義路5段2號13樓

製造廠商：KONICA MINOLTA, INC.

製造商地址：2-7-2, Marunouchi, Chiyoda-ku, Tokyo, Japan

待測物電壓：DC 5 V

試驗電壓：110 Vac, 60 Hz

量測規範：PSTN01 公眾交換電話網路終端設備技術規範(109.07.01)

試驗實驗室：晶復科技股份有限公司(桃園市八德區長安街140-1號)

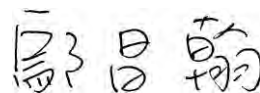
樣品接受日期：109 年 07 月 13 號

試驗完成日期：109 年 08 月 04 號 ~ 109 年 08 月 05 號

報告中所描述之測試結果與待測設備之架構組合，均根據實際量測情況作詳實的記錄。
由測試結果顯示，上述待測設備樣機確實已符合PSTN01公眾交換電話網路終端設備技術規範所規定的各項限制值。

特此證明！

審核者：



(鄔 昌 翰)

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1. 一般敘述

1.1 待測設備一般敘述

本敘述僅針對產品簡單說明之，其他詳細之規格請參考使用說明書。

產 品 名 稱	傳真卡
廠 牌	KONICA MINOLTA
型 號	FK-514
額 定 電 源	DC 5 V

輸出/輸入埠說明：

輸 出 / 入 埠		數量	介面內容說明
1	Micro USB Port	1	連接至事務機 5 V 電壓輸出
2	TEL connectivity Port	1	連接至事務機電話線路
3	Line Port	1	連接至傳真線路輸出端口
4	Telephone Port	1	連接至分機線路輸出端口

待測設備外圍說明：

電 源 線 類 別	本產品透過 Power Cable 供電。
附 屬 裝 置	無

No.	裝置名稱	廠牌	型 號	備註
1	數位式多功能彩色影印機	KONICA MINOLTA	bizhub C458	---
2	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub C458	---
3	數位式多功能彩色影印機	KONICA MINOLTA	bizhub C658	---
4	數位式多功能彩色影印機	KONICA MINOLTA	bizhub C558	---
5	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub C658	---
6	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub C558	---
7	數位式多功能影印機	KONICA MINOLTA	bizhub 558	---
8	數位式多功能影印機	KONICA MINOLTA	bizhub 458	---
9	數位式多功能影印機	KONICA MINOLTA	KONICA MINOLTA bizhub 558	---
10	數位式多功能影印機	KONICA MINOLTA	KONICA MINOLTA bizhub 458	---
11	數位式多功能影印機	KONICA MINOLTA	bizhub 658e	---
12	數位式多功能影印機	KONICA MINOLTA	bizhub 558e	---
13	數位式多功能影印機	KONICA MINOLTA	KONICA MINOLTA bizhub 658e	---
14	數位式多功能影印機	KONICA MINOLTA	KONICA MINOLTA bizhub 558e	---
15	數位式多功能影印機	KONICA MINOLTA	bizhub 458e	---
16	數位式多功能影印機	KONICA MINOLTA	KONICA MINOLTA bizhub 458e	---
17	數位式多功能彩色影印機	KONICA MINOLTA	bizhub C360i	---

No.	裝置名稱	廠牌	型 號	備註
18	數位式多功能彩色影印機	KONICA MINOLTA	bizhub C300i	---
19	數位式多功能彩色影印機	KONICA MINOLTA	bizhub C250i	---
20	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub C360i	---
21	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub C300i	---
22	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub C250i	---
23	數位式多功能彩色影印機	KONICA MINOLTA	bizhub C450i	---
24	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub C450i	---
25	數位式多功能彩色影印機	KONICA MINOLTA	bizhub C650i	---
26	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub C650i	---
27	數位式多功能彩色影印機	KONICA MINOLTA	bizhub C550i	---
28	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub C550i	---
29	數位式多功能彩色影印機	KONICA MINOLTA	bizhub 450i	---
30	數位式多功能彩色影印機	KONICA MINOLTA	KONICA MINOLTA bizhub 450i	---
31	數位式多功能影印機	KONICA MINOLTA	bizhub 650i	此次增列
32	數位式多功能影印機	KONICA MINOLTA	KONICA MINOLTA bizhub 650i	此次增列
33	數位式多功能影印機	KONICA MINOLTA	bizhub 550i	此次增列
34	數位式多功能影印機	KONICA MINOLTA	KONICA MINOLTA bizhub 550i	此次增列
註：平台中包含兩張相同傳真卡 平台差異： No.1~16、23~24、29~30 差異為市場銷售需求，其餘電路設計、印刷電路板等等並無變更。 No.17~22、25~28、31~34 差異為送紙速率不同，其餘電路設計、印刷電路板等等並無變更。				

1.2 其他相關聲明

本測試報告屬(以下選擇一種打■)

☐	申請新的型式檢驗認可的測試。
☒	已取得型式檢驗認可之商品,因設計變更而重新測試 (變更內容請參考系列機型之差異說明及產品變更說明). 登錄號碼: CCAK15F10050T3

系列機型之差異說明

機型廠牌、型號	差異敘述
KONICA MINOLTA / FK-514	因市場銷售需求，增列平台： KONICA MINOLTA / bizhub 650i KONICA MINOLTA / KONICA MINOLTA bizhub 650i KONICA MINOLTA / bizhub 550i KONICA MINOLTA / KONICA MINOLTA bizhub 550i 其餘電路設計、印刷電路板等等並無變更，詳細差異請參閱下列平台差異表。 測試結果說明： 判定其差異僅需搭配平台型號：bizhub 650i，進行完整評估並記錄其結果數據。

平台差異表：

機種型式 評估項目	主型式 bizhub 650i	系列型式 KONICAMINOLTA bizhub 650i	系列型式 bizhub 550i	系列型式 KONICAMINOLTA bizhub 550i
額定輸入	AC 110 V, 60 Hz, 15 A	0	0	0
品牌 Brand Name	KONICA MINOLTA	0	0	0
電源線 Power cord	HL-061	0	0	0
I 類 or II 類 Class of equipment	Class I	0	0	0
電源型式 Power type	非分離式電源線組 Non-detachable Power Cord Set	0	0	0
送紙速率 Copy speed	65 ppm	0	55 ppm	55 ppm
顏色 Color	black	0	0	0
主板 PWB-MFP	ACKNK1209	0	0	0
電源板 (DCPU Switching Power Supply)	ETX9KN978AGA	0	0	0
高壓電路板 High Voltage Power Supply	EUK9MMD77H	0	0	0
掃描器高壓燈管點燈器 LED Module	ULGUWA30B10	0	0	0
CIS Module	WF6R306KM	0	0	0
熔碳單元 Fuser unit	ETX9KN968AN	0	0	0
備註： 1. 相同處以"0"表示。 2. 不同處以"X"表示。 3. 如上除列印張數由韌體控制，其餘零組件,電路設計皆相同				

2. 量測儀器及其他說明

2.1 量測設備

測試者: 余尚桓

名稱	廠牌	型號	序號	本次校驗日期	下次校驗日期
Telecom Conformance Analyzer	Hermon Laboratories	TCA 8200	8797	03/11/2019	03/04/2022
MegaPulse Metallic	Compliance West USA	MegaPulse Metallic Type A	430647	01/07/2020	01/06/2021
MegaPulse Long.	Compliance West USA	MegaPulse Long. Type A	430646	01/07/2020	01/06/2021
MegaPulse Power-Line	Compliance West USA	MegaPulse Power-Line	430649	02/19/2020	02/18/2021
AC/DC Withstand Voltage Tester/Insulation	EXTECH	7142	1343447	09/11/2019	09/10/2020

3. 測試項目與結果判定總表

項次	檢驗項目	適用標準	試驗結果	結果判定
1	公眾交換電話網路介面規格	公眾交換電話網路終端設備技術規範	請參閱第4章節	符合
2	聽筒功能	公眾交換電話網路終端設備技術規範	請參閱第4.2章節	不適用 (Note 1)
3	連接公眾交換電話網路的無線電話功能	公眾交換電話網路終端設備技術規範	請參閱第4.3章節	不適用 (Note 1)
4	交換機功能特性	公眾交換電話網路終端設備技術規範	請參閱第4.4章節	符合 (Note 2)
5	通信協定規定	公眾交換電話網路終端設備技術規範	請參閱第4章節	符合 (Note 3)
6	來話顯示功能	公眾交換電話網路終端設備技術規範	請參閱第4.6章節	不適用 (Note 1)
7	自動重撥功能	公眾交換電話網路終端設備技術規範	請參閱第4.7.1章節	符合
8	自動應答功能	公眾交換電話網路終端設備技術規範	請參閱第4.7.2章節	符合 (Note 4)

Note: 1.不適用之項目為此產品不具該功能。

2.僅適用於串音損失

3.請詳見廠商提出符合 ITU-T 之通信協定聲明宣告書。

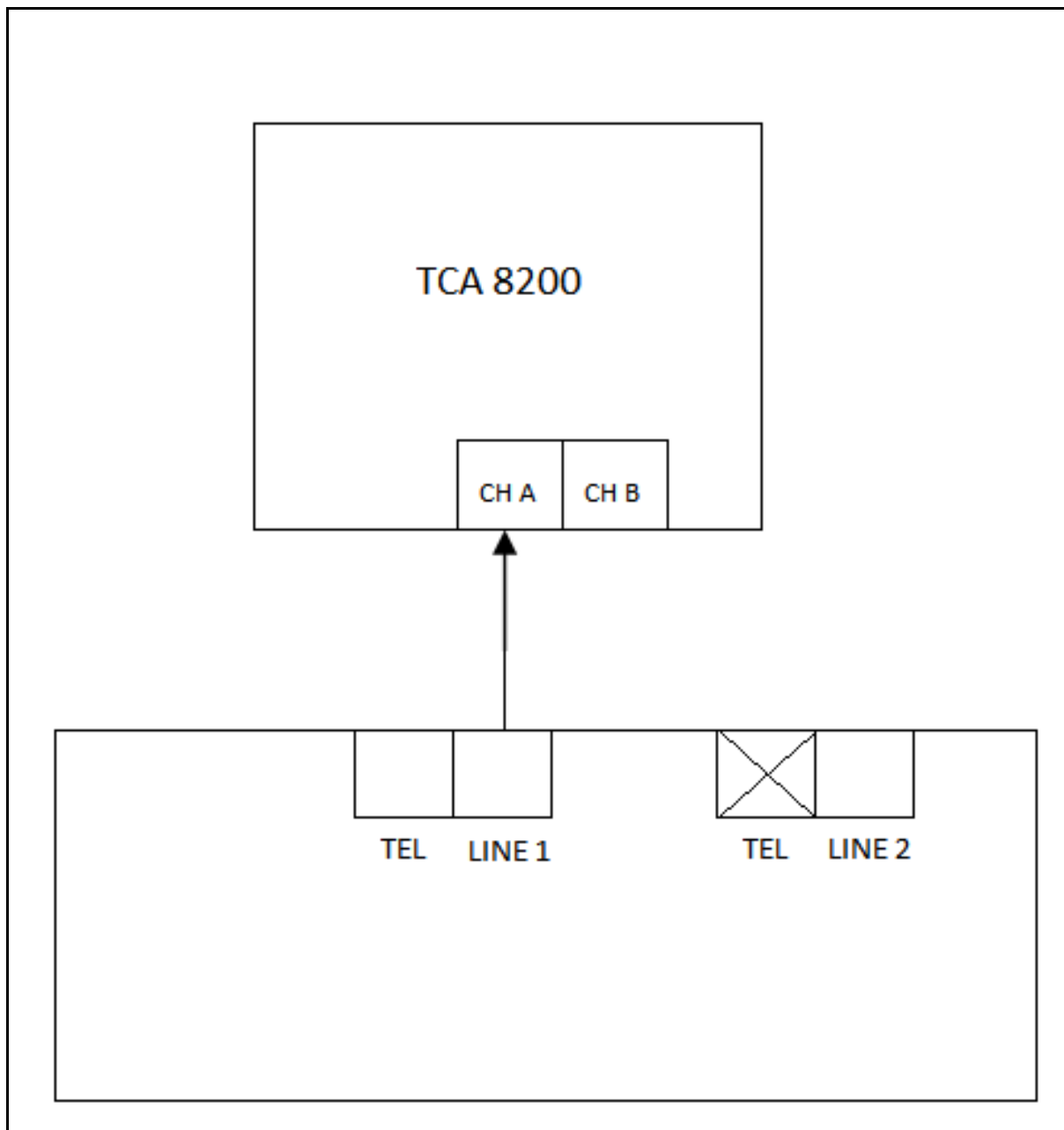
4.此產品無數據機功能。

Decision Rule

■ Uncertainty is not included.

□ Uncertainty is included.

4. 測試配置圖



5. 檢驗紀錄

PSTN01 公眾交換電話網路終端設備技術規範			
章節	檢驗項目及標準	檢驗結果	判定
4.1	公眾交換電話網路介面規格		
4.1.1	基本要求： 1.應為第一類電信事業者設備外之獨立本體，不得改裝第一類電信事業設備。		符合
	檢驗儀器	TCA 8200	
	2.終端設備於連接網路後，不致影響公眾電信網路之交換、測試、傳輸及計費性能。		符合
	檢驗儀器	TCA 8200	
	3.終端設備不使用或發生故障時，必須不影響其他並接設備之正常使用。		符合
	檢驗儀器	TCA 8200	
4.1.2	雷擊保護		
4.1.2.1	電話線雷擊測試		
4.1.2.1.1	橫向雷擊測試： 雷擊波形10 us×560 us/峰值電壓≥800 V，電話線之間、開路及閉路狀態且正負極性之雷擊各一次後，所有操作功能須正常	橫向雷擊測試後，所有操作功能都正常	符合
	檢驗儀器	Compliance West USA MegaPulse Metallic Type A	
4.1.2.1.2	縱向雷擊測試： 雷擊波形10 us×160 us/峰值電壓≥1500 V，電話線兩端短路對地之間、開路及閉路狀態且正負極性之雷擊各一次後，所有操作功能須正常	縱向雷擊測試後，所有操作功能都正常	符合
	檢驗儀器	Compliance West USA MegaPulse Logitudinal Type A	
4.1.2.2	交流電源線雷擊測試： 雷擊波形2 us×10 us/峰值電壓≥2500 V，終端設備在開機及關機狀態，交流電源線兩端之間施加雷擊，正負極性各三次後，所有操作功能須正常	交流電源線雷擊後，所有操作功能都正常	符合
	檢驗儀器	Compliance West USA MegaPulse Power-Line	
4.1.3	電話線極性變換： 局線端L1/L2測試應不分極性	正負極性測試，終端設備工作均正常	符合
	檢驗儀器	TCA 8200	

PSTN01 公眾交換電話網路終端設備技術規範			
章節	檢驗項目及標準	檢驗結果	判定
4.1.4	洩漏電流限制： 終端設備需通過60 Hz對應之交流電壓應用在組合試驗點之間。 試驗電壓在30秒時間內，從0 V逐漸增加至試驗電壓後，再持續試驗電壓1分鐘，在90秒試驗之任何時間中，電壓電源和試驗點之間的洩漏電流不可超過10 mA峰值。	附件1	符合
	電話線對地： 1000 V/60 Hz：<10 mA	0.667 mA	
	電話線對電源線： 1500 V/60 Hz：<10 mA	0.784 mA	
	電源線對地： 1500 V/60 Hz：<10 mA	4.47 mA	
	檢驗儀器	EXTECH 7142	
4.1.5	絕緣電阻： 直流電壓100伏特，測試下列各試驗點之間的絕緣電阻須大於5 MΩ	附件2	符合
	1. 電話線T對R兩端	測試結果： 6.66 MOhm / 6.66 MOhm	
	2. 電話線T與R兩端短路對交流電源線之間	測試結果：> 100 MOhm 附件 3	
	3. 電話線T與R兩端短路對接地端之間	測試結果：> 100 MOhm 附件 4	
	檢驗儀器	TCA 8200	
4.1.6	振鈴特性：		
4.1.6.1	振鈴響應： 20 Hz/45 Vrms振鈴信號+48 VDC且串接5 kΩ電阻時，必須能夠響應	測試結果：能正常響應 附件5	符合
	檢驗儀器	TCA 8200	
4.1.6.2	振鈴阻抗：20 Hz/75 Vrms的振鈴信號	附件6	符合
	振鈴阻抗不可小於5 kΩ 電容值須小於3.0 μF	測試結果： 45.72 KOhm / 69.90 nF	
	檢驗儀器	TCA 8200	
4.1.6.3	開路時交流阻抗：3 Vrms的交流信號	測試結果： 附件7	符合
	檢驗儀器	TCA 8200	
4.1.7	開路時直流電阻：	測試結果： 附件8	符合
	檢驗儀器	TCA 8200	

