Specification

General

Size: 215 x 160 x 33 mm. Weight 600g.

Display: 128 x 64 pixel OLED graphic display with 180° viewing angle. Brightness and power-off time configuration options are provided.

Microphone: Dual low-noise microphone inputs (two 3.5mm mini-jacks) with 5V power, calibrated to UniSon standard (-30dBu=100dBSPL). Precision calibrated miniature measuring microphones (1/4") available at extra cost – see www.lindos.co.uk/microphones.

UniSon: Input and output sockets carry power (6 to 9V 1A max).

Headphone socket: 3.5mm stereo mini-jack for headphones 32ohm or greater. Automatic muting of internal speaker for stereo listening.

Power: Slot-in Sony NP500/530/560 style rechargeable lithium-ion battery included (15hrs use) or external 12V (11-14V) DC from 500mA mains adapter via 2.1mm power jack. Battery charges internally in 15hrs (half charged in 4hrs) with power connected.

Monitor loudspeaker: Built-in 65mm speaker and volume control for listening – monitors L-chan on all measurements.

Accessories included: Manual, UniSon to XLR and UniSon to phono input and output adapter leads (1m), mains lead, RS232 lead, USB to serial adapter, 12V 1A mains PSU, lithium-ion battery and Lin4Win Windows XP,7,8,10 compatible support software on CD.

Optional extras: UniSon to 3.5mm mini-jack leads, MM3 calibrated microphone, hard and soft carry case options, test CD and test tape available to order.

Analyser

Inputs
Two-channel 44kohm balanced or 22kohm unbalanced on UniSon D-type socket (with 6-9v 'PowerBus' for microphone preamps etc).

Level measurement
Two-channel simultaneous level measurement: -50dBu to +19dBu in 10dB ranges (autoranging/manual). Accuracy ±0.05dB -20dBu to +19dBu. Quasi-peak reading as standard with fast option. Frequency readout to over 50kHz with high precision (±1Hz resolution). ±180° 20Hz – 20kHz phase readout with ±2° resolution and accuracy (up to 40kHz with reduced accuracy).

Normalise
Press and hold to normalise to any level in the range +19dB to -50dB. Toggle normalised or absolute.

PPM mode
Bright, two-channel simultaneous display with PPM dynamics to IEC268 type II (BBC) standard. This mode also allows for -60 to +30dB precision variable gain on the loop-through output, with very low noise (-85dB weighted) and distortion (-90dBu) for studio use.

Noise measurement
ITU-R 468 weighting and quasi-peak dynamics. Residual input noise -88dBu weighted.

Distortion residue
Instantly normalises and then nulls the fundamental and measures the residue on a 1kHz tone weighted according to IEC268 (ITU-R 468 curve and quasi-peak detector). Fully auto-ranging display relative to normalised level. Typical null depth -79dBu.

Crosstalk measurement
Measures weighted crosstalk, automatically muting the channel selected, while driving the other at the selected frequency and level.

Sequence mode
Receives over 30 Lindos test segments. Displays the results of all sequence segments on the OLED screen with up-down cursor on all graphs. Stores four complete sets of results for later transferring to a PC.

Oscillator

Outputs
Two-channel (10ohm source impedance) balanced centre-grounded UniSon on 9-pin D-type plug. Unbalanced with phono or mini-jack leads.

Frequency range
4Hz to 40kHz sine in third and twelfth-octave steps, 1kHz 5kHz 10kHz square waves.

Frequency accuracy
±0.05% of specified synthesised frequency.

Flatness
±0.02dB typical from 20Hz to 20kHz, -0.05dB at 31kHz, -0.6dB at 16Hz and 40kHz.

Level range
-90dBu to +19dBu in 0.5dB steps, balanced, centre-grounded; -96dBu to +13dBu single-ended. Accuracy of ±0.02dB is typical at 0dB; ±0.05dB is typical at -60dBu and +19dBu.

Distortion
-76dB distortion residue (weighted) (-86dB/0.005% THD) at 1kHz (22Hz-22kHz bandwidth) typical. Minimum load 600Ω (-72dB THD).

Mute
Mute, restore, and channel selection. Auto-mute on selecting noise measurement. Auto-signal source selection on crosstalk and distortion. Residual noise when muted: -86dBu weighted.

Sequences
19 pre-defined sequences and over 30 selectable test segments for user assembly including sweeps 20-20k and 40-40k, noise, crosstalk, distortion residue, noise vs time plot, headroom plot and phase plot.

Line-up segments
Special segments for repetitive GLITS and channel ident tests. Also PPM and ITU-R 468 inverse-weighted tone-burst tests.

Presets
4 level and 4 frequency presets (user programmable).

UniSon – a unified analogue interface and level standard.

UniSon is a new standard proposed by Lindos for use by all manufacturers. The MiniSonic uses the D-connector implementation which offers two channels (balanced or unbalanced) through a single compact connector. The full UniSon standard, however, includes a specification of alignment levels for professional and consumer equipment as well as limits for input and output impedances and even a quality grading system based on measurements.

