



"Results You Can Count On"

Telebyte解决方案聚焦

Complete Solution for TR-127!



Optional Full-Featured Software



Loop Simulation for NA and EU

Ring Trip Interference/AWGN Generator

Control via 3-Slot Chassis w/Remote Commands or GUI

TR-127 集成了以下测试产品解决方案特征:

- 458-RT 振铃周期干扰/AWGN 发生器
- 458-LM-A1-30-DC 多标准的线路仿真器 (北美标准)
- 458-LM-E1-30-04-DC 多标准的线路仿真器 (欧洲标准)
- 458-SW-TR127 TR-127 自动测试, 分析和导出测试结果的软件

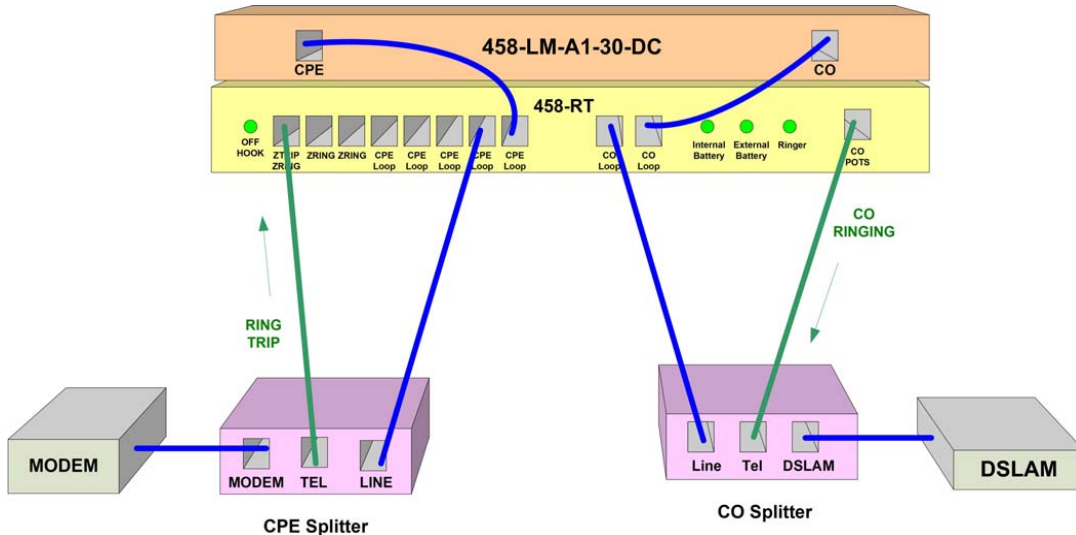
概述

xDSL 线路要求最佳的高质量的的声音, 数据和视频分离的互操作性与 xDSL 分离器 and 收发器的在线过滤。视频信号的中断是一个普遍的问题, 往往由摘机, 挂机, 振铃和振铃声音相关的事件引起电压瞬变, TR - 127 分离器测试技术报告 (如宽带论坛公布) 定义分离器测试程序以最大限度地分流互操作性, 从而提高客户满意度。

TR-127 集成测试解决方案是第一个真正的, 终端到终端的通过模拟电压瞬变引起的干扰及



其对动态的本地回路的电话环境影响的 xDSL 测试体系。该系统针对 ADSL2, ADSL2+和 VDSL2 带宽提供了精确, 可重复测试, 使用三个关键因素的结合: 振铃周期的干扰的产生, AWGN 信(白噪声)的产生以及在振铃周期中本地回路处理高电压和电流仿真。通过远程命令或可购买有用户友好 GUI 界面的, 可控制和整个自动化测试装置(包括 DSLAM)的, 全面的分析数据和生成格式化报告的软件来控制。



上面的示例描述了作为测试北美测试的 TR-127 组合的一部分的 458-RT 和 458-LM-A1-30-DC。两个模块安装在 Telebyte 的 458-3SLB 或 458-CC-16 (未展示) 机框里, 通过远程命令或一个用户友好的 GUI 控制包括机框一起购买。可选软件可自动检测和控制 DSLAMs 设备。

