# 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/PSTN) phone lines, ATA's, PC sound cards (for soft phones), audio streaming devices...
- VPP Series – Use for VoIP network testing, VoLTE handset evaluation and in any testing

## Node type—Quick reference

| Model | Type | Interface | Harware | Software | No. of Nodes |
|---|---|---|---|---|---|
| DSLAIIC | Analog | RJ-22, RJ-11, 4mm Balanced | Desktop | (Measurement and control firmware in device) | 2 |
| DSLA3 | Analog | RJ-22 and 3.5 mm jack handset module | Modular 19" rack mount | (Measurement and control firmware in module) | 1 to 6 modules |
| | | RJ-11 POTS module | | | |
| VPP-fn | VoIP/SIP | Ethernet | No | Windows service | 1-5, 10, 20, 30, 50, 100 |
| VPP+n-f | | | | | |

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# DSLA Series / Analog Nodes

DSLA Technical Specification:
Dimensions (mm): DSLAIIC 72h x 218w x 200d
Net weight: DSLAIIC approx 3kg
Power: DSLAIIC 100-240Vac (external PSU) or 9-18Vdc, 12W
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

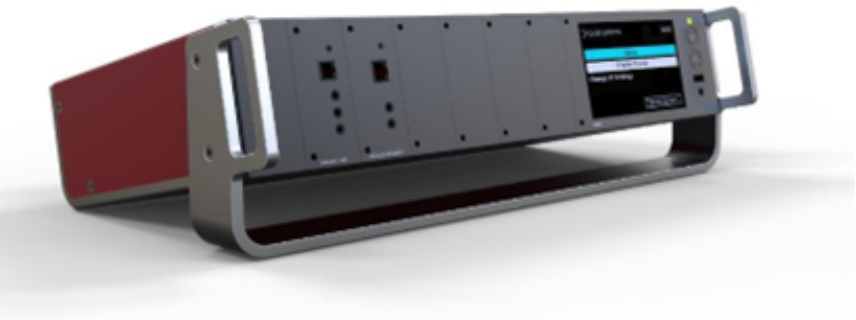
- DSLA Series / Analog – Use for testing involving cellular phones, desk phones, analog (POTS) phone lines, ATA's, PC sound cards (for soft phones), audio streaming devices...
- Any user-supplied speech material in wav or PCM format, generated with user-defi ned mean active speech level with setting range -99dBm to +10dBm
- Artifi cial 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
- 6 Method B
- Noise in speech to within 20dB of mean active speech level
- 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 fl oor -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

# DSLA Series / DSLA 3

**DSLA3 is the new hardware for analog testing driven by MultiDSLA platform.**
**This device is a 6-slot modular system that allows users to flexibly define which interfaces to use.**
**Build your own test system specifically according to your needs.**



The modular conception allows a wide choice of connections such as PSTN lines, phone handsets, legacy adapters used with DSLA2c for Bluetooth, PTT, and any kind of mobile devices. DSLA3 also accepts legacy GPS modules.
DSLA3 embeds a Wi-Fi 5 module to either connect to your network or create an access point to relay the Smartphone control command to the tested Smartphones.
DSLA3 includes a touchscreen to configure its IP and MultiDSLA IP/hostname to reach.

## Test Signal Generation

- Signal sampling rate capability up to 48kHz
- Any user-supplied speech material in WAV or PCM format, generated with user-defined mean active speech level with setting range -99dBm to +10dBm
- Sine wave, including swept and noise 20Hz to 22kHz, 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
- Two independent tracks on each DSLA channel to create Complex mixed signals, e.g. speech plus noise

## Measurements

- Linearity 0.1dB for levels -60 to +10 dBm
- 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

