SPIRENT SMARTSIGHT

IPMAX

The SmartSight™ IPMax™ is the industry's first Triple Play services test unit designed for the Fiber-to-the-Node (FTTN) environment. SmartSight IPMax performs VoIP, video, data service emulation, voice and video quality analysis. It also verifies physical layer, ADSL2+ and VDSL sync capability of the service loop.

The unit allows service validation testing prior to customer handover and provides quick trouble identification and sectionalization when maintenance is required. Slightly larger than a typical in-home router, the IPMax is designed for outside plant operations that demand low-cost service assurance and minimum cabinet space.

TECHNICAL SPECIFICATIONS

NARROWBAND TESTING (VOMCAP)
AC/DC Voltage
AC Voltage R/T, T/G, R/G
Hazardous Voltage Detection
DC Voltage R/T, T/G, R/G
DC Current Measurements
DC loop current measurement
Resistance measurements: • Two-terminal composite resistance from T/G, R/G, and R/T
Capacitance measurements: • Two-terminal composite capacitance from T/G, R/G, and R/T
Capacitive Pair Balance
Loop Length
Load Coil Detection
Line Simulation • 3,000 ft. loop length • 9,000 ft. loop length

WIDEBAND TESTING
Transmit Power (Upstream & Downstream)
Actual Bit Rate (Upstream & Downstream)
Attainable Bit Rate (Upstream & Downstream)
Capacity Utilization (Upstream & Downstream)
SNR Margin (Upstream & Downstream)
Attenuation (Upstream & Downstream)
Channel & Data Path Diagnostic & Status of physical connection
Actual Bit Rate (Upstream & Downstream)

MODEM SYNC AND BASIC IP TESTING
xTU-C (ADSL/ADSL2/ADSL2+/VDSL/VDSL2) Modem Sync & Logical
xTU-R (ADSL/ADSL2/ADSL2+/VDSL/VDSL2) Modem Sync & Logical
DHCP, Static IP, PPPoA, and PPPoE client/server session emulation
Encapsulation of PPPoE, PPPoA, IPoE, and IPoA
PAP & CHAP Authentication Login
802.1x Authentication
802.1q/p VLAN support
IP Ping/Traceroute
ISP Connectivity Verification
Throughput testing (requires coordinated testing with qScope 5500A)
Vendor Information xTU-R/xTU-C

MODEM STANDARD COMPLIANCE
ANSI T1.413 Issue 2
ADSL G.dmt (G.992.1/2 Annex A)
ADSL2 G.992.3/4 (Annex A)
ADSL2+ G.992.5 (Annex A)
VDSL DMT G.993.1
VDSL2 DMT G.993.2

SELT (SINGLE-ENDED LOOP TESTING)
Loop length (physical loop length)
Bridged tap detection (length and location of up to one tap)
Spectral analysis to 30 MHz
Loop Fault – short circuit, fault in CO
Total Cable Length
Distance to Fault (open, short & resistive fault)
Bridge Tap Length
DELT (DOUBLE-ENDED LOOP TESTING)
Train Information
Line Attenuation & Margin
Loop Topology
Equivalent gauge
Loop Length
Bridged tap detection
Spectral analysis
Crosstalk analysis
AM/external noise ingress analysis
Data rate reduction due to bridged taps
Data rate reduction due to crosstalk
Data rate reduction due to AM/external noise ingress

ORDERING INFORMATION

DESCRIPTION	PART NUMBER
IPMax supporting ADSL ADSL2, ADSL2+, VDSL and VDSL2	3577C-01
IPMax base functionality & Line Simulator	3577C-01L
IPMax base functionality & VOMCAP	3577C-01V
IPMax base functionality, VOMCAP and Line Simulator	3577C-01VL
Single-Ended Loop Test analysis software option for IPMax	3577C-SELT
Dual-Ended Loop Test analysis software option for IPMax	3577C-DELT
Enhanced VoIP analysis software option for IPMax	3577C-VOIP
Enhanced IPTV analysis software option for IPMax	3577C-IPTV

DERQ (DOUBLE-ENDED REQUALIFICATION)
ADSL2+ rate estimate when training to ADSL1 CPE
VDSL2 rate estimate when training to ADSL2+ CPE
Bit allocation table for estimated rate
VOIP TEST CAPABILITIES
VoIP call emulation and termination
Voice quality analysis using RTP, E Model, with MOS score generation
Packet loss burstiness and recency effect per ETSI standard TS101329-5
Latency, out of order packets, packet loss, jitter for round trip and one-way measurements
VIDEO TEST CAPABILITIES
IGMP ver. 2/3 signaling (Channel Change)
MDI Video Quality Measurement
Video Quality Measurements
TR 101-290 First & Second Priority Statistics
Transport Stream content analysis • I/P/B frame rate & count • Hole size and count • Aspect Ratio • Quantization Scale • Stream type • Video coding information

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