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opale systems

MultiDSLA Nodes Datasheet

This Datasheet describes features, specifications and ordering information relating to the Node types which may be part of a MultiDSLA test system. A complete test system consists of a MultiDSLA Controller user interface application, plus one or more types of the 'node' devices described here.

See also the following:

MultiDSLA Controller Datasheet, for details system features

MultiDSLA Brochure, for a general description of the MultiDSLA system

Audio Streaming Integrity Brochure, for details of this option

Node Selection Guide

- **DSLA Series / Analog** – Use for testing involving cellular phones, desk phones, analog (POTS) phone lines, ATA's, PC sound cards (for soft phones), audio streaming devices...
- **BRI & PRI / ISDN** – Use for testing involving BRI and PRI lines.
- **VPP Series** – Use for VoIP network testing, VoLTE handset evaluation and in any testing where a reference VoIP end-point is required, with or without SIP signalling.

Please consult your Opale Systems salesperson for more detailed advice.

Node Types - Quick Reference

<table>
<tr><th></th><th>Type</th><th>Interface</th><th>Harware</th><th>Software</th><th>No. of Nodes</th><th>Licence</th></tr>
<tr><td>BRI</td><td rowspan="2">ISDN</td><td rowspan="2">RJ-45</td><td rowspan="2">PCI card</td><td rowspan="2">Opale driver for Windows</td><td>2</td><td rowspan="2">Fixed</td></tr>
<tr><td>PRI</td><td>24 (T1) or 32(E1)</td></tr>
<tr><td>DSLAIIC</td><td rowspan="3">Analog</td><td>RJ-22, RJ-11, 4mm Balanced</td><td>Desk-top</td><td rowspan="3">(Measurement and control firmware in device)</td><td>2</td><td rowspan="3">Fixed</td></tr>
<tr><td>DSLAIIC4</td><td rowspan="2">RJ-22, RJ-11</td><td rowspan="2">19" rack-mount</td><td>4</td></tr>
<tr><td>DSLAIIC6</td><td>6</td></tr>
<tr><td>VPPn</td><td rowspan="4">VoIP/SIP</td><td rowspan="4">Ethernet</td><td rowspan="4">No</td><td rowspan="4">Windows service</td><td>1-5, 10, 20, 30</td><td>Fixed</td></tr>
<tr><td>VPP-fn</td><td>10, 20, 30, 50, 100</td><td>Floating</td></tr>
<tr><td>VPP+n</td><td>1-5, 10, 20, 30</td><td>Fixed</td></tr>
<tr><td>VPP+n-f</td><td>10, 20, 30, 50, 100</td><td>Floating</td></tr>
</table>

DSLA Series / Analog Nodes



DSLA Technical Specification:
Dimensions (mm): DSLAIIC 72h x 218w x 200d DSLAIIC4/C6 85h x 425w x 387d
Net weight: DSLAIIC approx 3kg DSLAIIC4/C6 approx 7kg
Power: DSLAIIC 100-240Vac (external PSU) or 9-18Vdc, 12W DSLAC4/C6 100-240Vac
Operating temperature range: -2 to +40°C
Approvals & Compliance: CE Mark; FCC47 CFR Part15
Calibration: full calibration report supplied; recommended re-calibration cycle 3 years

Test Signal Generation

- Any user-supplied speech material in wav or PCM format, generated with user-defined mean active speech level with setting range -99dBm to +10dBm
- Artificial Speech Test Stimulus (ASTS) British or American English; 8k and 16k sample rate
- Sine wave 20Hz to 22kHz, setting range -99dBm to +10dBm, any duration
- Swept sine wave 20Hz to 22kHz, setting range -99dBm to +10dBm, any duration
- White, Gaussian white or pink noise, setting range -99dBm to +10dBm, any duration
- DTMF setting range -99dBm to +10dBm any duration
- DTMF user-defined twist, frequency offset and break duration
- Conversational speech with/without double-talk
- Filter signals to MIRS, HATS or user-defined filter
- Two independent tracks on each DSLA channel to create complex mixed signals, e.g. speech plus noise