PSTN01 公眾交換電話網路終端設備技術規範			
章節	檢驗項目及標準	檢驗結果	判定
4.1.8	信號送出位準限制：(內部傳送信號)	附件9 ~ 附件18	
	1. 200 Hz~4000 Hz，不可大於-10 dBm	測試結果： -11.13 dBm / -11.16 dBm	符合
	2. 4 kHz~8 kHz，不可大於-20 dBm	測試結果： -66.58 dBm / -67.64 dBm	
	3. 8 kHz~12 kHz，不可大於-40 dBm	測試結果： -71.40 dBm / -74.33 dBm	
	4. 12 kHz~40 kHz，不可大於-60 dBm	測試結果： -67.92 dBm / -68.97 dBm	
	檢驗儀器	TCA 8200	
4.1.9	橫軸平衡限制		
	開路狀態：200 Hz≤f≤4000 Hz須≥40 dB 開路狀態：200 Hz≤f<1000 Hz須≥60 dB 開路狀態：1000 Hz≤f≤4000 Hz須≥40 dB	測試結果：附件19	符合
	檢驗儀器	TCA 8200	
	4.1.10	回流損失： 參考負載阻抗600 Ω，擬似迴路0公里時 測試須符合下列規格 500 Hz~2500 Hz：≥8 dB 200 Hz~500 Hz及2500 Hz~200 Hz：≥6 dB	測試結果：附件20
檢驗儀器		TCA 8200	
4.1.11	脈衝撥號：(0公里、5公里擬似迴路)	附件21	
	1.平均脈衝速度：10±1 P.P.S	平均脈衝速度： 9.9 P.P.S / 10.0P.P.S(0公里) 9.9 P.P.S / 9.9 P.P.S(5公里)	符合
	2.平均接續率：33±3 %	平均接續率： 32.68 % / 32.87 %(0公里) 33.03 % / 33.20 %(5公里)	
	3.最小碼間隔：600 msec	最小碼間隔： 1.0s(0公里) 、1.1s(5公里)	
	檢驗儀器	TCA 8200	
4.1.12	雙音複頻(DTMF)撥號信號	附件22 ~ 附件23	
4.1.12.1	頻率組合：0公里及5公里：±1.5 %以內	測試結果： 0.00 % ~ 0.01 %(HF、0公里) 0.00 % ~ 0.01 %(HF、5公里) -0.00 % ~ 0.01 %(LF、0公里) -0.00 % ~ 0.01 %(LF、5公里)	符合
	檢驗儀器	TCA 8200	
4.1.12.2	信號位準：(600 Ω負載)		符合
	1.(0公里)：HF：-6±2 dBm	測試結果： HF：-6.150 ~ -6.086 dBm LF：-8.054 ~ -8.011 dBm	
	LF：-8±2d Bm		

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4.1.12.2	2.(5公里)：HF：≥-21 dBm	測試結果： HF：-16.140 dBm(最小值) LF：-16.454 dBm(最小值)	符合
	LF：≥-21 dBm		
	檢驗儀器	TCA 8200	
4.1.12.3	信號位準差：0公里時： 高頻群信號位準比低頻群大0～3 dB	測試結果： 1.86～1.97 dB	符合
4.1.12.4	信號時間：≥40 ms	測試結果(最小值)： 122.7 ms (0公里)、122.4 ms (5公里)	符合
4.1.12.5	中繼時間：≥50 ms	測試結果(最小值)： 101.9 ms (0公里)、102.3ms (5公里)	符合
	檢驗儀器	TCA 8200	
4.1.13	串接設備		不適用
4.1.13.1	串接設備的直流壓降：	附件24	符合
	1. 迴路電流30 mA時，直流壓降須小於3 Vdc	測試結果：1.17 V	
	2. 迴路電流60 mA時，直流壓降須小於6 Vdc	測試結果：1.21 V	
	檢驗儀器	TCA 8200	
4.1.13.2	串接設備的插入損失：	附件25	符合
	頻率1500 Hz信號位準-10 dBV插入損失 需小於1.5 dB		
	檢驗儀器	TCA 8200	
4.2	聽筒功能		
4.2.1	傳輸當量		
4.2.1.1	送話傳輸當量(OREM-A規格)	設備無此項功能不需測試	不適用
	0公里：+11～-2 dB		
	5公里：+11～0 dB		
4.2.1.2	受話傳輸當量(OREM-A規格)	設備無此項功能不需測試	不適用
	0公里：5～-6 dB		
	5公里：5～-4 dB		
4.2.2	傳輸特性頻率響應		
4.2.2.1	送話頻率響應(OREM-A規格) 0公里：	設備無此項功能不需測試	不適用

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4.2.2.2	受話頻率響應(OREM-A規格) 1. 0公里：受話頻率響應需不可大於240 Hz 至5000 Hz 頻帶內的上限值且不可小於下限值 2. 聽筒具備可調整受話器增益功能，須設定在標稱輸出準位及最大輸出 準位測試，且都須符合此項規定 聽筒具備可調整受話器增益屬助聽功能，可設定在標稱輸出準位時測試，且須符合此項規定	設備無此項功能不需測試	不適用
4.2.3	側音當量(OREM-A)	設備無此項功能不需測試	不適用
	0公里：≥4 dB		
	5公里：≥4 dB		
	檢驗儀器		
4.2.4	失真度		
4.2.4.1	送話失真度：0公里時，總失真不可超過5 %	設備無此項功能不需測試	不適用
4.2.4.2	受話失真度： 1. 0公里時，總失真不可超過7 % 2. 聽筒具備可調整受話器增益功能，總失真不可超過10 % 聽筒具備可調整受話器增益屬助聽功能，測試標準輸出失真不可超過7 %	設備無此項功能不需測試	不適用
	檢驗儀器		
4.2.5	受話音量控制：具增益功能設備須測試，增益須在3~6 dB之內(回到開路後 音量是自動被儲存在標稱值，則受話音 量增益可>6 dB)	設備無此項功能不需測試	不適用
	檢驗儀器		
4.2.6	受話器的連續音壓位準：須小於125 dB(A)	設備無此項功能不需測試	不適用
	檢驗儀器		
4.2.7	受話器磁通量測試(具助聽功能時適用)： 如軸向磁場強度測試值>-19 dB 如軸向磁場強度測試值>-22 dB	設備無此項功能不需測試	不適用
	徑向磁場強度		
	0°：>-27 dB		
	90°：>-27 dB		
	180°：>-27 dB		
	270°：>-27 dB		
	檢驗儀器		

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4.2.8	受話器音量控制(具助聽功能時適用)： 聽筒具備可調整受話器增益功能時，測試受話 傳輸當量時需控制在 12 dB~18 dB之間如果符合下面六項超過 18 dB亦可接受	設備無此項功能不需測試	不適用
	受話當量 0公里 2.5公里 5公里		
	受話器音量大於18 dB則必須符合： 1. 待測物的音量在掛機(on Hook)後，會自 動把音量設定恢復為一般值(18 dB 以下) 2. 在其強制擴音功能之開關旁，需有標籤註 明 3. 其電話機前需有其明顯燈號，於強制擴音 功能開起後，其燈號亮起 4. 其燈號旁需有標籤註明為強制擴音功能 5. 於電話機之手持話筒之背面需具有盲人 凸字警語「高音量，請小心使用」，提醒 其強制擴音功能之開關可能已開起(如電 話只有手持話機時,其盲人凸字警語需印 刷在其電話鍵盤上) 申請人需提供助聽功能說明書	設備無此項功能不需測試	不適用
	檢驗儀器		
	4.3	連接公眾交換電話網路的無線電話功能	
4.3.1	射頻頻率規定： 在80 MHz以下低功率雙工有線電話無線主副 機需符合電信總局公告頻率	設備無此項功能不需測試	不適用
4.3.2	密碼規定： 在主機、手機之密碼被未經授權而破解之機率 需小於 1/1000	設備無此項功能不需測試	不適用
4.3.3	發射機規定：		
4.3.3.1	載波頻率：頻率偏移需小於±500 Hz	設備無此項功能不需測試	不適用
4.3.3.2	調變靈敏度：-12±3 dBm(只適用於主機)	設備無此項功能不需測試	不適用
4.3.3.3	音頻失真：需小於5 %	設備無此項功能不需測試	不適用
4.3.4	接收機規定：		
4.3.4.1	可用靈敏度：需<2.0 μV	設備無此項功能不需測試	不適用
4.3.4.2	可用頻寬：需在±500 Hz範圍外	設備無此項功能不需測試	不適用
4.3.4.3	音頻失真：需小於5 %	設備無此項功能不需測試	不適用
4.3.4.4	信號與雜訊比：須大於40 dB	設備無此項功能不需測試	不適用

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4.3.4.5	鄰波道拒斥：須大於45 dB	設備無此項功能不需測試	不適用
4.3.4.6	混附響應拒斥：須大於35 dB	設備無此項功能不需測試	不適用
4.3.5	輻射電場強度與輻射干擾測試		不適用
	發射載波頻率輻射電場強度其數值需小於10000 uV/m	設備無此項功能不需測試	
	最大允許諧波輻射及雜波干擾輻射電場強度		
	(1)25～88 MHz：<100 uV/m	設備無此項功能不需測試	
	(2)88～216 MHz：<150 uV/m	設備無此項功能不需測試	
	(3)216～1000 MHz：<200 uV/m	設備無此項功能不需測試	
4.4	交換機功能特性		
4.4.1	一般特性		
4.4.1.1	停電	設備無此項功能不需測試	不適用
	1. 交換機停電時，須提供至少一條中繼線以供緊急通話使用		
	2. 電力線電源恢復後，交換機必須維持電源剛恢復前已接通之中繼線		
	3. 交換機說明書中須說明停電時之操作處理方法		
4.4.1.2	切斷中繼線： 使用者掛斷分機或值機員操作切斷中繼線應於 3 秒內形成開路	設備無此項功能不需測試	不適用
4.4.2	靜態雜音： 交換機各種通話路之靜態雜音電壓應小於1.5 mVp (36 dBrc)	設備無此項功能不需測試	不適用
4.4.3	傳輸損失： 中繼線端與內線端傳輸損失以1 kHz測試 不得大於2dB	設備無此項功能不需測試	不適用
4.4.4	串音損失： 通話電路相互間之串音損失以1 kHz測試 時應在65 dB以上 二條(含)中繼線 以上的終端設備必須符合本項規定	測試結果：-100.48 dB / -102.33 dB 附件26	符合
4.5	通信協定規定		
	數據設備等使用通信協定之產品需符合ITU-T之規定 廠商提出符合聲明宣告書	廠商提出符合聲明宣告書	符合

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4.6	來話顯示功能				
4.6.1	FSK信號檢測標準				
4.6.1.1.1	直流界限： 終端設備在收到有效喚醒信號的信號狀態下，終端設備所汲取之直流電流應不超出0.5毫安培		設備無此項功能不需測試		不適用
4.6.1.1.2	交流界限： 信號狀態終端設備需呈現下列交流情況：於200 Hz至4000 Hz 頻率範圍內，阻抗不能小於8千歐姆，且相位角不能超過+5度 供應廠商應提出符合聲明宣告		設備無此項功能不需測試		不適用
4.6.1.2	時序				
4.6.1.2.1	喚醒狀況 測試儀器傳送測試封包TP1予終端設備 以下表各種狀況都需符合規格		設備無此項功能不需測試		不適用
	TAS狀況	調變狀況	結果	檢驗結果	
	DT1	FSK1	正確接收FSK數據	無此項功能	
	DT2	FSK1	正確接收FSK數據	無此項功能	
	DT4第一個振鈴開始於 TAS單一振鈴脈衝 結束後一秒	FSK1	在第一個振鈴開始時待 測終端設備回到閒置狀態 無訊息或錯誤顯示	無此項功能	
	DT4	無數據封包	待測終端設備回到閒置 狀態	無此項功能	
	DT4	FSK1	正確接收FSK數據	無此項功能	
	DT5	FSK1	正確接收FSK數據	無此項功能	
4.6.1.2.2	起始時間： 1. 終端設備自DT-AS結束應於45毫秒內 進入信號狀態 供應廠商應提出符合聲明宣告		設備無此項功能不需測試		不適用

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4.6.1.2.3	結束時間： 1. 終端設備自來話顯示訊息送完應於150毫秒內脫離信號狀態並回復到閒置狀態 2. 供應廠商應提出符合聲明宣告		設備無此項功能不需測試		不適用
4.6.1.3	信號狀況				
4.6.1.3.1	頻率、位準、偏差及干擾容限		設備無此項功能不需測試		不適用
	測試儀器傳送測試封包TP1予待測終端設備以下表各種狀況都需符合規格				
	TAS狀況	調變狀況	結果	檢驗結果	
	DT5	FSK1	正確接收FSK數據	無此項功能	
	DT5	FSK2	正確接收FSK數據	無此項功能	
	DT5	FSK3	正確接收FSK數據	無此項功能	
4.6.1.4	封包狀況				
4.6.1.4.1	通路捕捉： 測試儀器設定為傳送測試訊DT5:FSK1:TP1予待測終端設備核對待測終端設備正確表示訊息		設備無此項功能不需測試		不適用
4.6.1.4.2	標 號： 測試儀器設定為傳送測試訊DT5:FSK1:TP1予待測終端設備核對待測終端設備正確表示訊息		設備無此項功能不需測試		不適用
4.6.1.4.3	訊息型式：試儀器傳送在以下表各種測試訊息予待測終端設備Hu待測終端設備需正確表示每一訊息Hu				不適用
	測試數據	檢驗狀況	結果	檢驗結果	
	DT5:FSK1:TP1	呼叫建立型式訊息	正確接收FSK數據	無此項功能	
	DT5:FSK1:TP2	訊息等待指示型式訊息	正確接收FSK數據	無此項功能	
	DT5:FSK1:TP5	非呼叫建立型式訊息	捨棄或顯示錯誤訊息	無此項功能	
4.6.1.4.4	查 核 值： 測試儀器設定為傳送測試訊DT5:FSK1:TP6予待測終端設備（非正確查核值） 核對待測終端設備正確捨棄或顯示錯誤訊息		設備無此項功能不需測試		不適用

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4.6.1.5	展現層訊息狀況： 測試儀器設定為傳送表十測試訊息予待測終端設備。 核對待測終端設備正確表示每一訊息		設備無此項功能不需測試	
	測試數據	檢驗狀況	標準	檢驗結果
	DT5:FSK1:TP7	閒置時回鈴 (有效CLI訊息)	訊息忽略或正確接收 FSK數據	無此項功能
	DT5:FSK1:TP8	無 (有效CLI訊息)	正確接收FSK數據	無此項功能
	DT5:FSK1:TP9	語音 (有效CLI訊息)	正確接收FSK數據	無此項功能
	DT5:FSK1:TP10	語音 (有效CLI訊息)	正確接收FSK數據	無此項功能
	DT5:FSK1:TP11	等待訊息 (有效CLI訊息)	訊息非忽略即正確顯示	無此項功能
	DT5:FSK1:TP13	語音 (有效CLI訊息)	正確接收FSK數據	無此項功能
	DT5:FSK1:TP14	語音 (有效CLI訊息)	正確接收FSK數據	無此項功能
	DT5:FSK1:TP15	語音 (有效CLI訊息)	正確接收FSK數據	無此項功能
4.6.2	DTMF信號檢測			
4.6.2.1	NIT狀態直流電阻： 在NIT (Number information transfer)狀態下 介於線路兩端之間直流電阻 應大於90 kΩ		設備無此項功能不需測試	
4.6.2.2	脫離NIT狀態： 當號碼資料傳送完成，終端設備應脫離 NIT狀態並隨振鈴作用回到靜止情況 終端設備至少需符合下列2及3脫離NIT狀態準則，號碼資料傳送視為完成： 1. 收到DTMF "C"碼(結束碼) 2. 收到振鈴信號 3. 收到DTMF碼之後暫停情況出現超過1秒		設備無此項功能不需測試	

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4.6.2.3	DTMF信號： 測試儀器傳送各種DTMF碼(如下表)之頻率、時序、位準及偏差特性容限信號予待測終端設備		設備無此項功能不需測試		不適用
	信號狀況	碼/號碼	結果	檢驗結果	
	DS1	TC2	正確接收號碼	無此項功能	
	DS2	TC2	正確接收號碼	無此項功能	
	DS3	TC2	正確接收號碼	無此項功能	
	DS4	TC2	正確接收號碼	無此項功能	
	DS5	TC2	正確接收號碼	無此項功能	
4.6.2.4	DTMF碼/號碼： 測試儀器傳送各種信號(如下表)予待測終端設備		設備無此項功能不需測試		不適用
	信號狀況	碼/號碼	標準	檢驗結果	
	DS1	TC1	正確接收號碼	無此項功能	
	DS1	TC3	來話顯示限制	無此項功能	
	DS1	TC4	來話顯示限制	無此項功能	
	檢驗儀器				
4.6.2.5	串接設備之防干擾： 當來話顯示終端設備並接的終端設備通話時，來話顯示終端設備不受干擾		設備無此項功能不需測試		不適用
4.7	自動重撥功能				
4.7.1	自動撥號功能				
4.7.1.1	自動重撥次數及時間限制 終端設備須於迴路閉合2秒鐘後，才可送出撥號信號 如果終端設備具備自動檢知撥號音後再送出撥號信號者，不受此限制		測試結果：2.23 s 附件27		符合
	重撥間隔時間須(含)一分鐘以上，可自動重撥(含)2次				不適用
	重撥間隔時間若(含)三分鐘以上，自動重撥次數不受限制		測試結果：182.407 s 附件28		符合
	通報火警、盜警等緊急通話設備，自動重撥次數不受限制				不適用
	檢驗儀器		TCA 8200		
4.7.1.2	自動撥號拆線時間限制		附件29		符合
	1. 撥叫後若偵測到忙音，須於20秒內拆線		測試結果：4.74 s		
	2. 撥叫後若偵測到回鈴音，須於2分鐘內拆線		測試結果：1.67 s		
	檢驗儀器		TCA 8200		