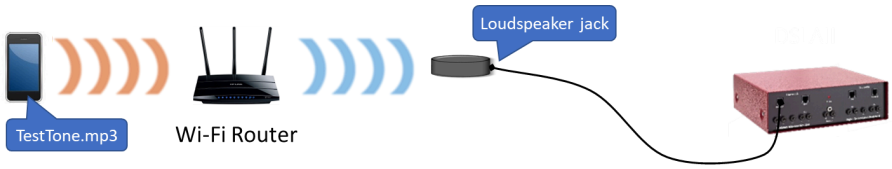
## Module Specifications

- Handset module
  4 wires RJ22 interface
  Control and sync 3.5 mm female jack
  Smartphone 3.5 mm female jack LRGM/LRMG
  Floating inputs (10 kΩ) and outputs (25 Ω)
  Output level attenuated by 28dB
- Line module
  2 wires RJ11 FXO interface
  Control and sync 3.5 mm female jack
  Phone line ports 600 Ω or complex impedance
  Output level limited to +6dB
  DTMF or Pulse dialing, Caller ID on line without adapter

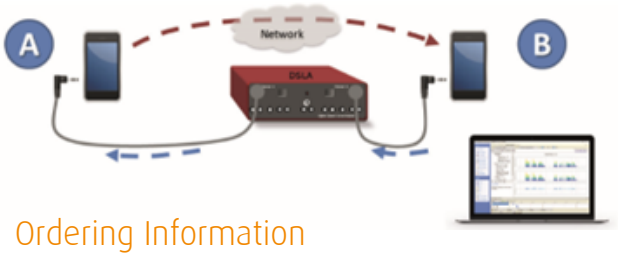
Dimensions: 89Hx244Wx440D (2U)
Net weight: 5Kg
Power: 100-220 V AC
Power Frequency 50-60 Hz
Power consumption:2.3 A max.
Operating Temperature: -2 to 40 °C
Approval and compliance: ongoing
Calibration: every 3 years for analog modules

# DSLA Use cases

## Audio Streaming Integrity




Wi-Fi enabled streaming/casting device to Wi-Fi adaptor, via home router




## Cellular Voice Quality Testing using DSLA

## Ordering Information

| Product No. | Model | Description |
|---|---|---|
| **Digital Speech Level Analyser** | | |
| **DSLAII** | | |
| 000029 | DSLAIIC | DSLAIIC - 2 channel unit |
| **DSLA3** | | |
| 000165 | DSLA3 | DSLA3 - Chassis |
| 000166 | DSLA3-MO-AL | RJ11 PSTN FXO Analog Line Module |
| 000167 | DSLA3-MO-AH | RJ22 Analog Handset Module |
| **DSLA Options and Accessories** | | |
| **BlueTooth** | | |
| 000011 | APTX | Custom Bluetooth adaptor, NB/WB speech, APTx Low-Latency |
| 000012 | USP | Universal Smartphone LRGM Adapter |
| 000013 | USPR | Universal Smartphone LRMG Adapter |
| 000224 | USBC | USB Type C to Jack 3.5mm adapter for LRGM/LRMG |
| **GPS** | | |
| 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 - 12V version - 25m for GPSM-DSLA |
| 000020 | GPS-E25S | GPS Extension Cable - 5V version - 25m for GPSM- SERIAL |
| 000021 | GPS-E50 | GPS Extension Cable - 12V version - 50m for GPSM-DSLA |
| 000022 | GPS-E50S | GPS Extension Cable - 5V version - 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** | | |
| 000145 | DSLA POWER SUPPLY | Power Supply for DSLAIIC (part number 000029) |
| 000023 | DCC | DSLA Connection Cables |
| 000139 | CID | Caller ID Cable Accessory |
| **DSLA Upgrades** | | |
| 000024 | DSLA48kUPG | DSLAIIC upgrade for 48k sample rate support |

# VPP Series / VoIP Nodes

Vox Port Packet is the reference softphone within MultiDSLA systems. VPP is used in labs for mobile tests with base stations and as a SIP service testing tool, allowing to monitor service availability and performance, on premise or for cloud-based solutions.

Licensing is managed by MultiDSLA controller. 'f' in VPPf or VPP+f means floating license.