订购选项

硬件选择

<p>需求:</p> <p>458-RT 振铃周期干扰/ AWGN 发生器:</p> <p>模拟摘机, 挂机, 振铃和振铃声音相关的事件引起电压瞬变发生的干扰, 包括控制振铃周期相位和加载内置的 AWGN 发生器到 CPO 和 CO 两侧或者任何一侧;</p> <p>458-3SLB (3-Slot) or 458-CC-16 (16-Slot) 机框:</p> <p>458-RT 和线路仿真都可以配置到两种机框使用。这两种机框都可以通过 RE-232, 以太网或者 IEEE-488 (GPIB) 接口连接。用户可以通过远程命令/自动化测试脚本, 机框前面板或者一个友好的用户界面来控制</p>	<p>Select At Least One:</p> <p>458-LM-A1-30-DC 适合北美的多标准线路仿真仪:</p> <p>准确地模拟 ANSI T1.417 标准的 26AWG PIC 的衰减和阻抗。步进为 100 英尺可测试长度从 0-21000 英尺。为振铃周期处理高电压和电流而设计</p> <p>458-LM-E1-30-04-DC 适合北美的多标准线路仿真仪:</p> <p>准确地模拟 ETSI TS 101 388 标准的 0.4 mm PE 的衰减和阻抗。步进为 25m 可测试长度从 0-6350m。为振铃周期处理高电压和电流而设计。</p>
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458-SW-TR-127 软件选择 (可选择配置)

在购买 458-3 SLB 或者 458-CC-16 机框时包括了基本的远程控制命令和 458 通用的 GUI。可选择的是 TR-127 自动化测试, 分析和提供先进的全面的测试报告的 458-SW-TR-127 软件, 包括一个 DSLAM 的控制。

北美		
MODULE: VDSL2 FOR NORTH AMERICA	Base Software	
	Required for this module	
	458-SW-TR127-NA-VDSL2	Software for TR-127 Automated Testing, Analysis and Reporting, VDSL2 Module for North America



	Splitter & In-Line Filter Profiles		
	Select at least one for this module		
	458-SW-TR127-NA-VDSL2-TP	Triple Play Splitter Profile for 458-SW-TR127-NA-VDSL2	
	458-SW-TR127-NA-VDSL2-HIS	High-Speed Internet Splitter Profile for 458-SW-TR127-NA-VDSL2	
	458-SW-TR127-NA-VDSL2-ILF	In-Line Filter Profile for 458-SW-TR127-NA-VDSL2	
	DSLAM Control*		
	Optional		
	458-SW-TR127-NA-VDSL2-AL7330	Alcatel-Lucent VDSL2_NA 7330 DSLAM control for 458-SW-TR127-NA-VDSL2	
	MODULE: ADSL2+ FOR NORTH AMERICA	Base Software	
		Required for this module	
458-SW-TR127-NA-ADSL2PLUS		Software for TR-127 Automated Testing, Analysis and Reporting, ADSL2+ Module for North America	
Splitter & In-Line Filter Profiles			
Select at least one for this module			
458-SW-TR127-NA-ADSL2PLUS-TP		Triple Play Splitter Profile for 458-SW-TR127-NA-ADSL2PLUS	
458-SW-TR127-NA-ADSL2PLUS-HIS		High-Speed Internet Splitter Profile for 458-SW-TR127-NA-ADSL2PLUS	
458-SW-TR127-NA-ADSL2PLUS-ILF		In-Line Filter Profile for 458-SW-TR127-NA-ADSL2PLUS	
DSLAM Control*			
Optional			
458-SW-TR127-NA-ADSL2PLUS-AL7330	Alcatel-Lucent ADSL2+_NA 7330 DSLAM control for 458-SW-TR127-NA-ADSL2PLUS		