PSTN01 公眾交換電話網路終端設備技術規範			
章節	檢驗項目及標準	檢驗結果	判定
4.7.2	自動應答功能： 具備自動應答功能的終端設備需符合下列規定：		
	需於接收振鈴(含)三次之內，自動接 續完成	測試結果：附件30	符合
	呼叫端掛斷後(含)三秒之內，切斷直 流迴路 僅適用於具備數據機功能的終端設備	終端設備無數據機功能本項不需測試	不適用
	檢驗儀器	TCA 8200	

Test specification:	4.1.1 Basic requirements		
Test purpose:			
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/5/2020 11:14:31 AM		
Temperature: 22.4 °C	Air Pressure: 995 hPa	Relative Humidity: 52.6 %	Mains Power Supply:
Remarks: FK-514			

Test results

Standard reference	Requirement	Description	Verdict
4.1.1	1. The TE shall be an independent entity not belongs to Type 1 telecommunications enterprises and prohibited to modify Type 1 telecommunications enterprises equipment.		PASS
	2. Any additional functions shall not impact public telecom equipment switching, testing, transport and billing functions when TE is connected to Network.		PASS
	3. While the TE is damaged or malfunctioning, other connected equipment should be influenced continue to function properly.		PASS

Test specification:	4.1.2.1.1 Metallic Surge		
Test purpose:	Unit shall not cause harm to the network after two 800 V 100 A peak surges (one of each polarity) of a metallic voltage were applied		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/5/2020 11:14:38 AM		
Temperature: 22.4 °C	Air Pressure: 995 hPa	Relative Humidity: 52.6 %	Mains Power Supply:
Remarks: FK-514			

Test results

Test leads		On-hook		Off-hook	
		Normal	Inverse	Normal	Inverse
2-wire	Tip - Ring grounded	PASS	PASS	PASS	PASS
	Ring – Tip grounded	PASS	PASS	PASS	PASS

Test equipment used

Description	Manufacturer	Model	Serial No.	Due calibration
MegaPulse Metallic	Compliance West USA	MegaPulse Metallic Type A	430647	01/06/2021

Test specification:	4.1.2.1.2 Longitudinal Surge		
Test purpose:	Unit shall not cause harm to the network after two 1500 V 200 A peak surges (one of each polarity) of a longitudinal voltage were applied		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/5/2020 11:14:45 AM		
Temperature: 22.4 °C	Air Pressure: 995 hPa	Relative Humidity: 52.6 %	Mains Power Supply:
Remarks: FK-514			

Test results

Test leads	On-hook		Off-hook	
	Normal	Inverse	Normal	Inverse
Tip and Ring to GND	PASS	PASS	PASS	PASS

Test equipment used

Description	Manufacturer	Model	Serial No.	Due calibration
MegaPulse Long.	Compliance West USA	MegaPulse Long. Type A	430646	01/06/2021

Test specification:	4.1.2.2 AC Power Line Surge		
Test purpose:	Unit shall withstand without damage affecting compliance with the rules after six 2500-volt peak surges (three of each polarity) applied between the phase and neutral terminals of the AC power line		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/5/2020 11:14:52 AM		
Temperature: 22.4 °C	Air Pressure: 995 hPa	Relative Humidity: 52.6 %	Mains Power Supply:
Remarks: FK-514			

Test results

Test leads	On-hook		Off-hook	
	Normal polarity	Inverse polarity	Normal polarity	Inverse polarity
Phase - Neutral	PASS	PASS	PASS	PASS
Phase - Neutral	PASS	PASS	PASS	PASS
Phase - Neutral	PASS	PASS	PASS	PASS

Test equipment used

Description	Manufacturer	Model	Serial No.	Due calibration
MegaPulse Power-Line	Compliance West USA	MegaPulse Power-Line	430649	02/18/2021

Test specification:	4.1.3 Line Polarity		
Test purpose:	To make sure TE can work with the PSTN in two polarity connections		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/5/2020 11:15:00 AM		
Temperature: 22.4 °C	Air Pressure: 995 hPa	Relative Humidity: 52.6 %	Mains Power Supply:
Remarks: FK-514			

Test results

Standard reference	Requirement	Description	Verdict
4.1.3	Line polarity: Requirement: The two polarity connections of TE to PSTN shall comply with the requirements of this technical standard. Purpose: To make sure TE can work with the PSTN in two polarity connections. Test method: Where tests with both polarity connections are needed for this regulation.	Compliance tests in this test suite (project) were performed in both polarities.	PASS

Test specification:	4.1.4 Leakage current limitations		
Test purpose:	To verify the integrity of the dielectric barrier between the network and power line and the equipment connections of the EUT. The leakage current shall not exceed 10 mA peak when voltage of 1000 or 1500 Vrms is applied to the various connections of the EUT.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/5/2020 1:28:34 PM		
Temperature: 22.4 °C	Air Pressure: 995 hPa	Relative Humidity: 52.6 %	Mains Power Supply:
Remarks: 附件 1			

Test results

Test leads	Test voltage	Leakage current, mA	Limit, mA	Verdict
(1) and (3)	1000 V/60	0.667	10	PASS
(1) and (2)	1500 V/60	0.784	10	PASS
(2) and (3)	1500 V/60	4.47	10	PASS

- (1) Test point: All telephone connections.
 (2) Test point: All power connections.
 (3) Test point: All possible combinations of exposed conductive surfaces on the exterior of such equipment.

Test equipment used

Description	Manufacturer	Model	Serial No.	Due calibration
AC/DC Withstand Voltage Tester/Insulation	EXTECH	7142	1343447	09/10/2020

Test specification:	4.1.5.1(1) Insulation resistance between tip and ring		
Test purpose:	The insulation resistance between the test points shall be greater than 5 MOhm while apply 100 Vdc on the EUT		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 1:25:42 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 2			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Tip-Ring, Test voltage 1-200 V

Resistance in range 30 kohm - 10 Mohm ±0.8 %

Resistance in range 10- 30 Mohm ±2.5 %

Tip, Ring to Ground, Test voltage 5-500 V

Resistance in range 30 kohm - 1 Mohm ±1 %

Resistance in range 1 Mohm - 10 Mohm ±2 %

Resistance in range 10- 30 Mohm ±2.5 %

Current vs voltage, Resistance vs voltage

Voltage	Current	Resistance	Limit	Verdict
Condition 1: Test polarity: Normal, Meas. configuration: Tip - Ring				Pass
100 V	15.11 uA	6.66 MOhm	5 MOhm	Pass
Condition 2: Test polarity: Reverse, Meas. configuration: Tip - Ring				Pass
100 V	15.11 uA	6.66 MOhm	5 MOhm	Pass

Test specification:	4.1.5.1(2) Insulation resistance between telephone line and AC power		
Test purpose:	The insulation resistance between the test points shall be greater than 5 MOhm while apply 100 Vdc on the EUT		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 1:48:36 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 3			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Tip-Ring, Test voltage 1-200 V

Resistance in range 30 kohm - 10 Mohm ±0.8 %

Resistance in range 10- 30 Mohm ±2.5 %

Tip, Ring to Ground, Test voltage 5-500 V

Resistance in range 30 kohm - 1 Mohm ±1 %

Resistance in range 1 Mohm - 10 Mohm ±2 %

Resistance in range 10- 30 Mohm ±2.5 %

Current vs voltage, Resistance vs voltage

Voltage	Current	Resistance	Limit	Verdict
Condition 1: Test polarity: Normal				Pass
100 V	< 50.00 nA	> 100 MOhm	5 MOhm	Pass
Condition 2: Test polarity: Reverse				Pass
100 V	< 50.00 nA	> 100 MOhm	5 MOhm	Pass

Test specification:	4.1.5.1(3) Insulation resistance between telephone line and earth		
Test purpose:	The insulation resistance between the test points shall be greater than 5 MOhm while apply 100 Vdc on the EUT		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 1:50:29 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 4			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Tip-Ring, Test voltage 1-200 V

Resistance in range 30 kohm - 10 Mohm ±0.8 %

Resistance in range 10- 30 Mohm ±2.5 %

Tip, Ring to Ground, Test voltage 5-500 V

Resistance in range 30 kohm - 1 Mohm ±1 %

Resistance in range 1 Mohm - 10 Mohm ±2 %

Resistance in range 10- 30 Mohm ±2.5 %

Current vs voltage, Resistance vs voltage

Voltage	Current	Resistance	Limit	Verdict
Condition 1: Test polarity: Normal				Pass
100 V	< 50.00 nA	> 100 MOhm	5 MOhm	Pass
Condition 2: Test polarity: Normal				Pass
100 V	< 50.00 nA	> 100 MOhm	5 MOhm	Pass

Test specification:	4.1.6.1 Response to ringing signal		
Test purpose:	To verify the TE has to provide a minimum ringing response characters		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 1:57:01 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 5			

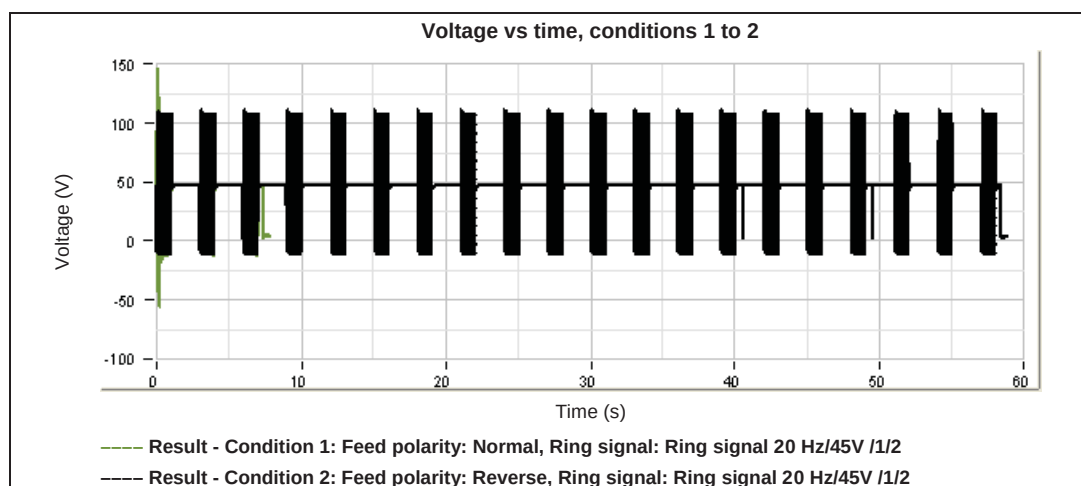
Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Ringing voltage	±1.6 %
Ringing frequency	±0.01 %
Timing	±37 ms

General parameters

Parameter	Value
Feed voltage	48 V
Series resistance	5 kOhm

**Response time, Sensitivity**

Time	Sensitivity	Limit	Verdict
Condition 1: Feed polarity: Normal, Ring signal: Ring signal 20 Hz/45V /1/2			
7.48 s	Sensitive	Sensitive	Pass
Condition 2: Feed polarity: Reverse, Ring signal: Ring signal 20 Hz/45V /1/2			
58.48 s	Sensitive	Sensitive	Pass

Test specification:	4.1.6.2 Ringing Impedance		
Test purpose:	The ringing impedance of the terminal equipment at ringing signal 20 Hz, 75 Vrms shall not be less than 5 KOhm and capacitance shall be less than 3.0 μ F		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:01:04 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 6			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

DC current	±2.6 %
AC current	±0.72 %
Phase	±0.43 %
Impedance	±1.69 %

General parameters

Parameter	Value
Feed voltage	48 V
Ring frequency	20.00 Hz
Ring level	75.00 Vrms

AC Current, Phase, Impedance, Capacitance

Current	Phase	Impedance	Limit	Capacitance	Verdict
					Pass
1.67 mA	-23.68 Deg	45.72 KOhm	5 KOhm	69.90 nF	Pass

Test specification:	4.1.6.3 On-hook AC impedance		
Test purpose:	To prevent the interference to other TE connecting with in parallel. While EUT is at on-hook state loaded with 3 Vrms, 200 Hz – 3200 Hz AC signal on the telephone line, the AC impedance shall be in the acceptable region of Figure 7.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:02:40 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 7			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

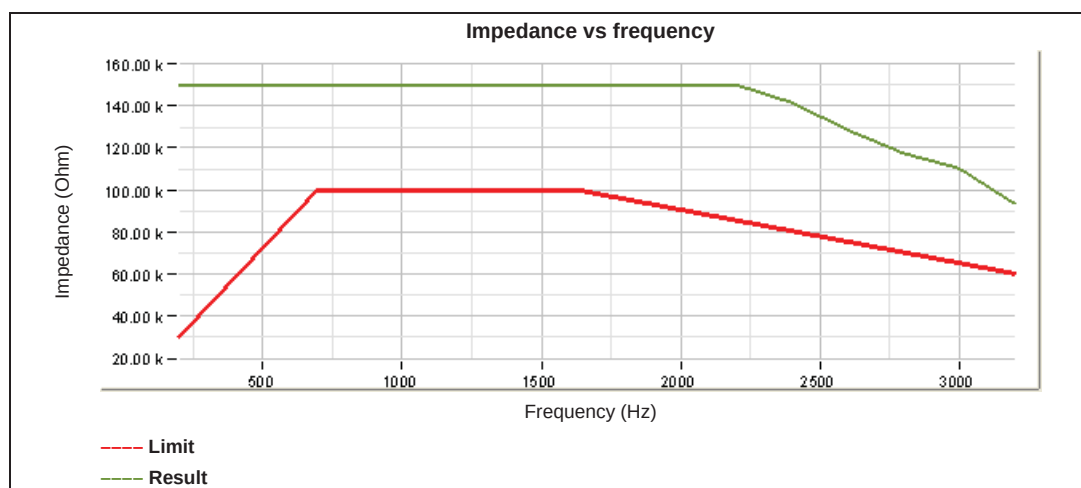
Impedance ±3.6 %

General parameters

Parameter	Value
Feed polarity	Normal
Series resistance	10 kOhm
Feed voltage	48 V
Stimulus level	3 V

Test ranges

Stimulus frequency		
Start	Stop	Step
200.00 Hz	3.20 kHz	200.00 Hz



Test specification:	4.1.6.3 On-hook AC impedance		
Test purpose:	To prevent the interference to other TE connecting with in parallel. While EUT is at on-hook state loaded with 3 Vrms, 200 Hz – 3200 Hz AC signal on the telephone line, the AC impedance shall be in the acceptable region of Figure 7.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:02:40 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 7			

Impedance vs frequency

Frequency	Impedance	Limit	Verdict
			Pass
200 Hz	> 150.00 kOhm	30 kOhm	Pass
400 Hz	> 150.00 kOhm	58.17 kOhm	Pass
600 Hz	> 150.00 kOhm	86.34 kOhm	Pass
800 Hz	> 150.00 kOhm	100 kOhm	Pass
1000 Hz	> 150.00 kOhm	100 kOhm	Pass
1200 Hz	> 150.00 kOhm	100 kOhm	Pass
1400 Hz	> 150.00 kOhm	100 kOhm	Pass
1600 Hz	> 150.00 kOhm	100 kOhm	Pass
1800 Hz	> 150.00 kOhm	95.74 kOhm	Pass
2000 Hz	> 150.00 kOhm	90.63 kOhm	Pass
2200 Hz	> 150.00 kOhm	85.53 kOhm	Pass
2400 Hz	141.36 kOhm	80.42 kOhm	Pass
2600 Hz	128.68 kOhm	75.32 kOhm	Pass
2800 Hz	117.54 kOhm	70.21 kOhm	Pass
3000 Hz	110.03 kOhm	65.11 kOhm	Pass
3200 Hz	93.32 kOhm	60 kOhm	Pass

Test specification:	4.1.7 Off-hook DC resistance		
Test purpose:	To verify the steady state DC loop characteristics. The DC voltage to loop current characteristics of the TE during the any operating function of off-hook state shall appear on the acceptable region shown in Fig.9.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:04:16 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 8			

Measurement uncertainty

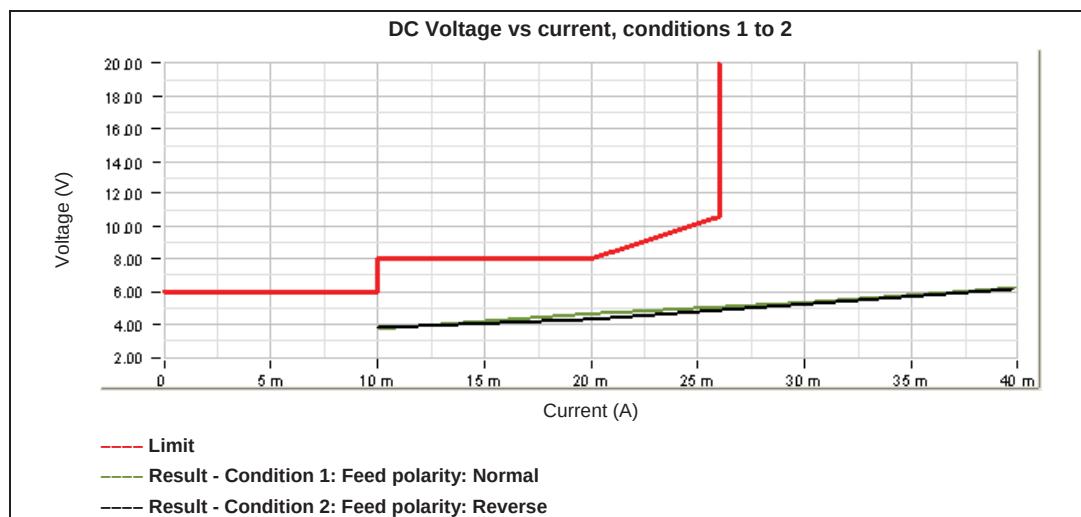
Expanded uncertainty, k=2 (95 % confidence):

