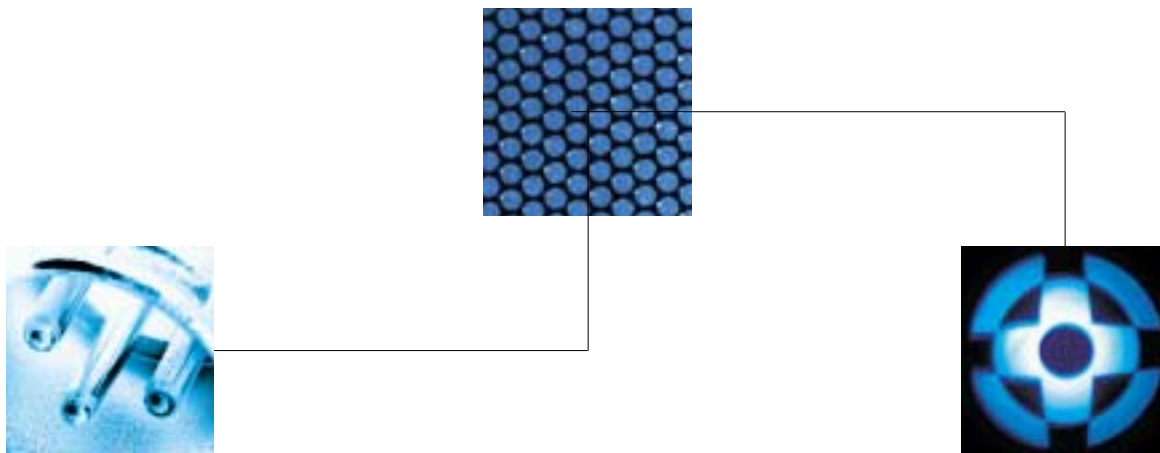




introduction

Klark Teknik – audio engineering like no other in the world.