欧洲		
MODULE: VDSL2 FOR EUROPE	Base Software	
	Required for this module	
	458-SW-TR127-EU-VDSL2	Software for TR-127 Automated Testing, Analysis and Reporting, VDSL2 Module for Europe
	Splitter & In-Line Filter Profiles	
	Select at least one for this module	
	458-SW-TR127-EU-VDSL2-TP	Triple Play Splitter Profile for 458-SW-TR127-EU-VDSL2
	458-SW-TR127-EU-VDSL2-HIS	High-Speed Internet Splitter Profile for 458-SW-TR127-EU-VDSL2
	458-SW-TR127-EU-VDSL2-ILF	In-Line Filter Profile for 458-SW-TR127-EU-VDSL2
	DSLAM Control*	
	Optional	
458-SW-TR127-EU-VDSL2-AL7330	Alcatel-Lucent VDSL2_EU 7330 DSLAM control for 458-SW-TR127-EU-VDSL2	
MODULE: ADSL2+ FOR EUROPE	Base Software	
	Required for this module	
	458-SW-TR127-EU-ADSL2PLUS	Software for TR-127 Automated Testing, Analysis and Reporting, ADSL2+ Module for Europe
	Splitter & In-Line Filter Profiles	
	Select at least one for this module	
	458-SW-TR127-EU-ADSL2PLUS-TP	Triple Play Splitter Profile for 458-SW-TR127-EU-ADSL2PLUS
	458-SW-TR127-EU-ADSL2PLUS-HIS	High-Speed Internet Splitter Profile for 458-SW-TR127-EU-ADSL2PLUS
	458-SW-TR127-EU-ADSL2PLUS-ILF	In-Line Filter Profile for 458-SW-TR127-EU-ADSL2PLUS
	DSLAM Control*	
	Optional	
458-SW-TR127-EU-ADSL2PLUS-AL7330	Alcatel-Lucent ADSL2+_EU 7330 DSLAM control for 458-SW-TR127-EU-ADSL2PLUS	

*Custom DSLAM options available upon request.





"Results You Can Count On"

458-RT
振铃周期干扰和AWGN发生器



458-RT 振铃周期干扰/AWGN 发生器模拟在振铃周期中的摘机/挂机，振铃等事件引起的瞬间电压升高。包括振铃周期相位和内置的 AWGN 发生器可加载在 CPE 和 CO 两侧或者单独一侧的控制。

458-RT 可以和 TR-127 其他的硬件产品如: 458-LM-A1-30-DC 或者 458-LM-E1-30-04-DC 配合使用。两种线路仿真用来处理 458 - RT 的使用是产生的高电压电流而设计。

Teletype 公司为客户提供可以通过远程控制的命令和一个免费的友好界面来控制 458-3SLB (3 插槽的机框) 和 458-CC-16 (16 插槽的机框)。可选择的软件针对 TR-127 自动化测试，分析以及自动导出测试报告 (包括 DSLAM 的控制) 一样适用。

458-RT 产品规格	
Ring Trip	<p>"XDSL Unfriendly" Ringing-Start/Ring-Trip Phase controlled from 0° to 360° of the ringing frequency Sine Wave in 3° Steps</p> <p>"XDSL Friendly" Ringing-Start/Ring-Trip Phase at 0°</p> <p>Sliding Phase Ring-Trip mode with 6° steps for each Cadence cycle</p> <p>Ringing Cadence completely programmable with On-Hook and Off-Hook times ranging from 0 to 10 seconds in increments of 0.1 secs.</p> <p>Typical Ringing Cadence 50% On-Hook, 50% Off-Hook (Period programmable 1, 2, 5 or 10 Seconds to allow Modem recovery time)</p> <p>Programmable for continuous or 120 Hook-Cycle events per TR-127 (A Cadence of 600 msec T_{RING}, 700 msec $T_{SILENCE}$ OR 2 seconds T_{RING}, 4 seconds $T_{SILENCE}$)</p> <p>Ring-Trip phase angles are determined relative to the zero crossing at the telephone model. This incorporates any delay due to the Local Loop Simulator.</p>
DC Feed Current	Limited as specified by TR-127