Current ±0.89 %

Voltage ±0.72 %

General parameters

Parameter	Value
Feed voltage	48 V

**DC Voltage vs current**

Current	Voltage	Verdict
Condition 1: Feed polarity: Normal		
10 mA	3.74 V	Pass
20 mA	4.70 V	Pass
30 mA	5.32 V	-
40 mA	6.28 V	-

Test specification:	4.1.7 Off-hook DC resistance		
Test purpose:	To verify the steady state DC loop characteristics. The DC voltage to loop current characteristics of the TE during the any operating function of off-hook state shall appear on the acceptable region shown in Fig.9.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:04:16 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 8			

Current	Voltage	Verdict
Condition 2: Feed polarity: Reverse		
10 mA	3.85 V	Pass
20 mA	4.32 V	Pass
30 mA	5.27 V	-
40 mA	6.21 V	-

Test specification:	4.1.8 Sending level limitations of signals (200 Hz - 4 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 200 Hz - 4 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:05:24 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 9			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

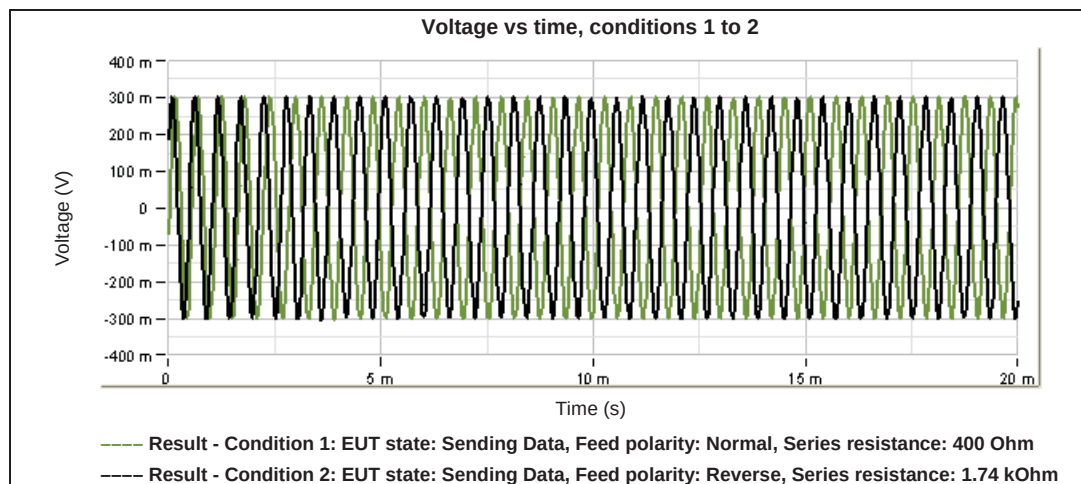
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

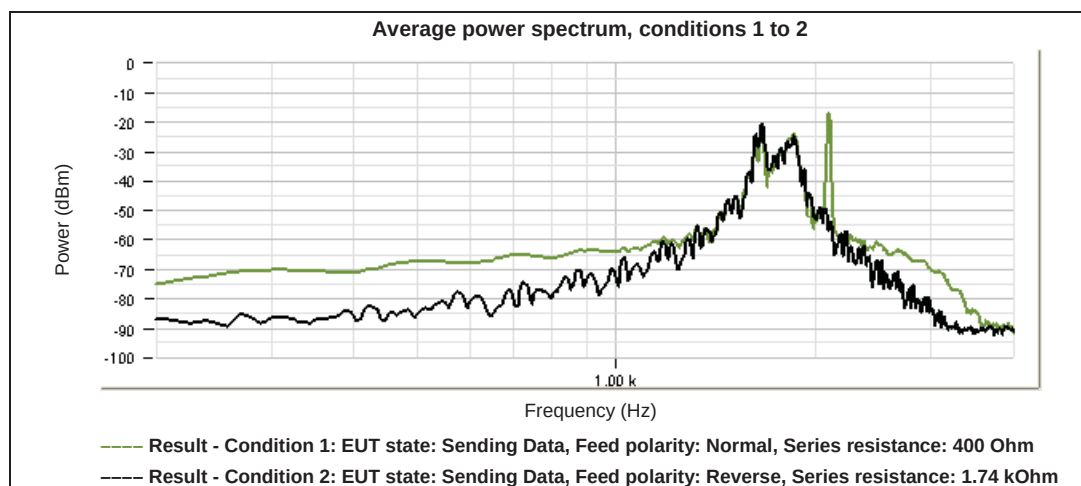
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
200.00 Hz	4.00 kHz	Resolution bandwidth = 30.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (200 Hz - 4 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 200 Hz - 4 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:05:24 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 9			

**Maximum averaged signal power**

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-11.13 dBm	-10 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-11.16 dBm	-10 dBm	Pass

Test specification:	4.1.8 Sending level limitations of signals (4 kHz to 8 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 4 kHz - 8 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:06:35 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 10			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

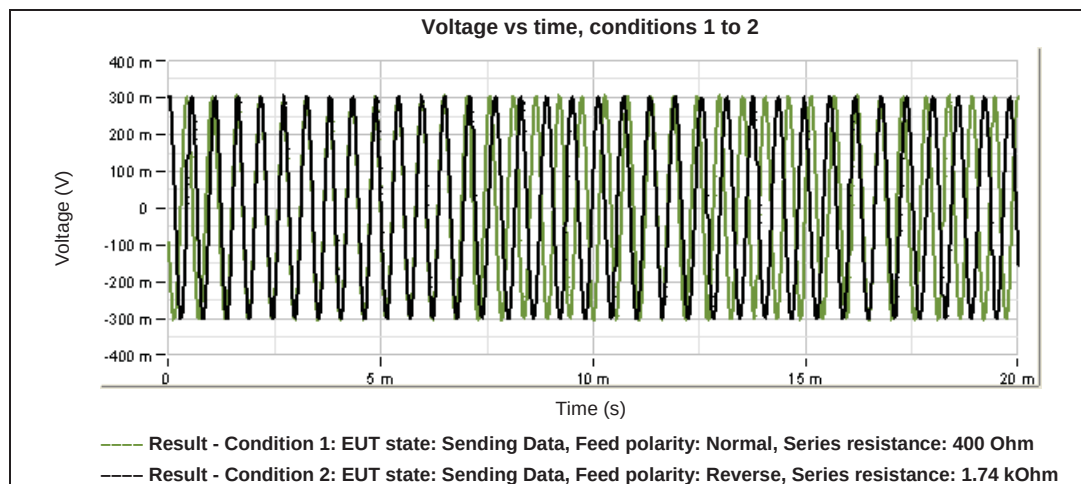
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

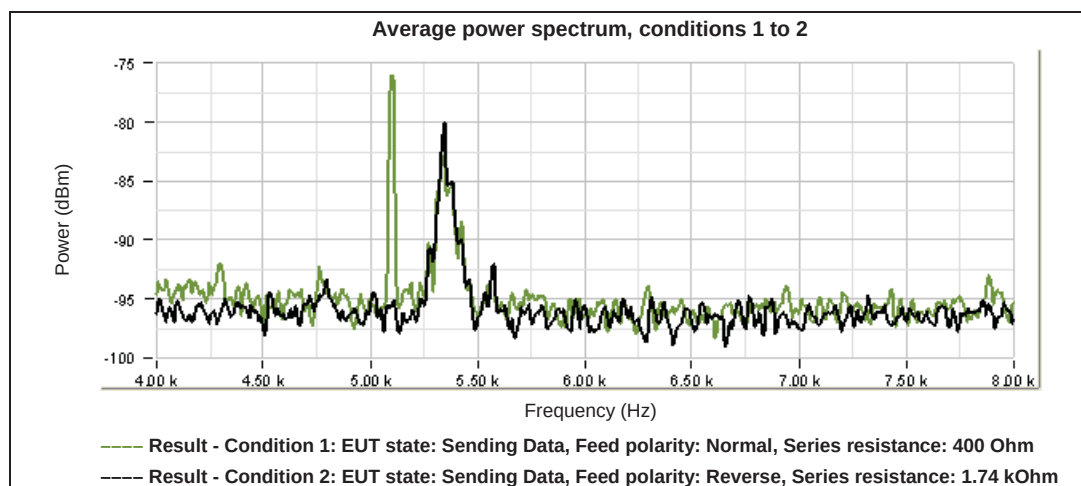
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
4.00 kHz	8.00 kHz	Resolution bandwidth = 30.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (4 kHz to 8 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 4 kHz - 8 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:06:35 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 10			

**Maximum averaged signal power**

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-66.58 dBm	-20 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-67.64 dBm	-20 dBm	Pass

Test specification:	4.1.8 Sending level limitations of signals (8 kHz to 12 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 8 kHz to 12 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:07:46 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 11			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

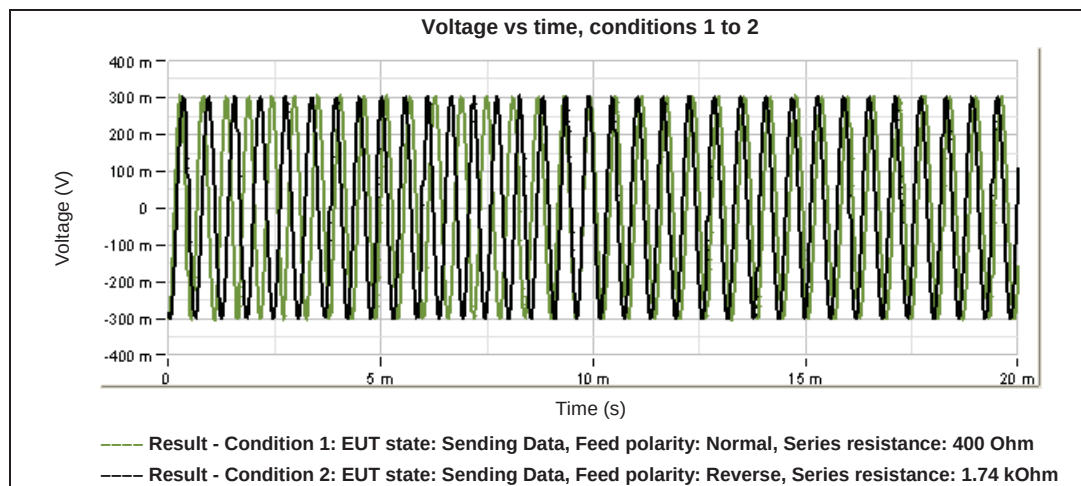
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

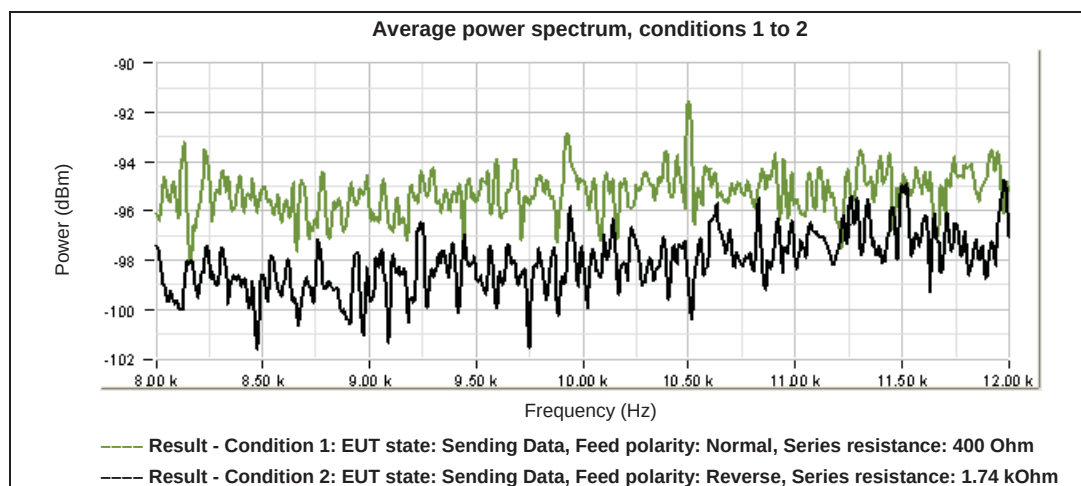
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
8.00 kHz	12.00 kHz	Resolution bandwidth = 30.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (8 kHz to 12 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 8 kHz to 12 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:07:46 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 11			



Maximum averaged signal power

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-71.4 dBm	-40 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-74.33 dBm	-40 dBm	Pass

Test specification:	4.1.8 Sending level limitations of signals (12 kHz to 16 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 12 kHz to 16 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:08:41 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 12			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

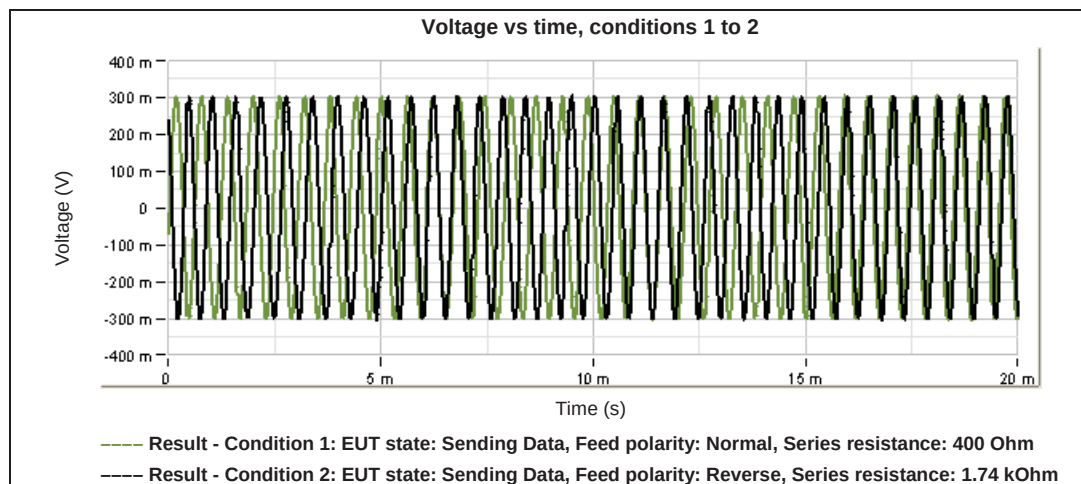
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

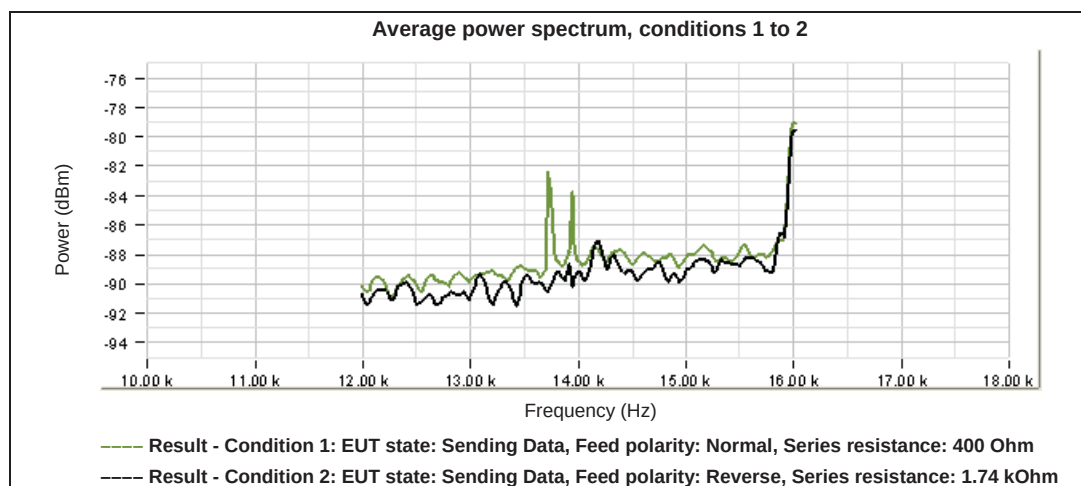
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
12.00 kHz	16.00 kHz	Resolution bandwidth = 100.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (12 kHz to 16 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 12 kHz to 16 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:08:41 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 12			



Maximum averaged signal power

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-69.92 dBm	-60 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-70.85 dBm	-60 dBm	Pass

Test specification:	4.1.8 Sending level limitations of signals (16 kHz to 20 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 16 kHz to 20 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:09:44 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 13			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