Physical Interfaces

- Balanced and floating inputs (600 ± 0.1Ω or 1Mohm) and outputs (600 ± 0.1Ω) on 4mm sockets (not DSLAIIC4 or C6)
- Phone line ports 600Ω or complex impedance on RJ11 jacks. Output level limited to +6dB; DTMF or Pulse dialing
- Network isolated balanced and floating inputs (10kΩ) and outputs (25Ω) on Handset ports on RJ22 jacks; output level attenuated by 28dB on specification above
- Monitor output with selectable sources

Measurements

- Speech level measurement ITU-T P.56 Method B
- Noise in speech to within 20dB of mean active speech level
- Peak and True RMS Levels
- Units of measurement dBm, mV
- Tone burst measurement mode
- Measurement of doubletalk (percentage of measurement period where speech is present on both channels)
- Linearity 0.1dB for levels -60 to +10dBm
- Linearity 0.1dB for frequencies 20Hz to 22 kHz
- Noise floor -85dBm or better
- Range of measured levels -75dBm to +19dBm
- Minimum measurable mean active speech level -65dBm
- Dynamic range of 4-wire inputs 110dB

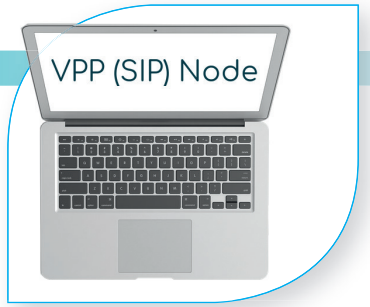
Synchronization

- GPS (product option) - GPS time and position data
- Network Time Protocol (NTP)

DSLA Series Accessories

- GPS module
- Bluetooth adapters for Narrowband and Wideband speech, and audio streaming
- Universal Smartphone adapters with LRGM and LRMG pinouts
- DSLA Connection Cables - two sets of cables to link DSLA to PC and laptop sound cards

VPP Series VoIP Nodes



BRI & PRI ISDN Nodes

Codec Support
- G.711, G.729, G.729A, G.729B, G.723.1, G.722, G.726, iLBC, Opus, EVS all modes, AMR NB & WB with DTX, 8k, 16k, 32k linear pcm
- Frame sizes 5, 10, 20, 30, 40, 50, 60ms codec dependent
- User-defined static jitter buffer

Signalling
- Definable SIP port
- SIP call setup and teardown: RFC 3261
- RTP: RFC 3550
- RTCP
- SDP: RFC 4566
- Digest Authentication: RFC 2617
- IP QoS, DiffServn IEEE 802.1Q VLAN tagging (DSCP modes CS1-7, AF11, 12, 13, 21, 22, 23, 31, 32, 33, 41, 42, 43, EF)
- DTMF RFC 4733

S· IP-less – call established to user-defined IP address and ports

Impairment Generation (VPP+ variants only)
- Random packet loss %
- User-defined packet loss
- Random jitter within range
- User-defined jitter
- EVS & AMR codec rate changes within call
- Managed transmit rate change
- Managed Codec Mode Request (CMR)

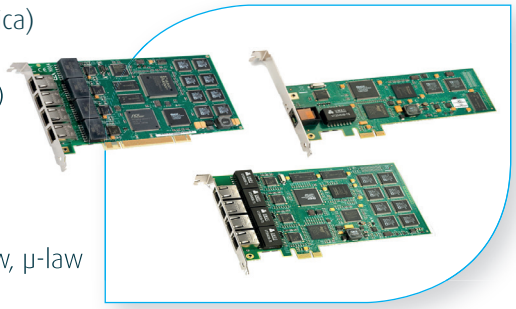
Rate Change Within Call (EVS & AMR codecs)
(a) no negotiation
(b) negotiation within defined parameters (VPP+ variants only)