Station Battery	-34VDC to -70 VDC in 0.2V steps or external
Ringng Source	<p>Voltages programmable from 90 Vrms to 105 Vrms in 0.2V steps. Typical voltages of 90 Vrms, 100 Vrms, and 105 Vrms are supported.</p> <p>Frequencies: 16 2/3 Hz, 20 Hz, 25 Hz, 50 Hz</p> <p>Crest Factor: > 1.2</p> <p>Crystal controlled frequency Accuracy: 100 ppm</p> <p>Optional External Ringng Source</p>
On-Hook and Off-Hook Telephone Models	Broadband Forum TR-127 - Figures 7-3, 7-12
CO POTS Model	Unbalanced Serial model per TR-127 Section 7.3.1.1
Off-Hook (Ring Trip) Detection Time	Ring-trip delay programmable from 60 to 140 ms in 10 ms steps
White Noise (AWGN) Generator	<p>-90 dBm/Hz to -145 dBm/Hz programmable in 0.25 dB steps</p> <p>Independent noise on one or both sides of loop</p>
Mechanical	Plugs into Model 458-3SLB (3 Slot) Chassis
Control	<p>Ring Trip Parameters and Loop Lengths can be controlled:</p> <p>Manually via front panel of chassis</p> <p>From Universal Graphical User Interface (GUI)</p> <p>Remotely via RS-232, Ethernet or IEEE-488 (GPIB)</p>
Connectors	11 RJ-45 connectors to accommodate all test configurations. No external adaptors required.
Environmental	<p>Operating Temperature: 0° to 50° C</p> <p>Storage Temperature: -25° C to 65° C</p> <p>Humidity: 0% to 95% humidity</p> <p>All parts and material meet RoHS directive</p>
Power	100-240 VAC, 50/60 Hz
Diagnostics	4 LED's





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TR-127线路方针硬件



458-LM-E1-30-04-DC for Europe



458-LM-A1-30-DC for North America



458-3SLB* 3-Slot Chassis

458-LM-A1-30-DC (北美标准)：精确模拟ANSI T1.417的PIC26AWG衰减和阻抗。测试步进为100ft，测试距离为0-21, 000 ft 。

458-LM-E1-30-04-DC多标准的线路仿真(欧洲标准)：精确模拟定义为ETSI TS 101 388的0.4PE线路的衰减和阻抗。测试步进为25-m测试长度从0-6, 350-m。

458-3SLB (3插槽的机框) 或者458-CC-16 (16插槽的机框)：458-RT和线路仿真都可适用这两个机框使用。有RS-232，以太网和IEEE-488 (GPIB) 接口，通过自动化测试的远程命令/脚本控制，通过前面板或者用户友好的GUI手动选择。

458-LM-A1-30-DC Product Specifications (for North America)

Simulation	Accurately simulates attenuation and impedance 26 AWG PIC as specified in ANSI T1.417 Full bidirectional operation at all specified frequencies 0 to 21,000 ft in 100-ft increments
Bandwidth	DC to 30 MHz
Attenuation Accuracy (when source and load impedances are 100 ohms)	MAE < 1 dB DC to 30 MHz
Maximum Attenuation	> 90 dB
Impedance Accuracy	Typically +/- 10% DC to 30 MHz
DC Rating Maximum Voltage	+/- 500 volts between tip and ring, tip ground, ring ground
Tip – Ring	150-mA Maximum 1-amp Peak Surge



DC Resistance	+/- 10 %
Connectors	2 RJ-45's on front
458-LM-E1-30-04-DC Product Specifications (for Europe)	
Simulation	Accurately simulates attenuation and impedance 0.4mm PE as defined in ETSI TS 101 388 Full bidirectional operation at all specified frequencies
Bandwidth	DC to 30 MHz
Attenuation Accuracy (when source and load impedances are 100 ohms)	MAE < 1 dB DC to 30 MHz
Maximum Attenuation	> 90 dB
Impedance Accuracy	Typically +/- 10% DC to 30 MHz
DC Rating Maximum Voltage Tip – Ring	+/- 500 volts between tip and ring, tip ground, ring ground 150-mA Maximum 1-amp Peak Surge
DC Resistance Accuracy	+/- 10 %
Connectors	2 RJ-45's on front