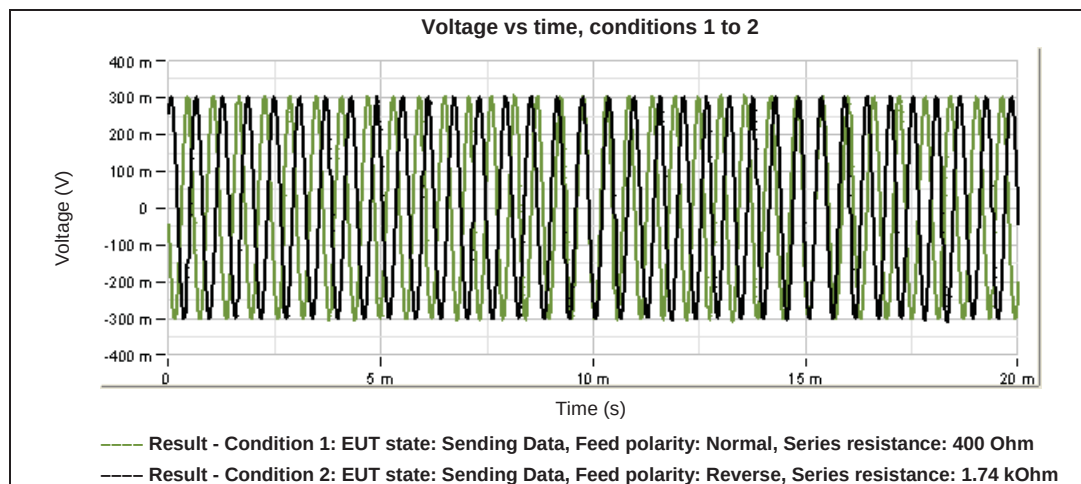
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

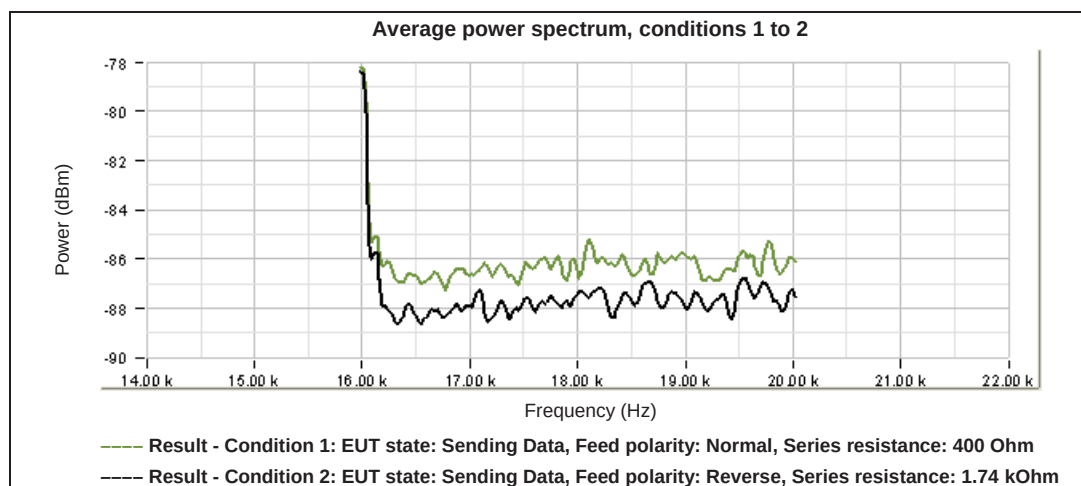
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
16.00 kHz	20.00 kHz	Resolution bandwidth = 100.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (16 kHz to 20 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 16 kHz to 20 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:09:44 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 13			



Maximum averaged signal power

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-67.92 dBm	-60 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-68.97 dBm	-60 dBm	Pass

Test specification:	4.1.8 Sending level limitations of signals (20 kHz to 24 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 20 kHz to 24 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:10:46 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 14			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

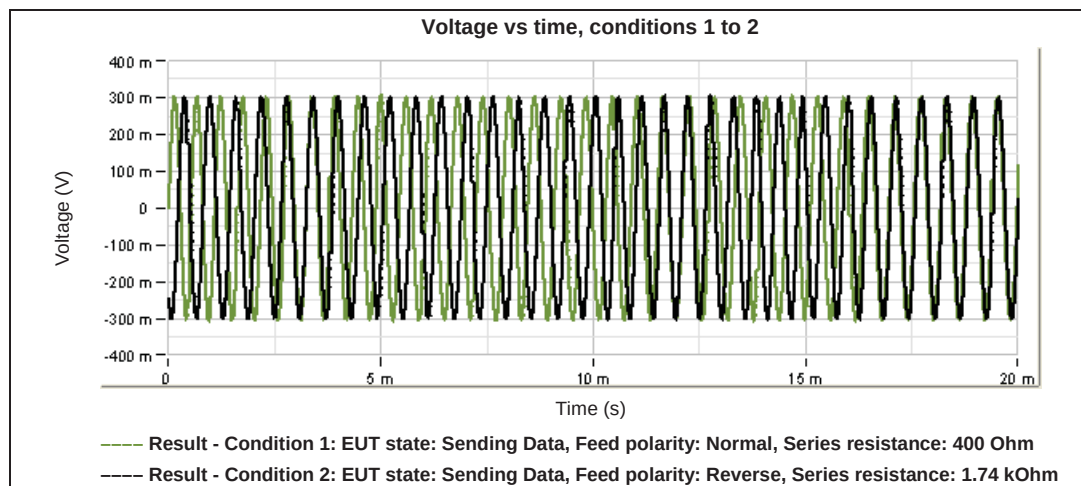
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

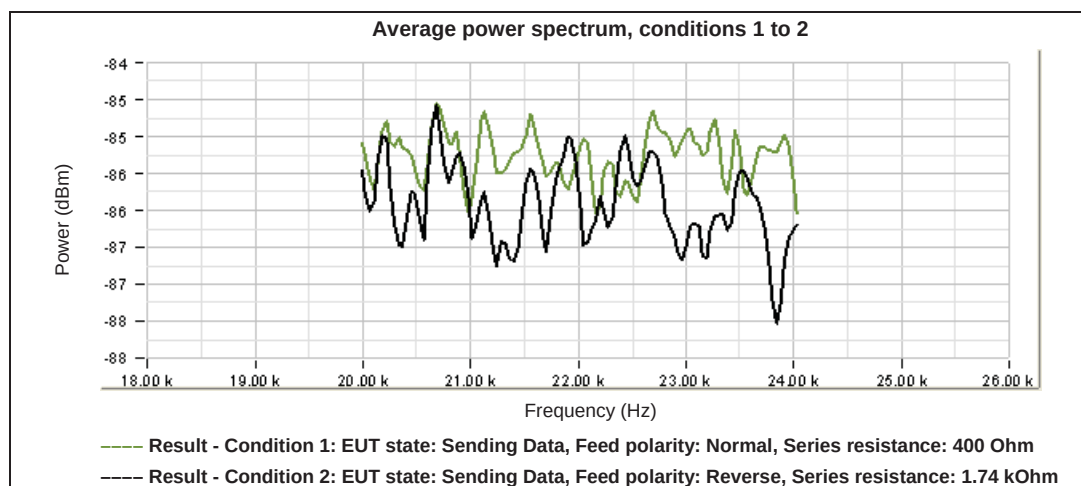
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
20.00 kHz	24.00 kHz	Resolution bandwidth = 100.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (20 kHz to 24 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 20 kHz to 24 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:10:46 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 14			



Maximum averaged signal power

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-69.25 dBm	-60 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-69.09 dBm	-60 dBm	Pass

Test specification:	4.1.8 Sending level limitations of signals (24 kHz to 28 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 24 kHz to 28 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:12:24 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 15			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

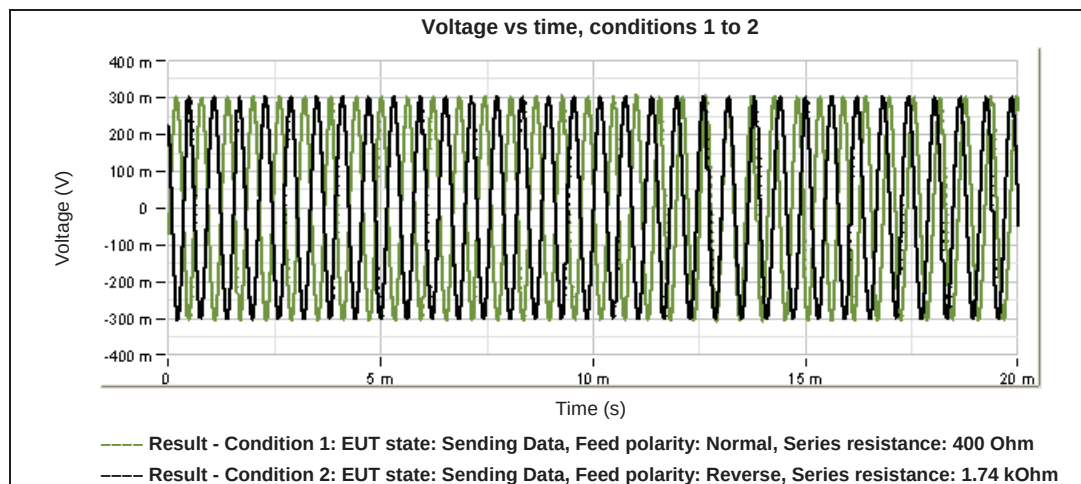
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

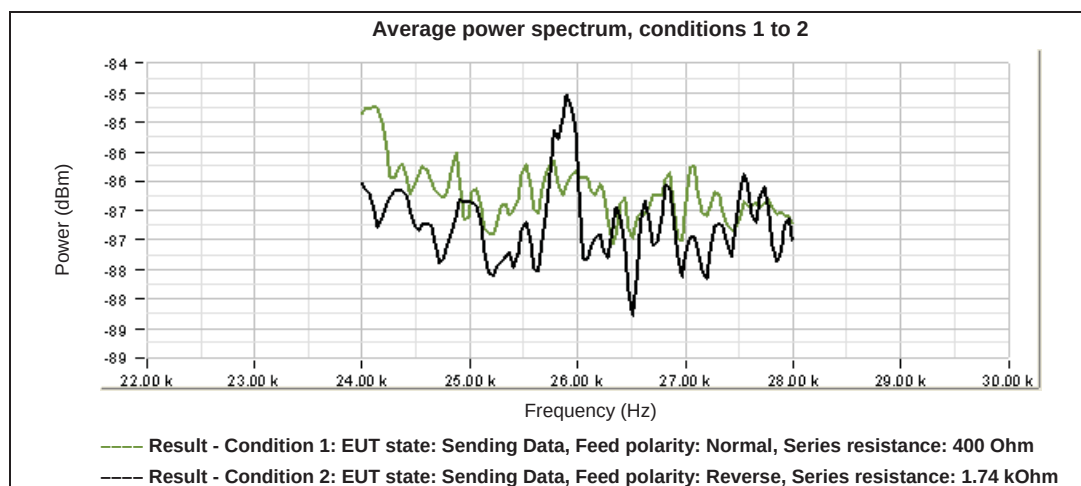
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
24.00 kHz	28.00 kHz	Resolution bandwidth = 100.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (24 kHz to 28 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 24 kHz to 28 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:12:24 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 15			



Maximum averaged signal power

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-70 dBm	-60 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-70.53 dBm	-60 dBm	Pass

Test specification:	4.1.8 Sending level limitations of signals (28 kHz to 32 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 28 kHz to 32 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:13:25 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 16			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

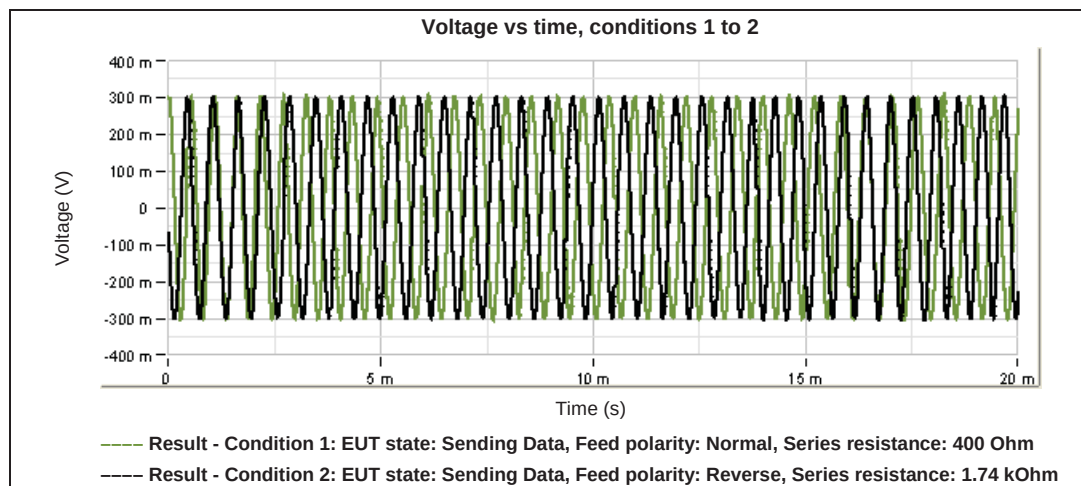
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

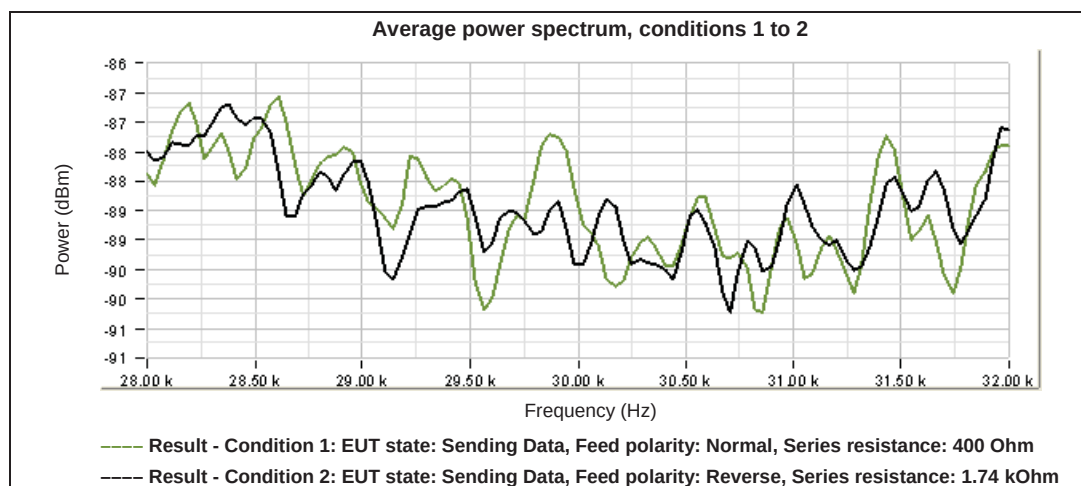
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
28.00 kHz	32.00 kHz	Resolution bandwidth = 100.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (28 kHz to 32 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 28 kHz to 32 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:13:25 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 16			



Maximum averaged signal power

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-72.26 dBm	-60 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-71.09 dBm	-60 dBm	Pass

Test specification:	4.1.8 Sending level limitations of signals (32 kHz to 36 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 32 kHz to 36 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:14:21 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 17			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

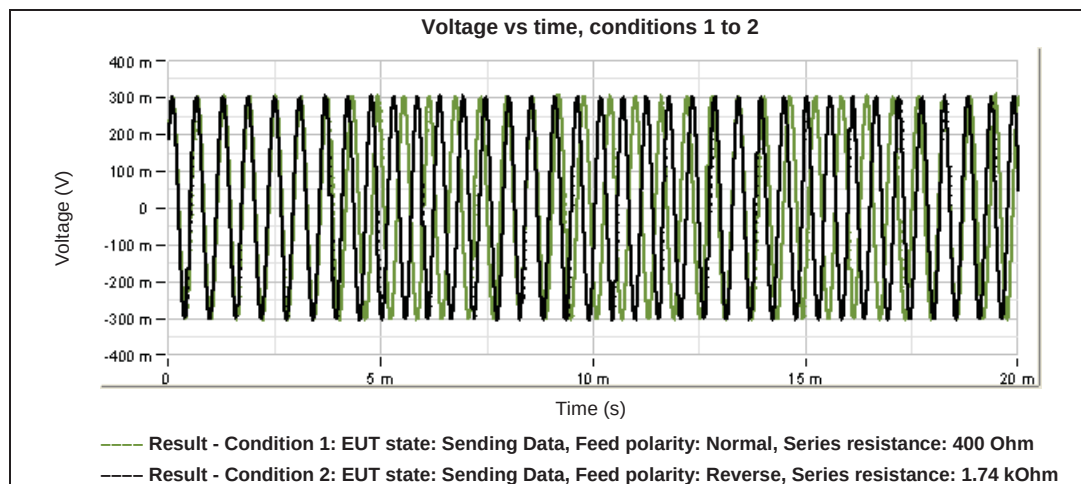
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

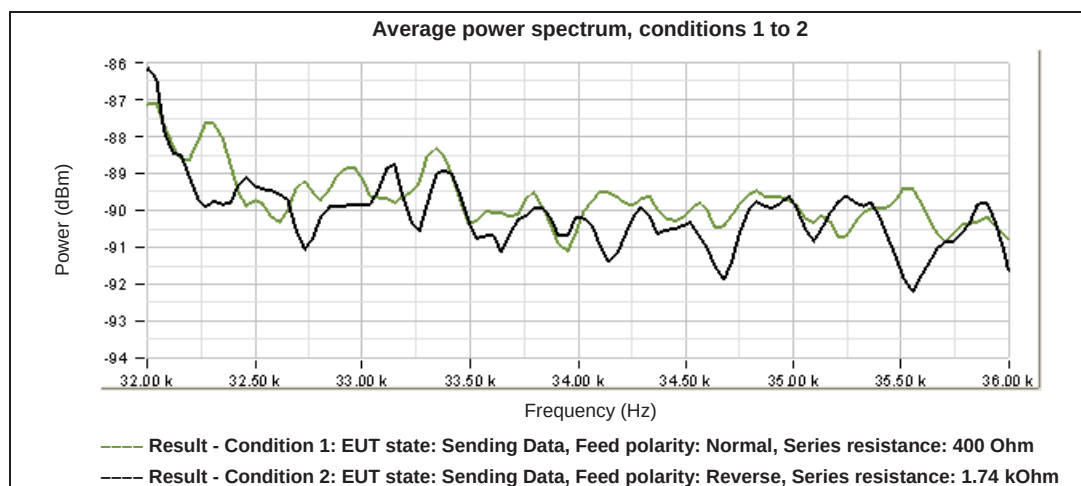
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
32.00 kHz	36.00 kHz	Resolution bandwidth = 100.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (32 kHz to 36 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 32 kHz to 36 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:14:21 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 17			



