



Master Stereo & Surround Sound Meter

MSD600C-5.1, desktop

PT0600C-5.1, rack mount

Solutions in Audio & Video

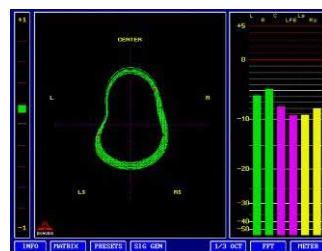
- Ideal for monitoring and test of surround sound signals.
- Features Peak Programme Meter for measurement of audio levels on up to 6 audio signals.
- 7 scales are directly selectable to conform to the standard used.
- PPM colours and headings are user programmable for easy identification.
- Vectorscope with unique Jelly-Fish™ display supports aural impression of surround sound at a glance.
- Multiple phase correlation meter indicates proper phasing to allow for downmix .
- 3 AES3 inputs are readily available for 5.1 surround sound.
- Choice of 1024-point FFT spectrum analyser and 1/3-octave analyser display frequency distribution over full audible range.
- AES3 bitstream status display indicates characteristics of the digital audio signal.
- Bright, VGA colour display with adjustable intensity allows adaptation to environmental light conditions
- VGA output connects directly to an external display for remote or larger screen.

The MSD600C-5.1 and PT0600C-5.1, Master Stereo and Surround Sound Meters, from DK-Technologies offer PPM/VU level meter, audio vector oscilloscope and phase meter as the primary tools.

The Level Meters have direct selection of 7 PPM/VU scales. All the standard scales are available including Nordic, EBU, BBC, ABC, NBC, DIN, VU, Digital and others. Each scale can be configured individually concerning overload level and reference level. Furthermore the colour and width of each PPM bar can be set by the user.

The DK-SCALE™ software program for Windows contains a large library of scales, which can be downloaded easily to the meter. Modification of existing scales or designing of new scales according to your own specifications are also possible with the software. For easy identification each channel can be named individually with up to 4 characters.

Surround Sound



The Jelly-Fish® in the middle intuitively displays the surround sound level.

As surround sound becomes more and more the standard in studios nowadays, accurate audio monitoring is becoming increasingly important.

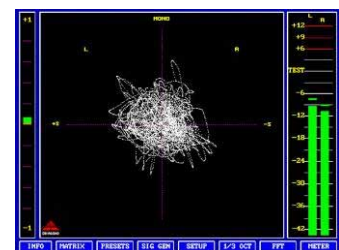


DK-Technologies' exclusive Jelly-Fish™ surround indicator has become the adopted standard, presenting the surround sound image in a logical and intuitive way.

The energy content of all channels is easily recognizable on the screen, and phase errors in individual vectors are immediately highlighted by a red colour.

All surround formats are supported: 4.0, 5.1, 6.1, and 7.1, and even future formats may be handled by the introduction of new software.

Stereo Sound



Display of a stereo signal. The level meter to the right has selectable scales.

The oscilloscope shows the stereo image in the Lissajous-format, where a perfect stereo signal would be represented by a circular figure, or a 'ball', and mono would be a vertical line.

Phase Meter

The phase meter is of the "center-zero" type and immediately advises out-of-phase errors by pointing towards the [-1] area and changing to red colour.

Spectrum Analyser

The spectrum analyser section has both an FFT-analyser and a 1/3 octave analyser.

The Jelly-Fish™ Display

The audio channels in a surround sound signal will normally be kept separate prior to the final encoding into a standardized format. On the bar graph meter the levels of the individually channels are shown. However, to visualize the surround sound, just as the listener hears it, would be a far simpler way of achieving the desired sound effects.

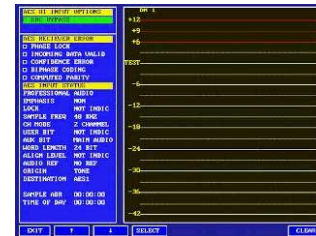
The Jelly-Fish™ display is this simple tool that provides the visual impression and overview of the surround signal. Due to its simplicity and the comprehensive information it contains, the Jelly-Fish™ has established itself as the industry standard for those working with surround sound.