Packet Capture
- Control
- Signaling
- RTP

Test signal generation
- Normal – voice fonly
- Complex – voice + background noise files

Network Interface (NIC) and IP Management
- Network test interface definable for each call
- IPv4 / IPv6 support

Basic Rate Interface (BRI) Signaling Protocols
- DSSI (Euro-ISDN)
- NI-1 (North American National ISDN 1)
- 5ESS (North America)
- 1TR6 (Germany)
- INS Net 64 (Japan)
- VN3 (France)
- CT1 (Belgium)
- QSIG



Codecs: G.711 a-law, μ-law

Hardware
- 1 x RJ-45 connectors
- PCI rev 2.2 or PCI Express
- Standard Bracket (180.96mm x 120.88mm) or Low Profile Bracket (181.36mm x 80.06mm)

Operating System and Processor
- Windows 7 Professional
- Windows Server 2008 & 2012
- Intel Core Duo, 2GB RAM minimum

Primary rate Interface (PRI) Signaling Protocols
- ETSI-DSS1 (Euro ISDN)
- NET 3 (Belgium)
- VN3/4/6 (France)
- 1TR6 (Germany)
- INS-64 & INS-1500 (Japan)
- 4ESS (North America AT&T)
- 5ESS Custom (North America AT&T)
- National ISDN (NI1 – North America)
- QSIG

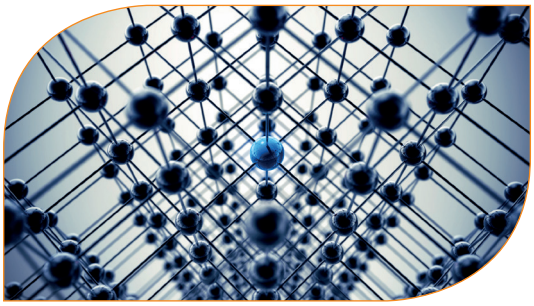
Codecs: G.711 a-law, μ-law

Hardware
- 1 x RJ-45 connectors
- PCI rev 2.2 or PCI Express
- PCI – Standard Bracket (187.84mm x 126.3mm)
- PCIe - Standard Bracket (180.96mm x 120.88mm) or Low Profile Bracket (181.36mm x 80.06mm)
- TE and NT modes supported

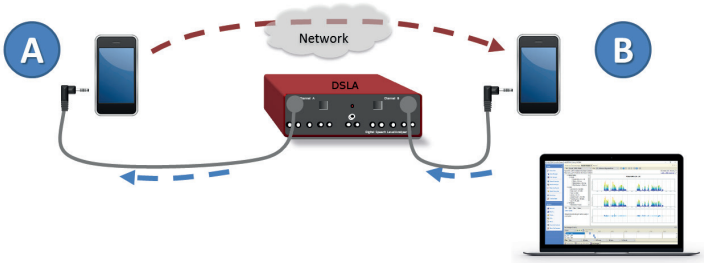
Operating System and Processor
- Windows 7 Professional
- Windows Server 2008 & 2012
- Intel Core Duo, 4GB RAM minimum