contents

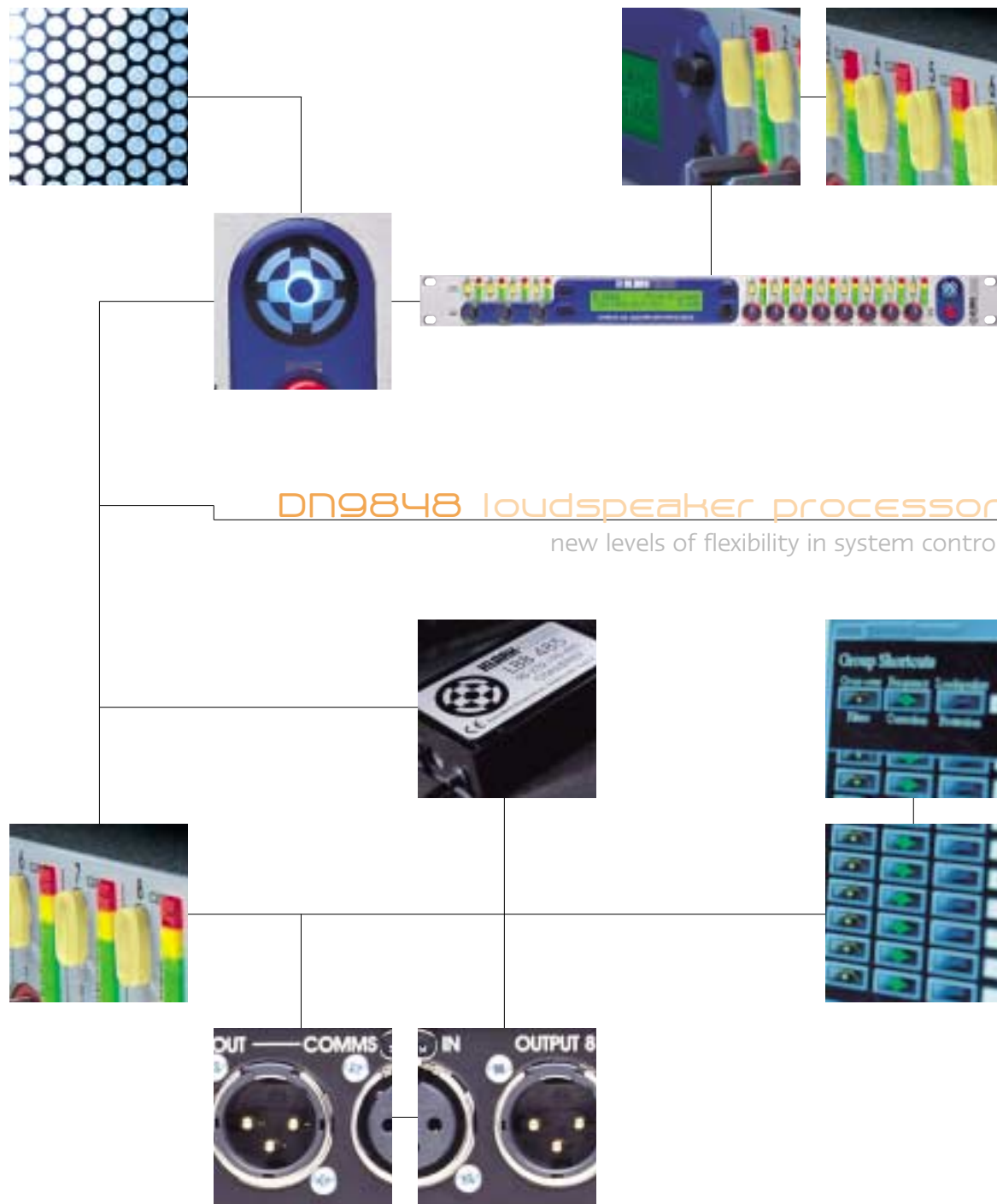
DN9848	—	loudspeaker processor
DN3600	—	equaliser system
DN1248 <i>Plus</i>	—	mic splitter
DN360	—	graphic equaliser
DN300/332	—	graphic equalisers
DN320/330	—	preset equalisers
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In 1974, brothers Phil and Terry Clark founded Klark Teknik Research Ltd. In the years immediately following, their innovative approach to design and development allowed them to introduce some truly groundbreaking designs. The world's first digital delay and digital reverb units emanated from their laboratory, and their descendants remain in common usage all over the world to this day. However, it was their concepts for equalisation devices that really changed the world of professional audio. Their earliest designs eventually matured into the world famous DN360 that remains the de facto standard graphic EQ for audio professionals everywhere.

Today, Klark Teknik continues to uphold the original vision of the Clark brothers: innovation in design, followed by uncompromising dedication to engineering and sonic quality. Most of our units are still made and tested by hand, a time consuming and labour intensive process that remains the only method by which we can maintain the quality that our customers expect. Uniquely in its field, Klark Teknik also provides the customer with an opportunity to invest in leading-edge equipment with an extraordinary working lifespan and unrivalled retained value. Global support for our products is readily available from the factory in Kidderminster, from our international distributor network covering more than 50 countries, and direct from the Klark Teknik website at www.klarktechnik.com.





Digital loudspeaker system control has been one of the fastest developing areas of signal processing in recent years. This is principally because it allows designers to combine a number of key control functions within a single device, thereby lowering overall costs and adding convenience. Unfortunately, in many cases the relevance of the audio performance of the device has been overshadowed by the 'bells and whistles' functionality of the unit, ultimately somewhat defeating the object of the exercise. With the Klark Teknik DN9848, no compromise has been made in either the feature set or the audio performance.