The Jelly-Fish™ displays the centre channel of a 5.1 surround signal in the top of the screen. The left and right channels on the left and right side of the screen. The left and right surround signals are displayed in the lower part of the screen.

If signals with the same level is applied to all channels the Jelly-Fish™ shows a circle, whose size is proportional to the sound level. When a resound recording is displayed, the Jelly-Fish™ changes shape and size like a real jelly fish.



In a clever way the Jelly-Fish™ provides information about out of phase relations between the channels. Normally the outline of the Jelly-Fish™ is green or white. If a signal exceeds plus or minus 90°, part of the Jelly-Fish™ outline turns red. The longer the red band is, the larger is the phase error. The red bands instantly signals that the phase error must be corrected. The combination of relative audio level and phase errors in one single display in the Jelly-Fish™ is the most efficient tool for the audio engineer to secure the best surround signal just at a glance!



The bit status display supplies information about the content and the physical layer of the AES3 data signal.

est true peak, number of clippings, and number of mutes over time.

Audio Matrix

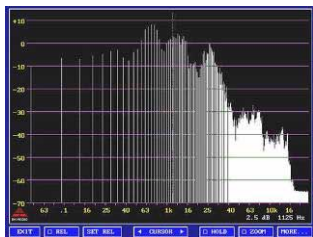
The instruments contain a complete audio matrix. It offers full flexibility in routing any of the input signals to a specific bar graph and location on the Jelly-Fish™ display. The crosspoints of the source and destination channels can be easily selected from the menu. The DK-Matrix™ software makes the selection of crosspoints and several other parameters even easier. Specific instrument setups may be stored in any of the 11 presets for later recall.

Compact Construction

The instruments are very compact units. Everything has been fitted into a box not much bigger than the size of a pocket-book. The MSD600C-5.1 will fit nicely onto your console or work desk, and the PT0600C-5.1 may be placed conveniently next to a video waveform monitor. The PT0600C-5.1-BNC is another version equipped with BNC connectors for easy connection to 75 Ohm AES3id audio lines. The other versions provide access to the inputs via a single D-Sub connector.

The special utility input holds the power connection, the RS232 communication port, a sync input and the output for an external VGA-monitor.

The FFT is primarily used for accurate measurements and exact identification of problem frequencies. To this end a cursor is available and level and frequency will be shown for each cursor position across the frequency range on the display.



The FFT spectrum of the input signal is calculated at 1024 discrete frequencies.

The 1/3-octave analyser has 30 bars, grouped in full octaves from 20 Hz to

16000 Hz. This standard tool is primarily used during recording to check the energy distribution of the signal.



The 1/3-Octave spectrum shows the energy distribution of the input signal

Other functions

In the digital mode the instruments will show a Bitstream Status Display. Other features are the time code input which will synchronize to SMPTE, and a Statistical Session Report showing high-

Related Products

Desktop versions:

MSD100C

Colour display. Pre-configured, analogue and AES3 stereo inputs and outputs. Basic functionality.

MSD200C

Colour display. Pre-configured, analogue and AES3 stereo inputs and outputs. Full functionality including spectrum analysis.

MSD600C-III

Colour display. Pre-configured, 2 analogue, 2 x AES3 inputs, 2 analogue outputs, and 2 AES3 outputs.

MSD600M++

Modular configuration of inputs in analogue, AES3, SDI and outputs in analogue and AES3.

Rack mount versions:

PT0200C:

Colour display. Pre-configured, analogue and AES3 stereo inputs and outputs. Full functionality including spectrum analysis.

PT0600C-III:

Colour display. Preconfigured, 2 analogue, 2 x AES3 inputs, 2 analogue outputs, and 2 x AES3 outputs.

PT0600M:

Modular configuration of inputs in analogue, AES3, SDI and outputs in analogue and AES3.

PT0660M:

Modular configuration of inputs in analogue, AES3, SDI and outputs in analogue and AES3. Volume control.

PT0660M-LS:

Modular configuration of inputs in analogue, AES3, SDI and outputs in analogue and AES3. Stereo loudspeakers and volume control.

Peak Programme Meters:

478-series

Stereo PPM with AES3 or analogue inputs. With or without phasemeter. Horizontal or vertical versions for rack mount and desktop. Choice of scales.