458-3SLB Product Specifications (3-Slot Chassis and Control Module)	
Controls	Keypad for setting loop lengths and IEEE-488 address, RS-232, or Ethernet communication parameters.
Indicators	Backlit LCD display of line length and set up parameters.
Power	88 to 264 VAC, 50 or 60 Hz
Size	[2U] 19 in W x 22 in D x 3.47 in H (482.6 mm W x 558.8 mm D x 88.1 mm H)
Environmental	Operating: +32 F to +122 F (0 to +50 degrees C) Storage: 0 to 95% relative humidity (non-condensing)
Remote Control Connectors	RS-232: DB9 female (DCE); GPIB: IEEE488 24-pin connector. Ethernet: RJ-45
Plug-In Compatibility	Accepts one, two or three 458 Line Modules or one 458-RT

458-CC-16 & 458-CM Product Specifications (16-Slot Chassis and Control Module). Sold separately.	
Controls	Keypad for setting loop lengths and IEEE-488 address, RS-232, or Ethernet communication parameters.
Indicators	Backlit LCD display of line length and set up parameters.
Power	88 to 264 VAC, 50 or 50 Hz
Size	[7U] 19 in W x 22 in D x 12.22 in H (482.6 mm W x 558.8 mm D x 310.4 mm H)
Environmental	Operating: +32 F to +122 F (0 to +50 degrees C) Storage: 0 to 95% relative humidity (non-condensing)
Remote Control	RS-232: DB9 female (DCE), GPIB: IEEE488 24-pin connector, Ethernet:



Connectors	RJ-45
Plug-In Compatibility	Accepts 1-16 458 Line Modules

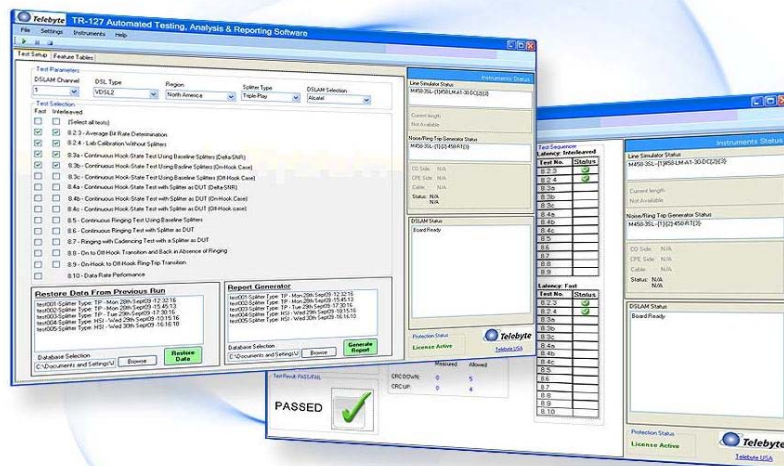




"Results You Can Count On"