Maximum averaged signal power

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-73.34 dBm	-60 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-74.05 dBm	-60 dBm	Pass

Test specification:	4.1.8 Sending level limitations of signals (36 kHz to 40 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 36 kHz to 40 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:15:24 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 18			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

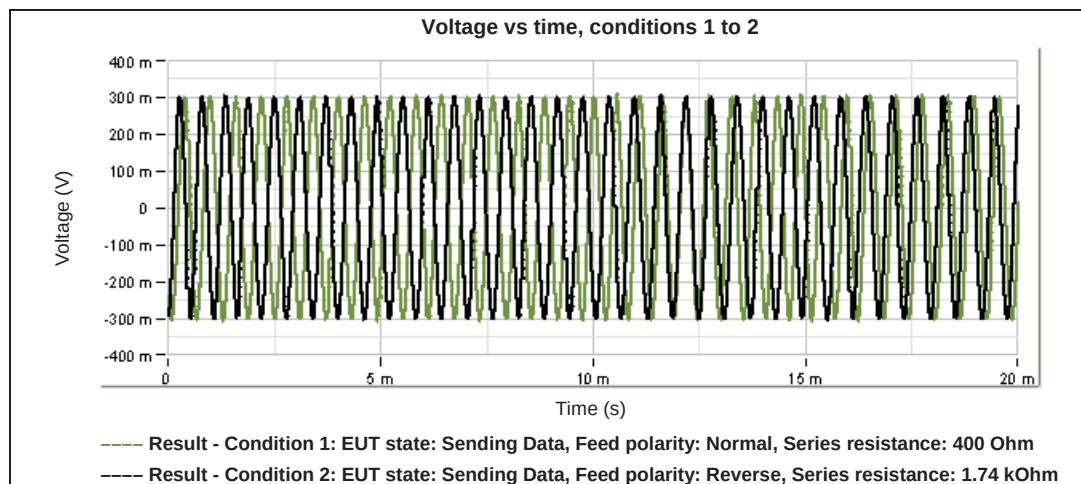
Signal power level (20 Hz - 300 kHz)	±0.1 dB
Signal power level (300 kHz - 30 MHz)	±2.52 dB
Peak to peak voltage (frequency 10 Hz - 5 kHz)	±0.22 %

General parameters

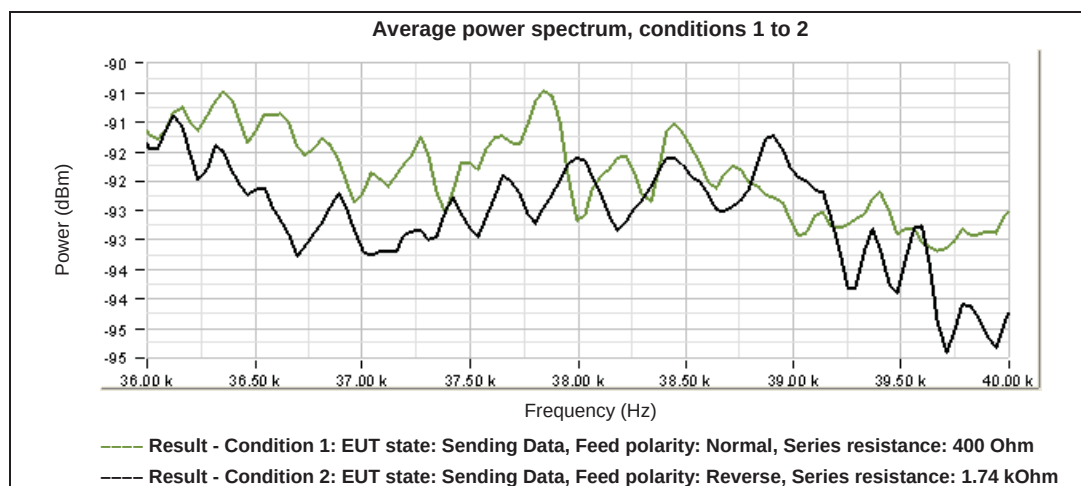
Parameter	Value
Feed voltage	48 V

Test ranges

Frequency		Acquisition settings	Termination
Start	Stop		
36.00 kHz	40.00 kHz	Resolution bandwidth = 100.00 Hz, Averaging interval = 200.00 ms, Overall meas. time = 60 s	600 Ohm



Test specification:	4.1.8 Sending level limitations of signals (36 kHz to 40 kHz)		
Test purpose:	To verify that the voice band signal power and out-band noise from internal sources, other than DTMF, which will be sent to public switched telephone network are properly limited in the 36 kHz to 40 kHz frequency range.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:15:24 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 18			



Maximum averaged signal power

Maximum averaged signal power	Limit	Verdict
Condition 1: EUT state: Sending Data, Feed polarity: Normal, Series resistance: 400 Ohm		Pass
-75.29 dBm	-60 dBm	Pass
Condition 2: EUT state: Sending Data, Feed polarity: Reverse, Series resistance: 1.74 kOhm		Pass
-75.71 dBm	-60 dBm	Pass

Test specification:	4.1.9 Transverse balance limitations		
Test purpose:	To ensure the impedance unbalance about earth, expressed as output signal balance. The minimum transverse balance in the off-hook state shall be 40 dB in 200 Hz – 4 kHz frequency range. In the on-hook state it shall be 60 dB in 200 Hz – 1 kHz range and 40 dB in 1 – 4 kHz		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:22:25 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 19			

Measurement uncertainty

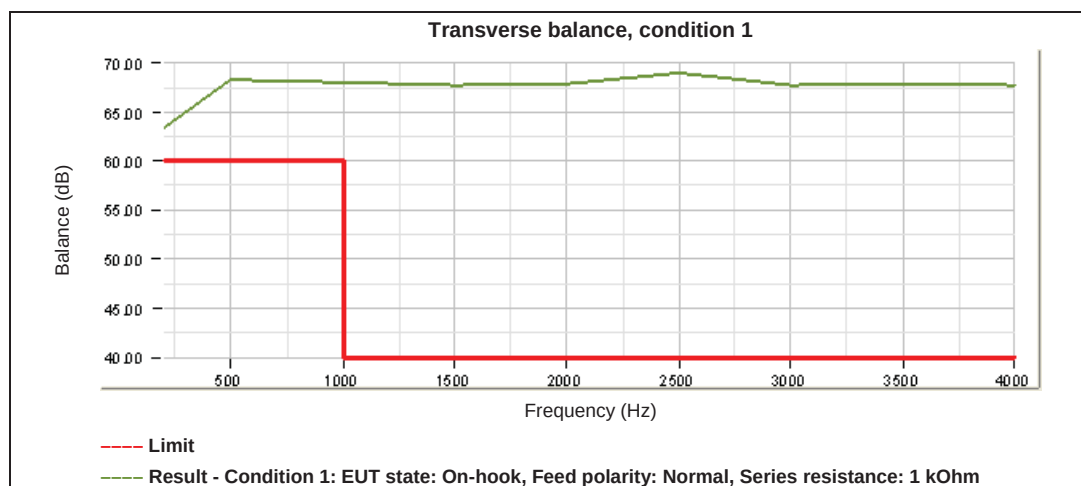
Expanded uncertainty, k=2 (95 % confidence):

Balance (0 to 50 dB) ±0.84 dB

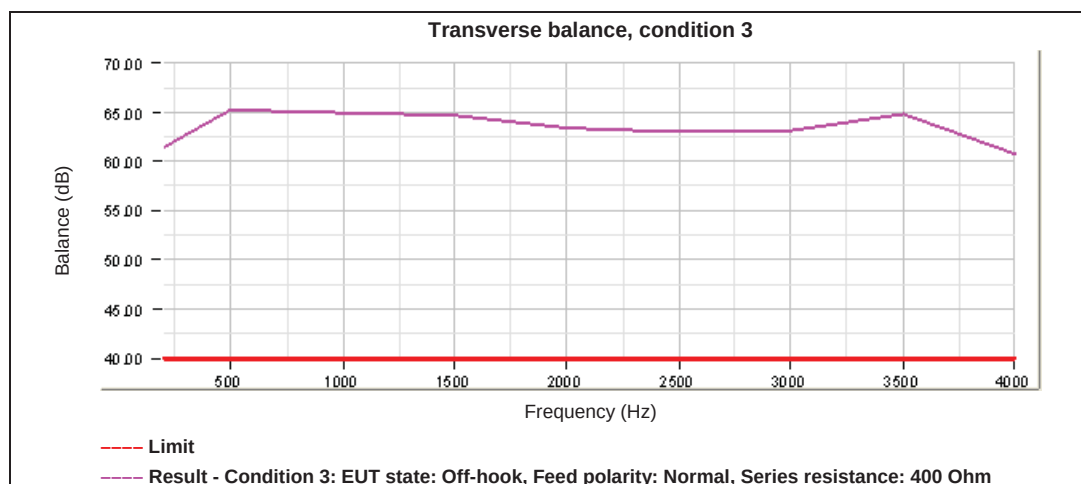
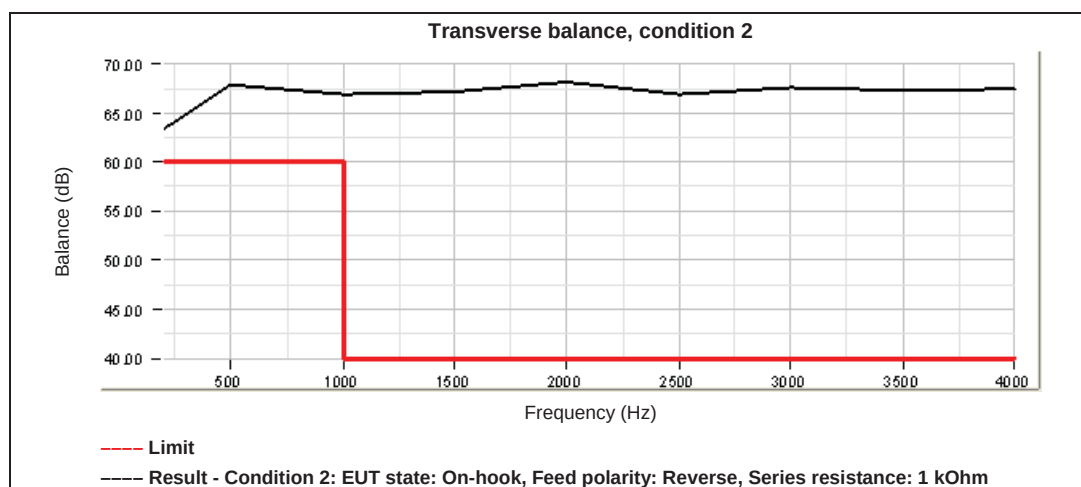
Balance (50 to 70 dB) ±1.89 dB

General parameters

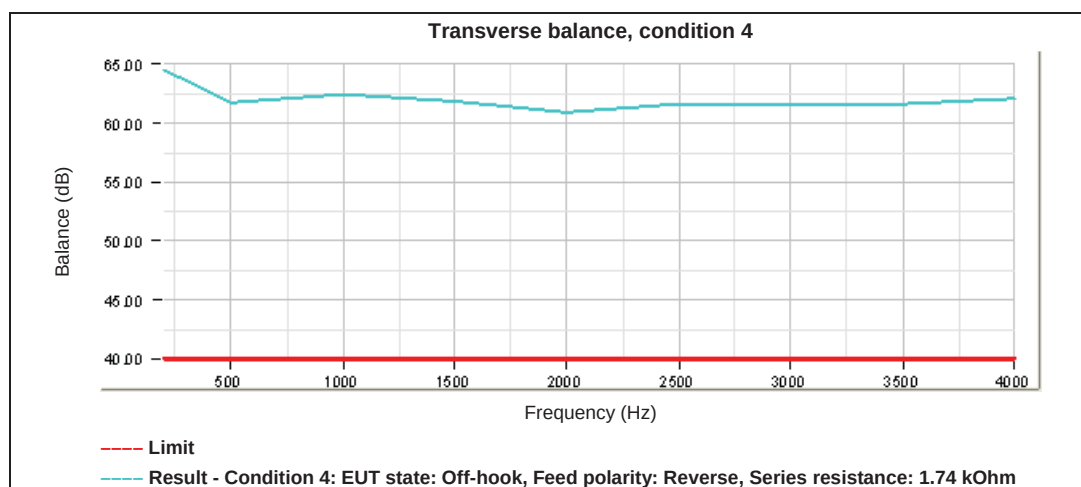
Parameter	Value
Feed voltage	48 V
Stimulus level	775 mV



Test specification:	4.1.9 Transverse balance limitations		
Test purpose:	To ensure the impedance unbalance about earth, expressed as output signal balance. The minimum transverse balance in the off-hook state shall be 40 dB in 200 Hz – 4 kHz frequency range. In the on-hook state it shall be 60 dB in 200 Hz – 1 kHz range and 40 dB in 1 – 4 kHz		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:22:25 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 19			



Test specification:	4.1.9 Transverse balance limitations		
Test purpose:	To ensure the impedance unbalance about earth, expressed as output signal balance. The minimum transverse balance in the off-hook state shall be 40 dB in 200 Hz – 4 kHz frequency range. In the on-hook state it shall be 60 dB in 200 Hz – 1 kHz range and 40 dB in 1 – 4 kHz		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:22:25 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 19			

**Transverse balance**

Frequency	Balance	Limit	Verdict
Condition 1: EUT state: On-hook, Feed polarity: Normal, Series resistance: 1 kOhm			
200 Hz	63.34 dB	60 dB	Pass
500 Hz	68.26 dB	60 dB	Pass
1000 Hz	68.06 dB	60 dB	Pass
1500 Hz	67.69 dB	40 dB	Pass
2000 Hz	67.83 dB	40 dB	Pass
2500 Hz	69.00 dB	40 dB	Pass
3000 Hz	67.71 dB	40 dB	Pass
3500 Hz	67.90 dB	40 dB	Pass
4000 Hz	67.68 dB	40 dB	Pass

Test specification:	4.1.9 Transverse balance limitations		
Test purpose:	To ensure the impedance unbalance about earth, expressed as output signal balance. The minimum transverse balance in the off-hook state shall be 40 dB in 200 Hz – 4 kHz frequency range. In the on-hook state it shall be 60 dB in 200 Hz – 1 kHz range and 40 dB in 1 – 4 kHz		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 2:22:25 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 19			

Frequency	Balance	Limit	Verdict
Condition 2: EUT state: On-hook, Feed polarity: Reverse, Series resistance: 1 kOhm			
200 Hz	63.41 dB	60 dB	Pass
500 Hz	67.87 dB	60 dB	Pass
1000 Hz	66.94 dB	60 dB	Pass
1500 Hz	67.23 dB	40 dB	Pass
2000 Hz	68.10 dB	40 dB	Pass
2500 Hz	66.94 dB	40 dB	Pass
3000 Hz	67.60 dB	40 dB	Pass
3500 Hz	67.25 dB	40 dB	Pass
4000 Hz	67.39 dB	40 dB	Pass
Condition 3: EUT state: Off-hook, Feed polarity: Normal, Series resistance: 400 Ohm			
200 Hz	61.39 dB	40 dB	Pass
500 Hz	65.15 dB	40 dB	Pass
1000 Hz	64.94 dB	40 dB	Pass
1500 Hz	64.60 dB	40 dB	Pass
2000 Hz	63.35 dB	40 dB	Pass
2500 Hz	62.92 dB	40 dB	Pass
3000 Hz	63.11 dB	40 dB	Pass
3500 Hz	64.73 dB	40 dB	Pass
4000 Hz	60.78 dB	40 dB	Pass
Condition 4: EUT state: Off-hook, Feed polarity: Reverse, Series resistance: 1.74 kOhm			
200 Hz	64.58 dB	40 dB	Pass
500 Hz	61.69 dB	40 dB	Pass
1000 Hz	62.40 dB	40 dB	Pass
1500 Hz	61.81 dB	40 dB	Pass
2000 Hz	60.89 dB	40 dB	Pass
2500 Hz	61.58 dB	40 dB	Pass
3000 Hz	61.57 dB	40 dB	Pass
3500 Hz	61.61 dB	40 dB	Pass
4000 Hz	62.09 dB	40 dB	Pass

Test specification:	4.1.10 Return loss		
Test purpose:	To assured by requiring the TE to present a impedance which allows proper functioning of call control and to maintain stability in the PSTN.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/5/2020 10:25:42 AM		
Temperature: 22.4 °C	Air Pressure: 995 hPa	Relative Humidity: 52.6 %	Mains Power Supply:
Remarks: 附件 20			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Impedance (50 to 2000 ohm) ±0.42 %