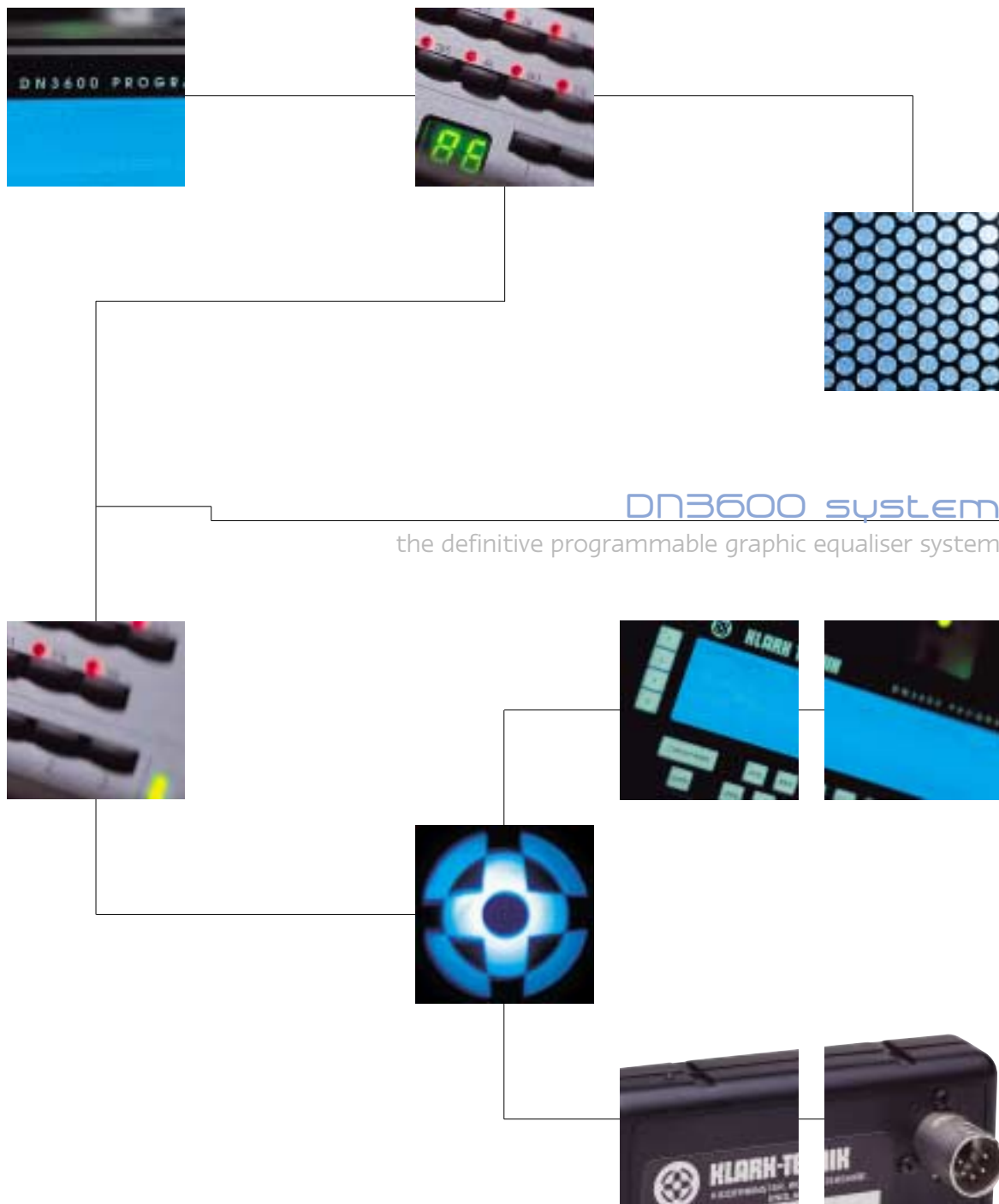
Unique in that it is the only such device fitted with XLRs to pack four inputs and eight outputs into a single rackspace, DN9848 brings a new level of flexibility to system control whether for live production or installation use. Since there is no preset routing within the device, it can be easily pre-programmed to perform almost any system-control task. Limiters and compressors on all outputs plus compressors on all inputs provide ultimate speaker control and protection, whilst no less than eighty bands of fully parametric EQ allow for both room and system equalisation. Best of all, there's enough processing power onboard to allow every function to be available all the time, regardless of what is already in use.

The proprietary Preset Editor software (utilising Microsoft Excel) allows simple up-and-down-loading of system parameters into the FLASH memory locations, as well as storage and transmission of system information. Need a new system configuration to be loaded into a unit on the other side of the world? No problem, put the information into Preset Editor and e-mail it to wherever it needs to go, where it can then be uploaded into the unit in seconds.