458-LM-TR127

TR-127自动化测试, 分析和报告软件

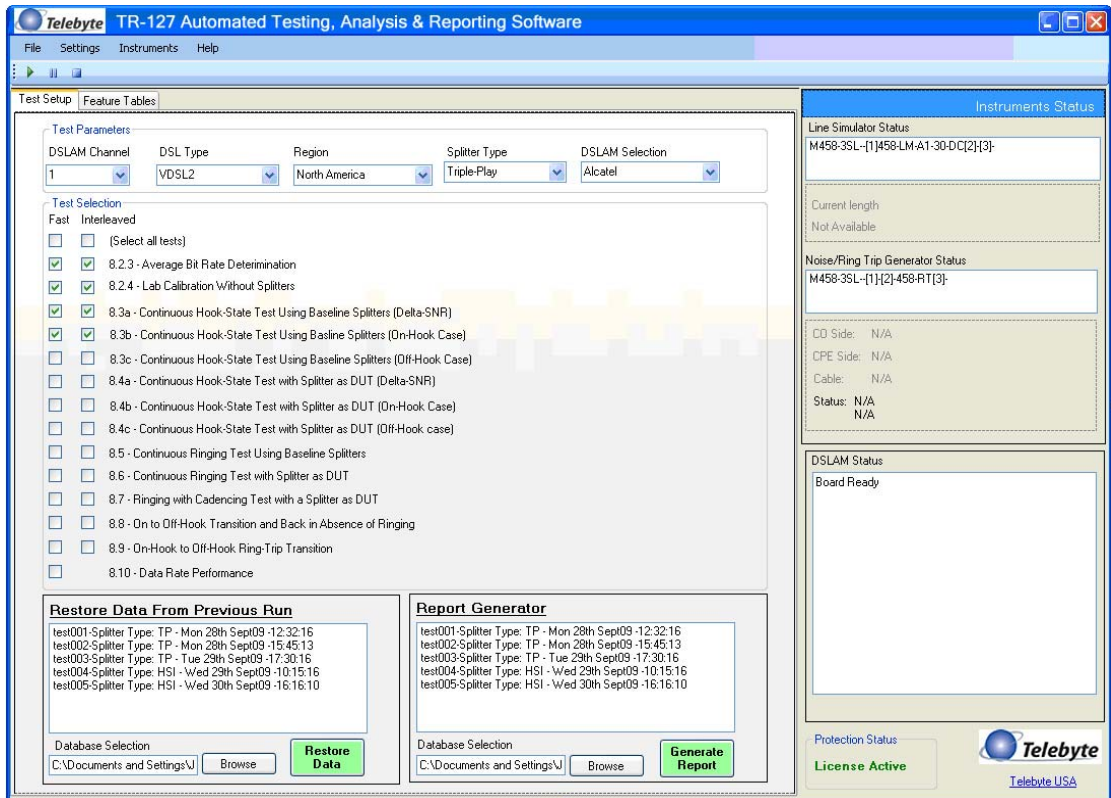


- 是 TR - 127 自动化测试, 分析和报告的理想方案
- 专门为 Telebyte 的 TR - 127 的硬件和选择的 DSLAM 而设计
- 适合北美和欧洲的 ADSL2+和 VDSL2
- 测试三层业务的分配器, 恒指分配器和在线过滤器
- 完全控制 TR-127 硬件设置
- DSLAM 的标准和用户可选择的方案的选择
- 可建立快速的, 准确的和可重复的测试
- 自动对所有的 TR - 127 测试, 测试序列 - 包括校准程序
- 安装程序有“功能表”的设置
- 一键恢复以前的安装运行数据
- 配置实时监控测试

TR-127 自动化测试, 分析以及报告软件提供依据带宽论坛 TR-127 规格度量一个分离器或一个在线的过滤器动态的性能的一个完美的解决方案, 与 telebyte 的 458-RT 振铃周期干扰/噪声发生器, 配套的线路模块以及用户的 DSLAM 设备配合使用,



458-SW-TR-127 软件允许用户选择和排列一套 TR-127 测试，分析结果和生成报告。具有恢复上次允许重复测试的数据能力。



目的明确的工作。直接安装 DSLAM 类型以及通道，DSL 类型，地区，分离器类型以及所需要的标准的，可重复的测试，包括存储先前的测试或者重复测试的数据。



Telebyte TR-127 Automated Testing, Analysis & Reporting Software

File Settings Instruments Help

Test Parameters Selected

DSL Type: VDSL2
 Region: North America
 Splitter Type: Triple Play
 DSLAM: Alcatel 7330

Current Test Parameters

Test Loop: 26AWG 3000 ft
 Noise Applied: White Noise @ -140dBm/Hz
 Latency: Fast

Test Progress Monitor

Line Sim Loop: 5 of 5
 Iteration: 10 of 10

Current Test Status

Test Name: 8.2.4
Status: Complete

Test Result: PASS/FAIL

PASSED

Baseline Data

Bitrate DOWN: 5366 kbit/s
 Bitrate UP: 1024 kbit/s
 Noise Margin DOWN: 5.8 dB
 Noise Margin UP: 6.0 dB