Product Data

PPM Analogue References

- Indication: 0 dBu
- Input voltage: 1.55 V

PPM Scales

Dynamic response:

- Pflichtenheft 3/6: 3 ms / -3 dB
- IEC 268-10: 5 ms / -2 dB
- IEC 268-17: VU: 300 ms

Return (fallback) time:

- Pflichtenheft 3/6: 20 dB / 1.5 s
- IEC 268-10: 20 dB / 20 s

Division of scales:

- Type I: -42 dB to +12 dB
- Type IIA: +1 dB to +7 dB
- Type IIB: -12 dB to +12 dB
- Type DIN: -50 to +5 dB
- Type VU: -20 dB to +3 dB
- Type DMU-1: +60 dB to 0 dB
- Type DMU-2: -6.0 dB to 0 dB

Phase Correlation Meter

- Indication range: +1 to -1

Audio Vectorscope

- Automatic gain offset range: 30 dB
- Phase error between channels: none

LCD Display

- Resolution: 640 x 480 pixels
- Pixel size: 0.2 mm
- Lifetime: 50,000 hours
- Contrast ratio: 100:1
- Viewing area: 135 x 100 mm
- Luminance: 300 cd/m²

Digital Inputs

The inputs are equipped with sample rate converters to synchronize the inputs to the internal clock. The sample rate converters may be by-passed. In this case the base unit should be synchronized externally by an AES3 signal applied to the sync input on the utility connector.

- Number of AES3 inputs: 3
- Sample rate range: 30 Hz to 100 kHz
- Internal sample rate: 48 kHz
- Bit resolution: 24 bits

- Group delay: maximum 1.75 msec
- Passband ripple: ± 0.008 dB
- Total harmonic distortion and noise: typical -103 dB at 1 kHz
- Dynamic range: larger than 120 dB
- Nominal input impedance: 110 Ohm (MSD600C-5.1 and PT0600C-5.1) or 75 Ohm (PT0600C-5.1-BNC)

Power Supply

- Supply voltage range: 12 V to 24 V DC
- DC power consumption: approx. 18 W at 12 V DC nominal supply
- Safety: according to IEC 65

Environmental Conditions

- Temperature range: 0 °C to 45 °C

Cabinet Dimensions

MSD600C-5.1, desktop version:

- Width: 186 mm
- Height: 144 mm
- Depth: 50 mm plus

PT0600C-5.1, rack version:

- Width: 214 mm
- Height: 134 mm
- Depth: 50 mm plus connectors.

PT0600C-5.1-BNC

- Width: 214 mm
- Height: 134 mm
- Depth: 50 mm plus connectors.

Rack Mounting



The PT0600C-5.1 fits into the standard rack mount cabinet next to a video waveform monitor such as the PT5664 Digital and Analogue Waveform Monitor. The

combination offers simultaneous monitoring and test of the audio and video signals in television environments.

Rear Panel

MSD600C-5.1 and PT0600C-5.1



PT0600C-5.1-BNC



Ordering Information

Base Units

MSD600C-5.1	Master Stereo & Surround Sound Meter, desktop version. 6-channel, 3 x AES3 inputs. DC supply input, RS-232, and VGA output. Incl. mounting bracket.
PT0600C-5.1	Master Stereo & Surround Sound Meter, rack mount version. 6-channel, 3 x AES3 inputs, DC supply input, RS-232, and VGA output.
PT0600C-5.1-BNC	Master Stereo & Surround Sound Meter, rack mount version. 6-channel, 3 x AES3id inputs, DC supply input, RS-232, and VGA output.

Options

MSD600-PS/O	Power Supply Adapter, 100-240V AC to 15V DC, 3.5A, IEC connector.
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Accessories

MSD600C-5.1-Cable/O	Connector Cable for MSD600C-5.1 and PT0600C-5.1. D-Sub to XLR.
200C/600C-U-Cable/O	Utility Cable for MSD/PT0200C and MSD/PT0600C. RS232 and IEC power connection.
MSD-BASE/O	Aluminium Base Plate for MSD desktop version.
PM8539	19" Rack Cabinet
PM8540	Blank Panel for PM8539

DK-Technologies



Data subject to alteration without notice.
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