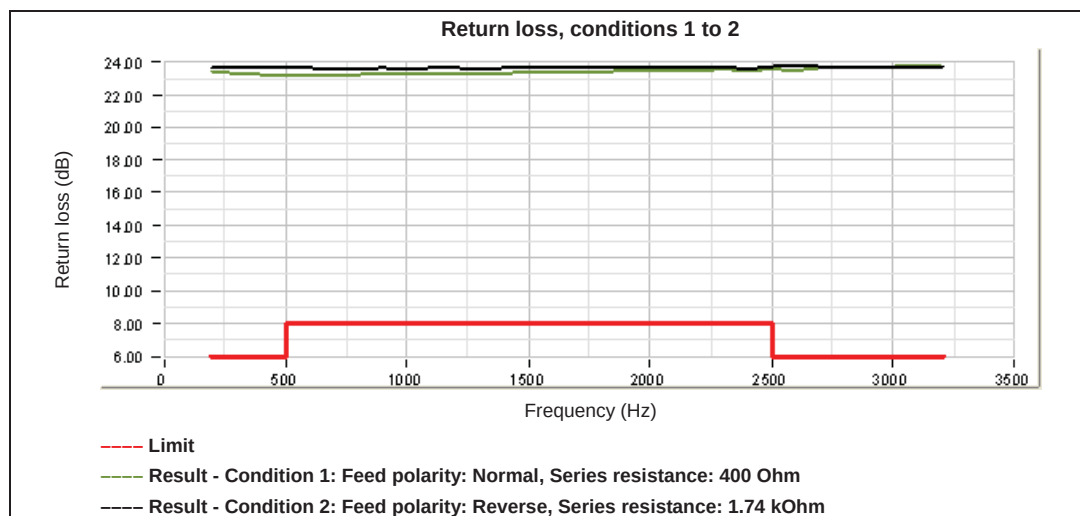
Phase (50 to 2000 ohm) ±0.5 %

Return Loss (0 to 30 dB RL) ±0.32 dB

Return Loss (30 to 40 dB RL) ±1.3 dB

General parameters

Parameter	Value
Termination	600 Ohm
Feed voltage	48 V
Test Voltage	316 mV



Test specification:	4.1.10 Return loss		
Test purpose:	To assured by requiring the TE to present a impedance which allows proper functioning of call control and to maintain stability in the PSTN.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/5/2020 10:25:42 AM		
Temperature: 22.4 °C	Air Pressure: 995 hPa	Relative Humidity: 52.6 %	Mains Power Supply:
Remarks: 附件 20			

Return loss

Frequency	Return loss	Limit	Verdict
Condition 1: Feed polarity: Normal, Series resistance: 400 Ohm			Pass
200 Hz	23.37 dB	6 dB	Pass
300 Hz	23.27 dB	6 dB	Pass
400 Hz	23.20 dB	6 dB	Pass
500 Hz	23.25 dB	6 dB	Pass
600 Hz	23.25 dB	8 dB	Pass
700 Hz	23.25 dB	8 dB	Pass
800 Hz	23.23 dB	8 dB	Pass
900 Hz	23.27 dB	8 dB	Pass
1000 Hz	23.27 dB	8 dB	Pass
1100 Hz	23.29 dB	8 dB	Pass
1200 Hz	23.31 dB	8 dB	Pass
1300 Hz	23.29 dB	8 dB	Pass
1400 Hz	23.33 dB	8 dB	Pass
1500 Hz	23.35 dB	8 dB	Pass
1600 Hz	23.35 dB	8 dB	Pass
1700 Hz	23.39 dB	8 dB	Pass
1800 Hz	23.40 dB	8 dB	Pass
1900 Hz	23.44 dB	8 dB	Pass
2000 Hz	23.49 dB	8 dB	Pass
2100 Hz	23.46 dB	8 dB	Pass
2200 Hz	23.50 dB	8 dB	Pass
2300 Hz	23.55 dB	8 dB	Pass
2400 Hz	23.46 dB	8 dB	Pass
2500 Hz	23.57 dB	8 dB	Pass
2600 Hz	23.48 dB	6 dB	Pass
2700 Hz	23.61 dB	6 dB	Pass
2800 Hz	23.65 dB	6 dB	Pass
2900 Hz	23.72 dB	6 dB	Pass
3000 Hz	23.73 dB	6 dB	Pass
3100 Hz	23.78 dB	6 dB	Pass
3200 Hz	23.74 dB	6 dB	Pass

Test specification:	4.1.10 Return loss		
Test purpose:	To assured by requiring the TE to present a impedance which allows proper functioning of call control and to maintain stability in the PSTN.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/5/2020 10:25:42 AM		
Temperature: 22.4 °C	Air Pressure: 995 hPa	Relative Humidity: 52.6 %	Mains Power Supply:
Remarks: 附件 20			

Frequency	Return loss	Limit	Verdict
Condition 2: Feed polarity: Reverse, Series resistance: 1.74 kOhm			Pass
200 Hz	23.63 dB	6 dB	Pass
300 Hz	23.62 dB	6 dB	Pass
400 Hz	23.64 dB	6 dB	Pass
500 Hz	23.60 dB	6 dB	Pass
600 Hz	23.60 dB	8 dB	Pass
700 Hz	23.59 dB	8 dB	Pass
800 Hz	23.57 dB	8 dB	Pass
900 Hz	23.60 dB	8 dB	Pass
1000 Hz	23.59 dB	8 dB	Pass
1100 Hz	23.60 dB	8 dB	Pass
1200 Hz	23.61 dB	8 dB	Pass
1300 Hz	23.58 dB	8 dB	Pass
1400 Hz	23.62 dB	8 dB	Pass
1500 Hz	23.63 dB	8 dB	Pass
1600 Hz	23.64 dB	8 dB	Pass
1700 Hz	23.65 dB	8 dB	Pass
1800 Hz	23.64 dB	8 dB	Pass
1900 Hz	23.66 dB	8 dB	Pass
2000 Hz	23.65 dB	8 dB	Pass
2100 Hz	23.67 dB	8 dB	Pass
2200 Hz	23.69 dB	8 dB	Pass
2300 Hz	23.70 dB	8 dB	Pass
2400 Hz	23.57 dB	8 dB	Pass
2500 Hz	23.73 dB	8 dB	Pass
2600 Hz	23.78 dB	6 dB	Pass
2700 Hz	23.70 dB	6 dB	Pass
2800 Hz	23.70 dB	6 dB	Pass
2900 Hz	23.72 dB	6 dB	Pass
3000 Hz	23.72 dB	6 dB	Pass
3100 Hz	23.72 dB	6 dB	Pass
3200 Hz	23.72 dB	6 dB	Pass

Test specification:	4.1.11 Pulse dialing		
Test purpose:	To assure effective pulse dialing of TE to PSTN.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:31:27 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 21			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

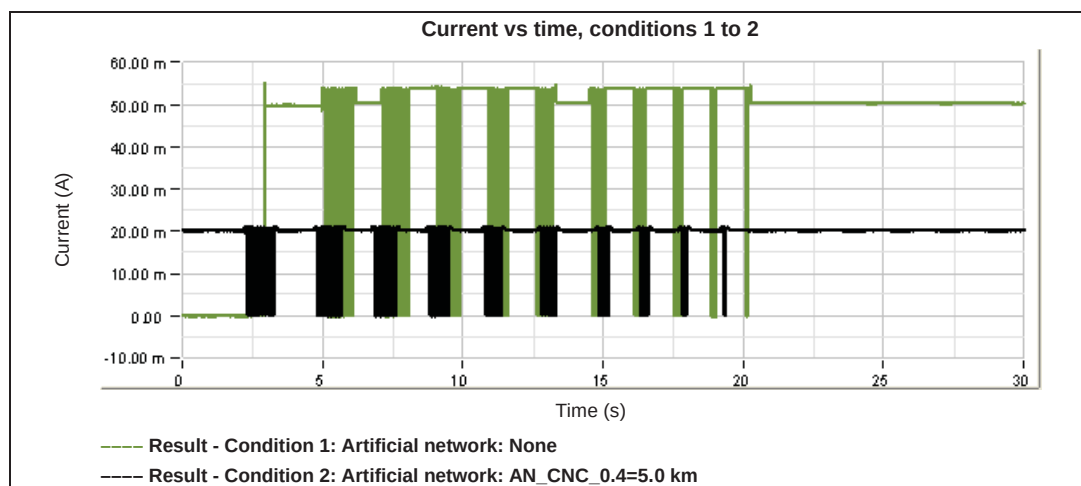
Current ±1.35 %

Voltage ±1.12 %

Timing ±0.2 ms

General parameters

Parameter	Value
Feed polarity	Normal
Series resistance	800 Ohm
Feed voltage	48 V
Required number	0987654321
Pulse speed	10 pps
Make start current	0.018 A
Make stop current	0.006 A
Break start current	0.006 A
Break stop current	0.018 A



Test specification:	4.1.11 Pulse dialing		
Test purpose:	To assure effective pulse dialing of TE to PSTN.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:31:27 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 21			

Received number

Expected	Received	Verdict
Condition 1: Artificial network: None		
0	0	Pass
9	9	Pass
8	8	Pass
7	7	Pass
6	6	Pass
5	5	Pass
4	4	Pass
3	3	Pass
2	2	Pass
1	1	Pass
Condition 2: Artificial network: AN_CNC_0.4=5.0 km		
0	0	Pass
9	9	Pass
8	8	Pass
7	7	Pass
6	6	Pass
5	5	Pass
4	4	Pass
3	3	Pass
2	2	Pass
1	1	Pass

Min pulse speed, Max pulse speed

Min frequency	Max frequency	Limit min	Limit max	Verdict
Condition 1: Artificial network: None				
9.9 pps	10.0 pps	9 pps	11 pps	Pass
Condition 2: Artificial network: AN_CNC_0.4=5.0 km				
9.9 pps	9.9 pps	9 pps	11 pps	Pass

Min make-pulse ratio, Max make-pulse ratio

Min make-pulse ratio	Max make-pulse ratio	Limit min	Limit max	Verdict
Condition 1: Artificial network: None				
32.68 %	32.87 %	30 %	36 %	Pass

Test specification:	4.1.11 Pulse dialing		
Test purpose:	To assure effective pulse dialing of TE to PSTN.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:31:27 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 21			

Min make-pulse ratio	Max make-pulse ratio	Limit min	Limit max	Verdict
Condition 2: Artificial network: AN_CNC_0.4=5.0 km				
33.03 %	33.20 %	30 %	36 %	Pass

Min inter-digit pause duration

Min pause	Limit	Verdict
Condition 1: Artificial network: None		
1.0 s	600 ms	Pass
Condition 2: Artificial network: AN_CNC_0.4=5.0 km		
1.1 s	600 ms	Pass

Test specification:	4.1.12.1 Frequency combination		
Test purpose:	To check whether the TE sends appropriate DTMF signal frequency combinations. The frequencies of dial signals shall have a tolerance $\pm 1.5\%$ of nominal.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:32:57 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 22			

Measurement uncertaintyExpanded uncertainty, $k=2$ (95 % confidence):

Frequency combinations	$\pm 0.03\%$
Absolute levels	$\pm 0.18\text{ dB}$
Unwanted frequency components	$\pm 1.3\text{ dB}$
Pause/tone durations	$\pm 2.32\%$

General parameters

Parameter	Value
Feed polarity	Normal
Series resistance	850 Ohm
Feed voltage	48 V
Termination	600 Ohm
Required number	0123456789*#

Received digits, High group frequency, High group frequency deviation, Low group frequency, Low group frequency deviation

DTMF Digit	Expected digit	High group frequency	High group freq. deviation	Low group frequency	Low group freq. deviation	Limit min	Limit max	Verdict
Condition 1: Artificial network: None								
0	0	1336.1 Hz	0.00 %	941.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
1	1	1209.1 Hz	0.01 %	697.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
2	2	1336.1 Hz	0.00 %	697.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
3	3	1477.0 Hz	0.00 %	697.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
4	4	1209.1 Hz	0.01 %	770.1 Hz	0.01 %	-1.5 %	1.5 %	Pass
5	5	1336.1 Hz	0.00 %	770.1 Hz	0.01 %	-1.5 %	1.5 %	Pass
6	6	1477.0 Hz	0.00 %	770.0 Hz	0.01 %	-1.5 %	1.5 %	Pass
7	7	1209.1 Hz	0.01 %	852.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
8	8	1336.1 Hz	0.00 %	852.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
9	9	1477.0 Hz	0.00 %	852.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
*	*	1209.1 Hz	0.01 %	941.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
#	#	1477.0 Hz	0.00 %	941.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass

Test specification:	4.1.12.1 Frequency combination		
Test purpose:	To check whether the TE sends appropriate DTMF signal frequency combinations. The frequencies of dial signals shall have a tolerance $\pm 1.5\%$ of nominal.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:32:57 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 22			

DTMF Digit	Expected digit	High group frequency	High group freq. deviation	Low group frequency	Low group freq. deviation	Limit min	Limit max	Verdict
Condition 2: Artificial network: AN_CNC_0.4=5.0 km								Pass
0	0	1336.1 Hz	0.00 %	941.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
1	1	1209.1 Hz	0.01 %	697.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
2	2	1336.1 Hz	0.00 %	697.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
3	3	1477.0 Hz	0.00 %	697.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
4	4	1209.1 Hz	0.01 %	770.1 Hz	0.01 %	-1.5 %	1.5 %	Pass
5	5	1336.1 Hz	0.00 %	770.1 Hz	0.01 %	-1.5 %	1.5 %	Pass
6	6	1477.0 Hz	0.00 %	770.0 Hz	0.01 %	-1.5 %	1.5 %	Pass
7	7	1209.1 Hz	0.01 %	852.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
8	8	1336.1 Hz	0.00 %	852.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
9	9	1477.0 Hz	0.00 %	852.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
*	*	1209.1 Hz	0.01 %	941.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass
#	#	1477.0 Hz	0.00 %	941.0 Hz	-0.00 %	-1.5 %	1.5 %	Pass

Test specification:	4.1.12.2 Signaling level, 5.1.12.3 Signaling level difference, 5.1.12.4, 5.1.12.5 Tone & Pause time		
Test purpose:	To check whether the TE sends appropriate DTMF signals.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:37:37 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 23			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Frequency combinations	±0.03 %
Absolute levels	±0.18 dB
Unwanted frequency components	±1.3 dB
Pause/tone durations	±2.32 %

General parameters

Parameter	Value
Feed polarity	Normal
Series resistance	850 Ohm
Feed voltage	48 V
Termination	600 Ohm
Required number	0123456789*#

High group power, Low group power

DTMF Digit	High group power	Limit min	Limit max	Low group power	Limit min	Limit max	Verdict
Condition 1: Artificial network: None							Pass
0	-6.113 dBm	-8 dBm	-4 dBm	-8.054 dBm	-10 dBm	-6 dBm	Pass
1	-6.087 dBm	-8 dBm	-4 dBm	-8.014 dBm	-10 dBm	-6 dBm	Pass
2	-6.112 dBm	-8 dBm	-4 dBm	-8.011 dBm	-10 dBm	-6 dBm	Pass
3	-6.149 dBm	-8 dBm	-4 dBm	-8.013 dBm	-10 dBm	-6 dBm	Pass
4	-6.086 dBm	-8 dBm	-4 dBm	-8.028 dBm	-10 dBm	-6 dBm	Pass
5	-6.112 dBm	-8 dBm	-4 dBm	-8.027 dBm	-10 dBm	-6 dBm	Pass
6	-6.149 dBm	-8 dBm	-4 dBm	-8.027 dBm	-10 dBm	-6 dBm	Pass
7	-6.087 dBm	-8 dBm	-4 dBm	-8.040 dBm	-10 dBm	-6 dBm	Pass
8	-6.112 dBm	-8 dBm	-4 dBm	-8.041 dBm	-10 dBm	-6 dBm	Pass
9	-6.149 dBm	-8 dBm	-4 dBm	-8.041 dBm	-10 dBm	-6 dBm	Pass
*	-6.087 dBm	-8 dBm	-4 dBm	-8.053 dBm	-10 dBm	-6 dBm	Pass
#	-6.150 dBm	-8 dBm	-4 dBm	-8.054 dBm	-10 dBm	-6 dBm	Pass

Test specification:	4.1.12.2 Signaling level, 5.1.12.3 Signaling level difference, 5.1.12.4, 5.1.12.5 Tone & Pause time		
Test purpose:	To check whether the TE sends appropriate DTMF signals.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:37:37 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 23			

DTMF Digit	High group power	Limit min	Limit max	Low group power	Limit min	Limit max	Verdict
Condition 2: Artificial network: AN_CNC_0.4=5.0 km							Pass
0	-15.668 dBm	-21 dBm	-	-16.454 dBm	-21 dBm	-	Pass
1	-15.255 dBm	-21 dBm	-	-15.801 dBm	-21 dBm	-	Pass
2	-15.664 dBm	-21 dBm	-	-15.802 dBm	-21 dBm	-	Pass
3	-16.140 dBm	-21 dBm	-	-15.799 dBm	-21 dBm	-	Pass
4	-15.255 dBm	-21 dBm	-	-15.985 dBm	-21 dBm	-	Pass
5	-15.661 dBm	-21 dBm	-	-15.988 dBm	-21 dBm	-	Pass
6	-16.138 dBm	-21 dBm	-	-15.987 dBm	-21 dBm	-	Pass
7	-15.253 dBm	-21 dBm	-	-16.204 dBm	-21 dBm	-	Pass
8	-15.665 dBm	-21 dBm	-	-16.205 dBm	-21 dBm	-	Pass
9	-16.135 dBm	-21 dBm	-	-16.205 dBm	-21 dBm	-	Pass
*	-15.255 dBm	-21 dBm	-	-16.452 dBm	-21 dBm	-	Pass
#	-16.135 dBm	-21 dBm	-	-16.451 dBm	-21 dBm	-	Pass