Advantages of UniSon are:
1. It puts two channels on one connector - no more struggling to see which channel is yellow or red (or is it black?!).
2. By providing power it makes the use of active adaptors and preamps possible, including powered mics with high level output for use with long leads (a neater equivalent to the 'phantom power' mics used by professionals).
3. By adopting centre-grounding it retains compatibility with professional balanced lines, while operating from only 5V rails at low power, facilitating the use of a balanced connection in portable and consumer devices.
4. It facilitates the interconnection of professional and consumer items, often with just a passive connecting lead.
5. It standardises signal levels once and for all, giving manufacturers a chance to simply state that inputs and outputs are 'UniSon compatible'.

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Lindos

FAST AUDIO TESTING

MiniSonic MS20

from the experts in audio

The MiniSonic MS20 is a combined oscillator and measuring set in a stand-alone unit, which is both compact and portable.

As well as being a quality tester the MS20 is a precision line-up tool, a stereo PPM, a balanced-unbalanced converter (both ways), a stereo microphone pre-amp, a headphone amp, and a level converter. Automated measurements can be made through the use of Lindos sequence testing. In as little as 20 seconds, the MS20 will produce a detailed analysis of your audio equipment, and present the results on the OLED display or on your PC.

Features…

- **Measures level, frequency, phase, frequency and phase response, noise, distortion, crosstalk, wow and flutter, speed, path latency and headroom.**
- **Bright OLED display, with 180º viewing angle.**
- **4Hz to 40kHz digitally synthesised generator.**
- **+19dBu out (balanced).**
- **Precision two-channel level measurement with 0.01dB resolution.**
- **Noise and distortion measurement with perceptually based weighting.**
- **Lindos standard sequences for fast automatic testing.**
- **Displays graphs of frequency and phase response, headroom and noise against time.**
- **Internal flash memory storage of sequence results, user settings and presets.**
- **Built-in stereo low-noise microphone preamps.**
- **Serial computer interface for remote control.**
- **Windows™ support software Lin4Win included (Windows 10 compatible).**
- **Automatic firmware updates via the Internet.**
- **Mains/rechargeable battery operation (15 hours) – with built-in charging.**
- **Novel tilt-panel case.**
- **UniSon interfaces for instant compatibility with both balanced professional and single-ended consumer levels.**
- **Stereo PPM display with stereo gain controlled loop-through output.**
- **Stereo headphone amp.**

Digitally Synthesised Oscillator

Generates sine waves from 4Hz-40kHz in third and twelfth-octave steps at signal levels from -90dBu to +19dBu (balanced). Sequence editor mode for creating your own sequences with over 30 different test segments to choose from. 4 level and 4 frequency presets (user programmable).

Level

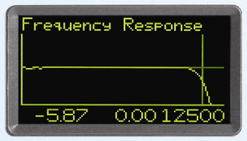
Continuously measures stereo input levels, frequency and phase. Relative measurements supported. dBSPL option provided for use with Lindos calibrated microphones. Measurements are autoranging with manual override option.

Noise and Distortion Measurements

Measures weighted noise and automatically mutes the oscillator. Measures 1kHz weighted distortion (ITU-R 468). Both modes are autoranging with manual override option.

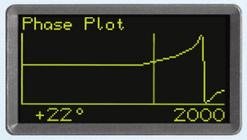
Sequence Testing

Automatic sequence testing for all measurement functions with optional normalisation. Additional test segments include, channel ident tones, PPM tone-burst tests and a path latency test (delay). Up to four complete sets of results can be stored in the unit for transferring to a PC.



Frequency Sweep

5s and 20s sweeps provided, (20Hz – 20kHz or 40Hz – 40kHz). A Lindos test CD, WAV/MP3 files, or any other Lindos audio test system can be used as the signal source. Lindos sequences use FSK (frequency shift keying) tones to syncronise the oscillator and measuring set over the audio path.

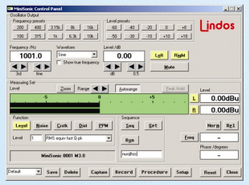


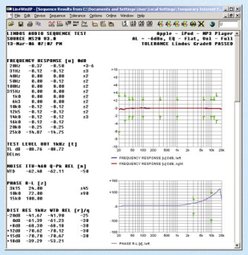
Phase, Long Noise and Headroom Plot Test Segments

Plots phase against frequency above 1kHz. Level against level from 0dBu - +19dBu, ideal for checking levels to the IEC limit of +18dBu. Noise against time over a 20 second period, great for spotting digital errors.

PPM (IEC 268 type II) (BBC UK Standard)

Features stereo PPM with fast-attack and dual-speed options for analysing signal dynamics. Stereo gain controlled loop-through output - ideal for setting levels in video post-production, or for field-recording.





Lin4Win Software Included (Windows 10 Compatible)

- Complete remote control of all functions, without restricting operation from the MiniSonic's front panel.
- Results management with simple cut and paste facilities for exporting text and vector graphs to windows applications.
- Tolerances can be applied to any set of results providing pass/fail indication on each result.
- Capture button that prints a single measurement line to the results sheet. This is extremely useful when testing equipment manually where results would normally be written by hand.
- Recording controls for logging a series of measurements of the currently selected function. A graph of the incoming level against time can also be displayed for monitoring peaks on music etc.
- Procedure testing allows a user-defined series of measurements to be logged automatically – ideal for complex production testing.
- Programmable tone bursts.
- Graph options window allows complete customisation of all graphs.
- Ability to publish results to our online test results database or save them in HTML format for vour own website.