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MultiDSLA NodesDatasheet



Cellular Voice Quality Testing using DSLA





Ordering Information

Product No.	Model	Description
ISDN		
BRI		
000033	BRIPC-DKM	ISDN BRI including PCI card and software. Dongle Key Management
PRI		
000035	PRIPC-DKM	ISDN PRI including E1/T1 PCI card and software. Dongle Key Management
000037	PRI-DKM	ISDN PRI (excluding E1/T1 PCI card and software). Dongle Key Management
Digital Speech Level Analyser		
DSLAII		
000029	DSLAIIC	DSLAIIC - 2 channel unit
000030	DSLAIIC4	DSLAIIC - 4 channel 19 inch rack-mounting unit
000031	DSLAIIC6	DSLAIIC - 6 channel 19 inch rack-mounting unit
DSLA Options and Accessories		
Handset		
000012	USP	Universal Smartphone LRGM Adapter
000013	USPR	Universal Smartphone LRMG Adapter
GPS		
000100	PEAQ	PEAQ Audio Quality metrics. Requires DSLAIIC 48k
000107	ASI	Audio Streaming Integrity Metric
000016	GPSM-USB	GPS Module - USB power supply connector
000017	GPSM-DSLA	GPS Module - DSLA power supply connector
000018	GPSM-SERIAL	GPS Module - DSLA Serial Connector (from DSLA S/N 5945)
000019	GPS-E25	GPS Extension Cable 25m for GPSM-DSLA
000020	GPS-E25S	GPS Extension Cable 25m for GPSM- SERIAL
000021	GPS-E50	GPS Extension Cable 50m for GPSM-DSLA
000022	GPS-E50S	GPS Extension Cable 50m for GPSM- SERIAL
000014	GPSCONV-USB	GPS Connection Cable Conversion for supplied Garmin GPS - USB power supply
000015	GPSCONV-DSLA	GPS Connection Cable Conversion for supplied Garmin GPS - DSLA power supply
Other Accessories		
000023	DCC	DSLA Connection Cables
DSLA Upgrades		
000024	DSLA48kUPG	DSLAIIC upgrade for 48k sample rate support
VoxPort Packet Nodes		
VPP: VoxPort Packet SIP Test Agent		
000055	VPP1	VPP Agent for 1 simultaneous call.
000056	VPP2	VPP Agent for 2 simultaneous calls.
000057	VPP3	VPP Agent for 3 simultaneous calls.
000058	VPP4	VPP Agent for 4 simultaneous calls.
000059	VPP5	VPP Agent for 5 simultaneous calls.
000060	VPP10	VPP Agent for 10 simultaneous calls.
000061	VPP20	VPP Agent for 20 simultaneous calls.
000062	VPP30	VPP Agent for 30 simultaneous calls.
000081	VPPR	SVNx upgrade to VPPx for MultiDSLA systems.
VPPf: Automatically re-assignable instances of VPP		
000063	VPP-f10	10 floating re-assignable instances of VPP.
000064	VPP-f20	20 floating re-assignable instances of VPP.
000065	VPP-f30	30 floating re-assignable instances of VPP.
000066	VPP-f50	50 floating re-assignable instances of VPP.
000067	VPP-f100	100 floating re-assignable instances of VPP.
VPP+: VoxPort Packet+ Advanced SIP Test Agent		
000068	VPP+1	VPP+ Advanced SIP Agent for 1 simultaneous call.
000069	VPP+2	VPP+ Advanced SIP Agent for 2 simultaneous calls.
000070	VPP+3	VPP+ Advanced SIP Agent for 3 simultaneous calls.
000071	VPP+4	VPP+ Advanced SIP Agent for 4 simultaneous calls.
000072	VPP+5	VPP+ Advanced SIP Agent for 5 simultaneous calls.
000073	VPP+10	VPP+ Advanced SIP Agent for 10 simultaneous calls.
000074	VPP+20	VPP+ Advanced SIP Agent for 20 simultaneous calls.
000075	VPP+30	VPP+ Advanced SIP Agent for 30 simultaneous calls.
000082	VPP+R	SVNx upgrade to VPP+x for MultiDSLA systems.
VPP+f: Automatically re-assignable instances of VPP		
000076	VPP+-f10	10 floating re-assignable instances of VPP+.
000077	VPP+-f20	20 floating re-assignable instances of VPP+.
000078	VPP+-f30	30 floating re-assignable instances of VPP+.
000079	VPP+-f50	50 floating re-assignable instances of VPP+.
000080	VPP+-f100	100 floating re-assignable instances of VPP+.

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