Online remote control and offline system creation is provided via the Stardraw Audio system. Whilst it allows intuitive control of every function of an individual unit or units, it also (and uniquely) allows inputs and outputs to be assigned to control groups. These groups can then be made to control any parameter of the unit or the system – muting, delay, EQ, dynamics, speaker or room zones, whatever you need. Simple screens with easy-access controls make for quick adjustments, and entire system set-ups can then be stored as a computer file.

All supporting software programs are available free of charge from the Klark Teknik website (www.klarktechnik.com). A high-quality RS-232 to RS-485 converter (the LBB-485) is also available. This allows computer connection to DN9848s at greater range than RS-232 will support, and is fitted with standard XLR connectors to interface with regular audio cables.





A natural development from the industry-standard DN360, DN3600 takes all the best features of Klark Teknik analogue design and adds digital front-end control. The user benefit of this hybrid is the traditional warmth and musicality of KT's variable-Q analogue graphic EQ, plus memory store and recall functions, notch filters, hi and lo-pass filters, and password-lockable system protection.

It also provides the unique 'auto gain-ranging' feature that has made DN3600 so popular with professional users – simply put, this (defeatable) feature automatically compensates for the gain change that occurs when a fader is moved. Thus any EQ curve can be applied to a given mix or channel, and the output level will remain exactly the same as the input level. This means that drastic cuts and boosts can be applied without affecting the gain structure of the system in any way. It also provides a 'true bypass' feature, in that direct comparisons can be made between 'EQ in' and 'EQ out' without changing the overall level of the channel. No other commercially available unit currently offers these features.

The large backlit LCD display is easy to work with, and can display either virtual fader or actual curve responses. A single DN3600 can address a system of up to 64 x DN3601 slave units as part of a Pro-Midi loop, and each unit can store up to 66 user memories.

The DN3601 slave unit is essentially a DN3600 without any front panel controls, offering all the functionality of the main unit at a significantly lower cost. Like the DN3600 it can be addressed individually or as part of a system by a DN3698 handheld remote controller.

The DN3698 handheld remote controller packs all the functions of a DN3600 into a compact mobile unit designed for handheld remote access to a DN3600 system. Up to 49 x DN3600 / DN3601 units can be controlled simultaneously, giving instant remote access to up to 98 separate mixes. Mixes can be individually named, copied, compared and morphed between current and previous selection, and stored into one of 66 onboard memory locations.

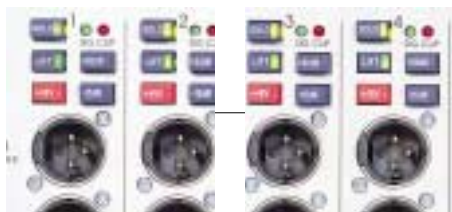
The DN3603 docking station is a 2RU rackmountable device that performs a number of functions. Firstly it allows safe rack transport for the DN3688, but it also acts as a MIDI data dump for storage of program settings from the handheld remote. It is also the data interface (whether hardwired or wireless) between the handheld device and the rest of the system.

The WS01 is a dedicated, bi-directional wireless system that allows wire-free connection between the DN3698 handheld remote and the rest of the system. A 2-hour charge will provide up to 5 hours continuous use, and a working range of up to 50m is available.