Performance Data

Bitrate DOWN: 5346 kbit/s
 Bitrate UP: 1007 kbit/s
 Noise Margin DOWN: 5.8 dB
 Noise Margin UP: 6.0 dB
 INP DOWN: 0 symbols
 INP UP: 0 symbols
 ATP DOWN: 19.1 dBm
 ATP UP: 12.0 dBm
 Sync Time: 35 s
 DSL Status: Connected
 Connection Time: 00:02:30

Monitored Defects

	Measured	Allowed
CRC DOWN:	0	5
CRC UP:	0	4

Test Sequencer

Latency: Interleaved

Test No.	Status
8.2.3	✓
8.2.4	✓
8.3a	
8.3b	
8.3c	
8.4a	
8.4b	
8.4c	
8.5	
8.6	
8.7	
8.8	
8.9	

Latency: Fast

Test No.	Status
8.2.3	✓
8.2.4	✓
8.3a	
8.3b	
8.3c	
8.4a	
8.4b	
8.4c	
8.5	
8.6	
8.7	
8.8	
8.9	
8.10	

Instruments Status

Line Simulator Status
 M458-3SL-[1]458-LM-A1-30-DC[2]{3}

Current length
 Not Available

Noise/Ring Trip Generator Status
 M458-3SL-[1]{2}458-RT[3]

CD Side: N/A
 CPE Side: N/A
 Cable: N/A
 Status: N/A
 N/A

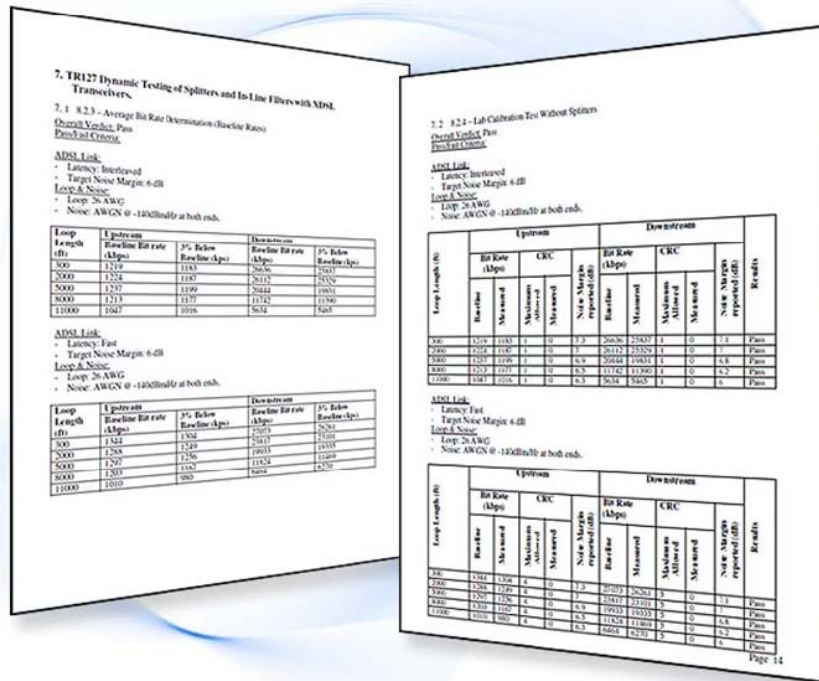
DSLAM Status
 Board Ready

Protection Status
License Active

Telebyte USA

实时反馈。查看测试进度和测试执行的结果。持续测试配置监控 DSLAM 和 telebyte 设备的状态。数据显示和保存到测试数据库中以及测试报告生成，包括测试结果和所有的章节 5 中 TR-127 标准的“功能表”。





有意义的报告：打印的测试结果提供了测试参数和测试的基本细节，这些信息显示在一个标准的易读的格式中。

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