Level difference, Tone duration, Pause duration

DTMF Digit	Difference	Limit min	Limit max	Tone duration	Limit	Pause duration	Limit	Verdict
Condition 1: Artificial network: None								Pass
0	1.94 dB	0 dB	3 dB	123.1 ms	40 ms	253.1 ms	50 ms	Pass
1	1.93 dB	0 dB	3 dB	122.7 ms	40 ms	365.1 ms	50 ms	Pass
2	1.90 dB	0 dB	3 dB	125 ms	40 ms	382.8 ms	50 ms	Pass
3	1.86 dB	0 dB	3 dB	123.9 ms	40 ms	103.2 ms	50 ms	Pass
4	1.94 dB	0 dB	3 dB	124 ms	40 ms	133.9 ms	50 ms	Pass
5	1.92 dB	0 dB	3 dB	124 ms	40 ms	102.2 ms	50 ms	Pass
6	1.88 dB	0 dB	3 dB	124 ms	40 ms	147.4 ms	50 ms	Pass
7	1.95 dB	0 dB	3 dB	123.8 ms	40 ms	103.1 ms	50 ms	Pass
8	1.93 dB	0 dB	3 dB	123.9 ms	40 ms	139.8 ms	50 ms	Pass
9	1.89 dB	0 dB	3 dB	124.2 ms	40 ms	101.9 ms	50 ms	Pass
*	1.97 dB	0 dB	3 dB	123.1 ms	40 ms	149.9 ms	50 ms	Pass
#	1.90 dB	0 dB	3 dB	123.7 ms	40 ms			Pass

Test specification:	4.1.12.2 Signaling level, 5.1.12.3 Signaling level difference, 5.1.12.4, 5.1.12.5 Tone & Pause time		
Test purpose:	To check whether the TE sends appropriate DTMF signals.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:37:37 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 23			

DTMF Digit	Difference	Limit min	Limit max	Tone duration	Limit	Pause duration	Limit	Verdict
Condition 2: Artificial network: AN_CNC_0.4=5.0 km								Pass
0	0.79 dB	-	-	123.6 ms	40 ms	602.6 ms	50 ms	Pass
1	0.55 dB	-	-	122.4 ms	40 ms	102.9 ms	50 ms	Pass
2	0.14 dB	-	-	122.9 ms	40 ms	149.1 ms	50 ms	Pass
3	-0.34 dB	-	-	124 ms	40 ms	102.3 ms	50 ms	Pass
4	0.73 dB	-	-	123.3 ms	40 ms	133.8 ms	50 ms	Pass
5	0.33 dB	-	-	123.5 ms	40 ms	103.2 ms	50 ms	Pass
6	-0.15 dB	-	-	123.7 ms	40 ms	146.1 ms	50 ms	Pass
7	0.95 dB	-	-	123.9 ms	40 ms	103.1 ms	50 ms	Pass
8	0.54 dB	-	-	122.6 ms	40 ms	139.8 ms	50 ms	Pass
9	0.07 dB	-	-	123.6 ms	40 ms	103.3 ms	50 ms	Pass
*	1.20 dB	-	-	124.3 ms	40 ms	151 ms	50 ms	Pass
#	0.32 dB	-	-	124.1 ms	40 ms			Pass

Test specification:	4.1.13.1 DC voltage drop of series equipment		
Test purpose:	The DC voltage drop across the line connections shall be less than 3V with loop current at 30mA and shall be less than 6V with loop current at 60mA.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:35:07 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Product name:	Product type:	Product model:	Product serial:
Remarks: 附件 24			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

DC resistance ±2.9 %

General parameters

Parameter	Value
Feed voltage	48 V

Series DC resistance, Voltage drop

Series DC resistance	Voltage drop	Limit	Verdict
Condition 1: EUT state: 30 mA loop current, Feed polarity: Normal, Series resistance: 1.6 kOhm			Pass
45.2 Ohm	1.17 V	3 V	Pass
Condition 2: EUT state: 60 mA loop current, Feed polarity: Reverse, Series resistance: 800 Ohm			Pass
26.18 Ohm	1.21 V	6 V	Pass

Test specification:	4.1.13.2 Insertion loss of series equipment		
Test purpose:	The Insertion Loss of Series Equipment shall be less than 1.5 dB at frequency 1500 Hz when tested with signal level of -10 dBV and reference load 600 Ohm		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:36:24 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 25			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Power level ±0.023 dB

General parameters

Parameter	Value
Tx and Rx levels	Tx voltage = -10 dBV with Tx adjustment

Insertion loss vs freq

Frequency	Loss	Limit	Verdict
Condition 1: EUT state: 48 V, 400 Ohm, Normal polarity, Tx & Rx Setup: Ch A (LINE port) --> Ch B (PHONE port)			Pass
1500 Hz	0.09 dB	1.5 dB	Pass
Condition 2: EUT state: 48 V, 1740 Ohm, Reverse polarity, Tx & Rx Setup: Ch A (LINE port) --> Ch B (PHONE port)			Pass
1500 Hz	0.09 dB	1.5 dB	Pass
Condition 3: EUT state: 48 V, 400 Ohm, Normal polarity, Tx & Rx Setup: Ch B (PHONE port) --> Ch A (LINE port)			Pass
1500 Hz	0.12 dB	1.5 dB	Pass
Condition 4: EUT state: 48 V, 1740 Ohm, Reverse polarity, Tx & Rx Setup: Ch B (PHONE port) --> Ch A (LINE port)			Pass
1500 Hz	0.12 dB	1.5 dB	Pass

Test specification:	4.4.4 Crosstalk		
Test purpose:	The crosstalk loss of 1 kHz signal should be more than 65 dB. For any TE with more than two PSTN ports.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:38:47 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 26			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Signal power level ±0.1 dB

General parameters

Parameter	Value
EUT state	...
Reference frequency	1.014 kHz
Tx and Rx levels	Tx voltage = 0 dBV with Tx adjustment

Gain vs freq

Frequency	Crosstalk	Limit	Verdict
Condition 1: Tx & Rx SETUP: ChA(DC-out, tone) -> ChB(DC-in, tone)			
1000 Hz	-100.48 dB	-65 dB	Pass
Condition 2: Tx & Rx SETUP: ChB(DC-in, tone) -> ChA(DC-out, tone)			
1000 Hz	-102.33 dB	-65 dB	Pass

Test specification:	4.7.1.1 (1) Predialling interval without dial tone detection		
Test purpose:	To check that if an automatic repeated dial without dial tone detection, the dial digit not send out within 2 seconds after on line.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:39:56 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 27			

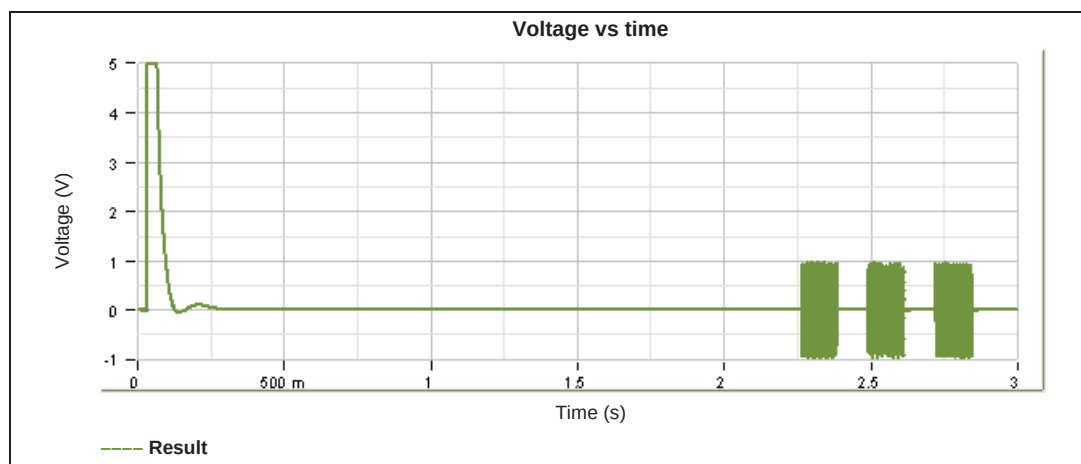
Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Dialing start - timing	±21 ms
Dial tone level -40 to -10 dBV	±1.5 dB
Dial tone level -10 to 3 dBV	±0.5 dB
Dial tone frequencies	±0.2 %
Dial tone timings	±0.15 %

General parameters

Parameter	Value
Feed polarity	Normal
Feed voltage	48 V
Series resistance	850 Ohm
Termination	600 Ohm

**Response time**

Time	Limit	Verdict
		Pass
2.23 s	2 s	Pass

Test specification:	4.7.1.1 (2) Automatic repeated call attempts		
Test purpose:	To check that the automatic repeated call is equal or no more than 2 attempts and wait more than or equal 1 minute after previor attemp		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 3:58:40 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 28			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Timing ±0.14 s

General parameters

Parameter	Value
Feed voltage	48 V
Series resistance	850 Ohm
Dial tone	DT 425Hz -20 dBV cont.
Progress tone	Busy Tone 350+440 Hz -10 dBV 0.5 s/0.5 s

Redials total number

Redials total number	Limit	Verdict
		Pass
2	2	Pass

Redialing interval

#	Time between line seizures	Limit	Verdict
			Pass
1	182.407 s	60 s	Pass

Test specification:	4.7.1.2 Disconnection time of automatic dialing		
Test purpose:	To check that: 1. Disconnection time does not exceed 20 seconds after busy tone send out. 2. Disconnection time does not exceed 2 minutes of no answering ring back signals.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 4:00:01 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 29			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Frequency	±0.03 %
Absolute levels	±0.18 dB
Pause/tone durations	±2.32 %

Tx Time, Tx Event, Rx Event, Rx Time, Response time

#	Tx Time	Tx Event	Rx Event	Rx Time	Response time	Limit	Verdict
Condition 1: Signaling Test Procedure: Busy tone							Pass
1	1 s	Delay [1 s]	-				Pass
2	1 s	Command [Start dialling]	Ch A: Off-hook [0.012 A]	5.64 s	4.64 s	-	Pass
3	6.66 s	Delay [0.5 s]	-				-
4	6.81 s	Ch A: Progress tone [DT 425 Hz -20 dBV cont.]	Ch A: DTMF, MF [DTMF, 3] - 1 2 3	7.08 s	265 ms	-	Pass
5	9.73 s	Delay [1 s]	-				-
6	10.42 s	Ch A: Progress tone [Busy tone 480+620 Hz - 10 dBV 0.5+0.5]	Ch A: On-hook [0.0026 A]	15.16 s	4.74 s	20 s	Pass
7	15.58 s	Ch A: Remove signal	-				-
8	16.58 s	Delay [1 s]	-				-

Test specification:	4.7.1.2 Disconnection time of automatic dialing		
Test purpose:	To check that: 1. Disconnection time does not exceed 20 seconds after busy tone send out. 2. Disconnection time does not exceed 2 minutes of no answering ring back signals.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 4:00:01 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 29			

#	Tx Time	Tx Event	Rx Event	Rx Time	Response time	Limit	Verdict
Condition 2: Signaling Test Procedure: Ring back tone							Pass
1	1 s	Delay [1 s]	-				Pass
2	1 s	Command [Start dialling]	Ch A: Off-hook [0.012 A]	3.59 s	2.59 s	-	Pass
3	4.73 s	Delay [0.5 s]	-				-
4	4.83 s	Ch A: Progress tone [DT 425 Hz -20 dBV cont.]	Ch A: DTMF, MF [DTMF, 3] - 2 3 5	5.09 s	265 ms	-	Pass
5	7.75 s	Delay [1 s]	-				-
6	8.5 s	Ch A: Progress tone [Ring back 440+480 Hz - 10 dBV 2 s/4 s]	Ch A: On-hook [0.0026 A]	10.17 s	1.67 s	120 s	Pass
7	10.39 s	Ch A: Remove signal	-				-
8	11.39 s	Delay [1 s]	-				-

Test specification:	4.7.2 (1) Automatic answer function - seizure the calling line		
Test purpose:	To check that the TE with automatic answer function: (1) Seizure the calling line before receiving more than 3 cycle rings.		
Test mode:	Compliance	Verdict:	PASS
Date & Time:	8/4/2020 4:00:27 PM		
Temperature: 22.2 °C	Air Pressure: 991 hPa	Relative Humidity: 54.2 %	Mains Power Supply:
Remarks: 附件 30			

Measurement uncertainty

Expanded uncertainty, k=2 (95 % confidence):

Frequency	±0.03 %
Absolute levels	±0.18 dB
Pause/tone durations	±2.32 %

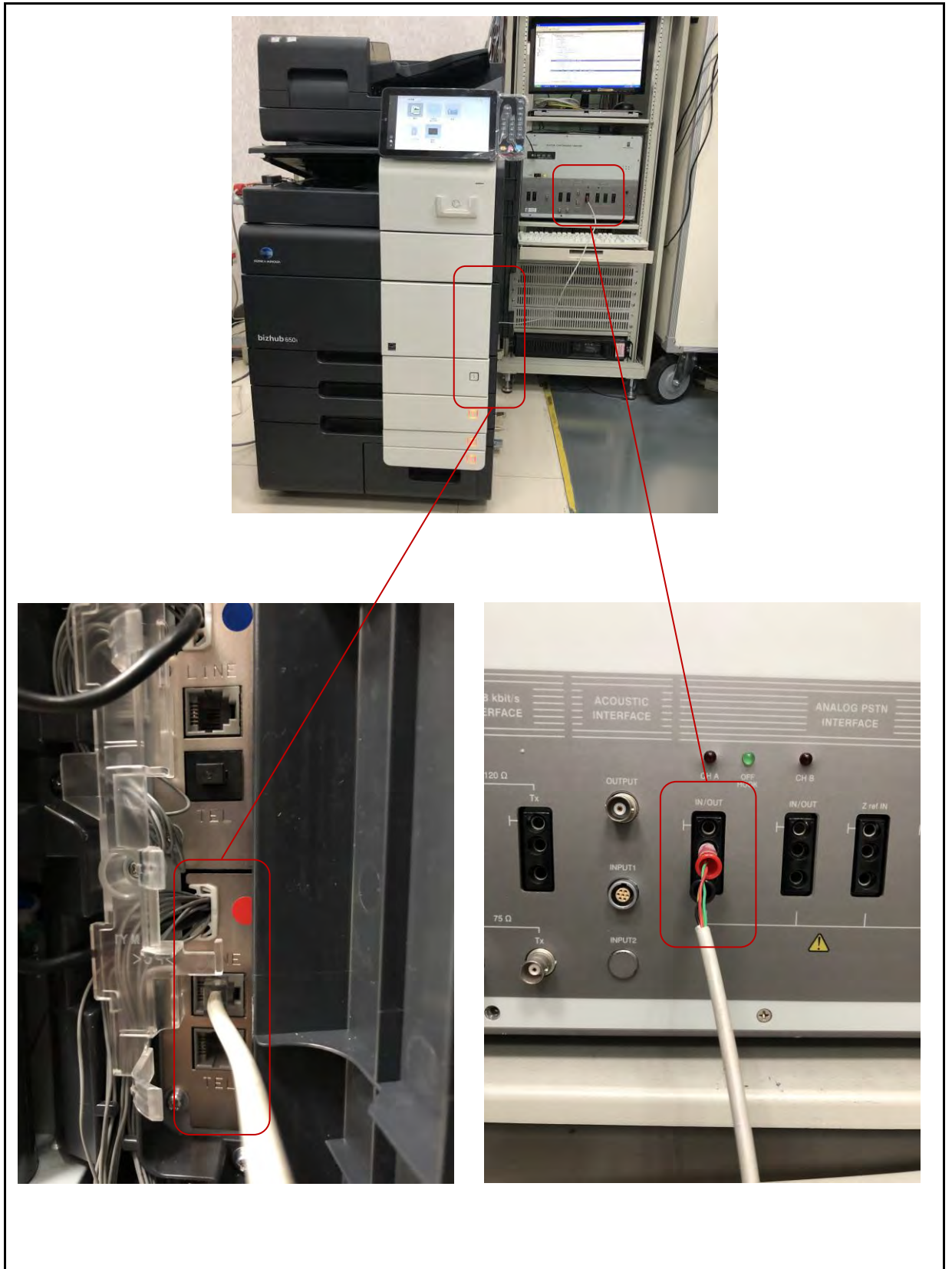
General parameters

Parameter	Value
Signaling Test Procedure	Seizure line

Tx Time, Tx Event, Rx Event, Rx Time, Response time

#	Tx Time	Tx Event	Rx Event	Rx Time	Response time	Limit	Verdict
							Pass
1	1 s	Delay [1 s]	-				Pass
2	1.69 s	Ch A: Ring [Ring signal 20 Hz/45V 1 s/2 s]	Ch A: Off-hook [0.012 A]	9 s	7.31 s	9 s	Pass
3	9.41 s	Ch A: Remove signal	-				-
4	12.41 s	Delay [3 s]	-				-

6. 測試配置照



--- END---