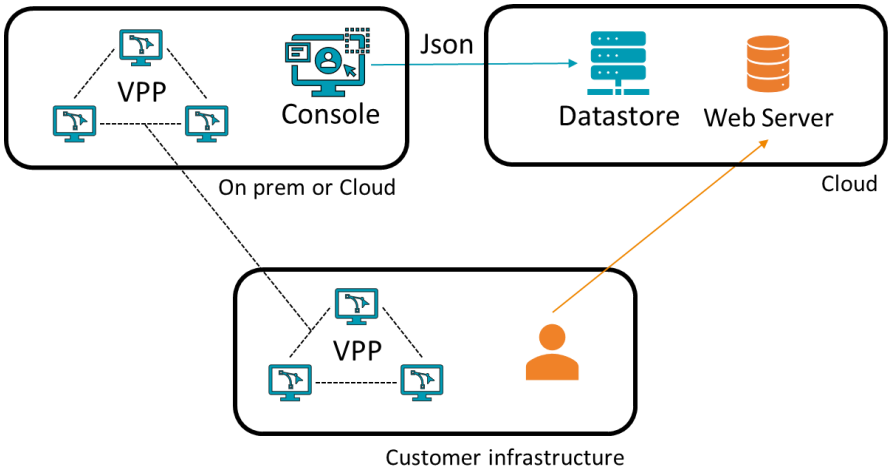
| Item | VPPf | VPP+f |
|---|---|---|
| Requisites | Windows 10 / 11 | |
| | Windows Server 2016 / 2019 | |
| | Intel Core Duo, 2 GB RAM minimum | |
| Network Interface (NIC) and IP Management | Definable network test interface for each call | |
| | IPv4 / IPv6 support | |
| Codec Support | G.711, G.729, G.729A, G.729B, G.723.1, G.722, G.726, iLBC, Opus, 8k, 16k, 32k linear pcm | |
| More codec support | - | EVS all modes, AMR NB & WB with DTX, |
| Frame size | 5, 10, 20, 30, 40, 50, 60ms codec dependent | |
| Parallel instances per VPPf host | Maximum 30, | |
| | Can go up to 50 with specific hardware requisites | |
| User-defined static jitter buffer | X | X |
| Signaling capture | X | X |
| SIP over UDP | X | X |
| SIP over TCP | | X |
| SIP over TLS | | X |
| Secured RTP | | X |
| IMS support | | X |
| Inband and outband DTMF | X | X |
| SIPLess (no signaling, just RTP) support | | X |
| DSCP tagging | X | X |
| Jitter and packet loss generation on output stream | | X |
| AMR EVS in-call bit rate change | | X |
| EVS to AMR interoperability | | X |
| Packet based Loopback | X | X |

Compliances
Signalling:
RFC2617
RFC2976
RFC3261
RFC3264
RFC3325
RFC3903
RFC4568
RFC5630

Media:
RFC3550
RFC3711

DTMF:
RFC4733

# MultiDSLA Vox Port Packet use cases




## 24/7 SIP service monitoring

SIP quality and Root cause analysis
100% software
Cloud-based or on premise observability offer
Speech to text capabilities for IVR tests


## Drive testing

Call are placed again if closed
GPS location
PESQ and POLQA scoring
Signal Strength (SMC)

## Ordering Information

| Product N° | Model | Description |
|---|---|---|
| Vox Port Packet Nodes one time licenses | | |
| VPPf: Automatically re-assignable instances of VPP | | |
| 000210 | VPPf-LIC | MultiDSLA Licence for VPPf Support - Includes 1x VPPf1 and 1x MUI-DS-1 node license |
| 000184 | VPPf-ADD-1 | 1 additional VPPf instance - Include 1x node licence for MultiDSLA (MUI-DS-1) - Requires VPPf |
| VPP+f: Automatically re-assignable instances of VPP | | |
| 000211 | VPP+f-LIC | MultiDSLA Licence for VPPf+ Support - Includes 1x VPP+f1 and 1x MUI-DS-1 node license |
| 000189 | VPP+f1-ADD-1 | 1 additional VPPf+ instance - Include 1x node licence for MultiDSLA (MUI-DS-1) - Requires VPP+f |
| Vox Port Packet Yearly subscription licenses | | |
| VPPf | | |
| 000212 | VPP-Setup | One-Time Setup Fee for VPPf |
| 000213 | VPPf1-Sub | 1x VPPf yearly licence subscription for MultiDSLA - Subscription Mode - Yearly price |
| VPP+f | | |
| 000214 | VPP+-Setup | One-Time Setup Fee for VPP+f |
| 000215 | VPP+f1-Sub | 1x VPP+f yearly licence subscription for MultiDSLA - Subscription Mode - Yearly price |