DN1248 *Plus* mic splitter

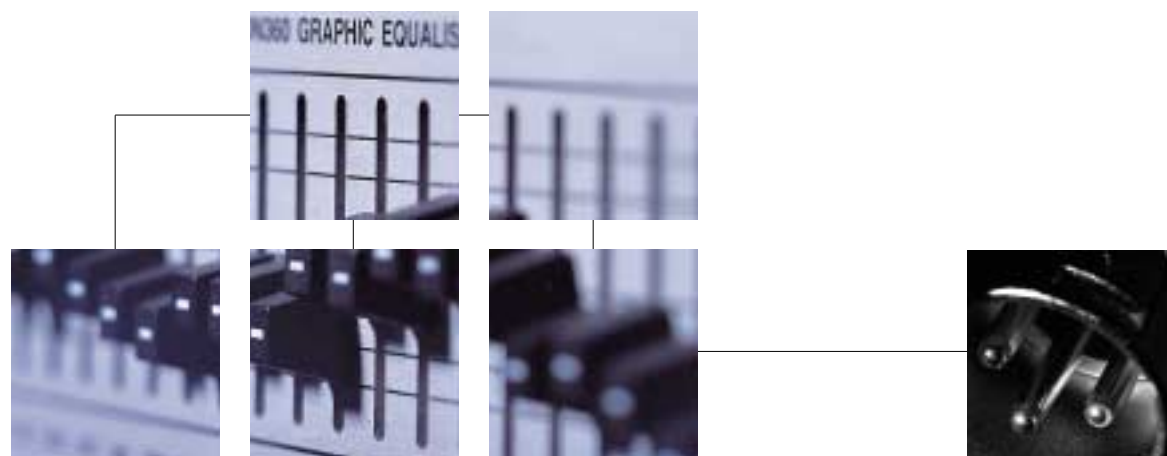
a further dimension of flexibility



Back in 1999, Klark Teknik responded to market demand by producing exactly what our customers had been requesting for years – a roadworthy and flexible active signal splitter system with the superlative audio performance they'd expect from Klark Teknik. So, DN1248 was born, and also delivered with a host of features simply not found in any comparable unit.

We specified an internal power supply (with a factory option of dual auto-switching PSUs at very low cost), more inputs and outputs per unit than any competitor, a uniquely flexible solo buss system, and a Midas Heritage-series microphone preamp, all made available at a per-channel price appreciably lower than any comparable device. These features have made DN1248 one of our most successful units worldwide, but still some customers were not satisfied. So, once again we have responded to market demand, hence the introduction of the new DN1248 Plus.

This unit takes all the operational and cost advantages of the original, and adds a duplicate set of inputs and outputs to the rear panel. This adds a further dimension of flexibility, and allows users to upgrade their existing systems with the minimum of re-wiring. Add in the regular KT 5-year international factory warranty, and you have a unit that exceeds the expectations of even the most demanding users.

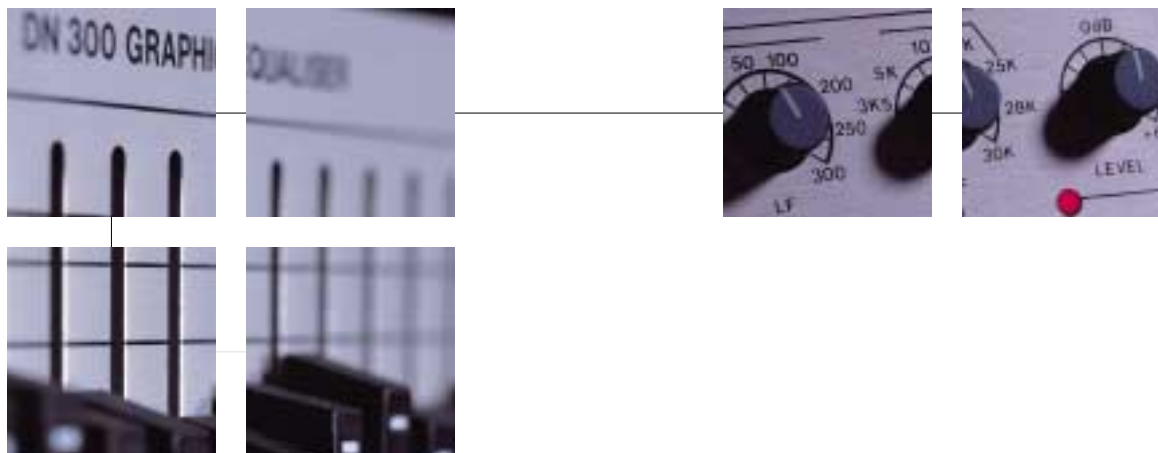


DN360 graphic equaliser

instant access, total reliability, and the greatest sounding analogue EQ

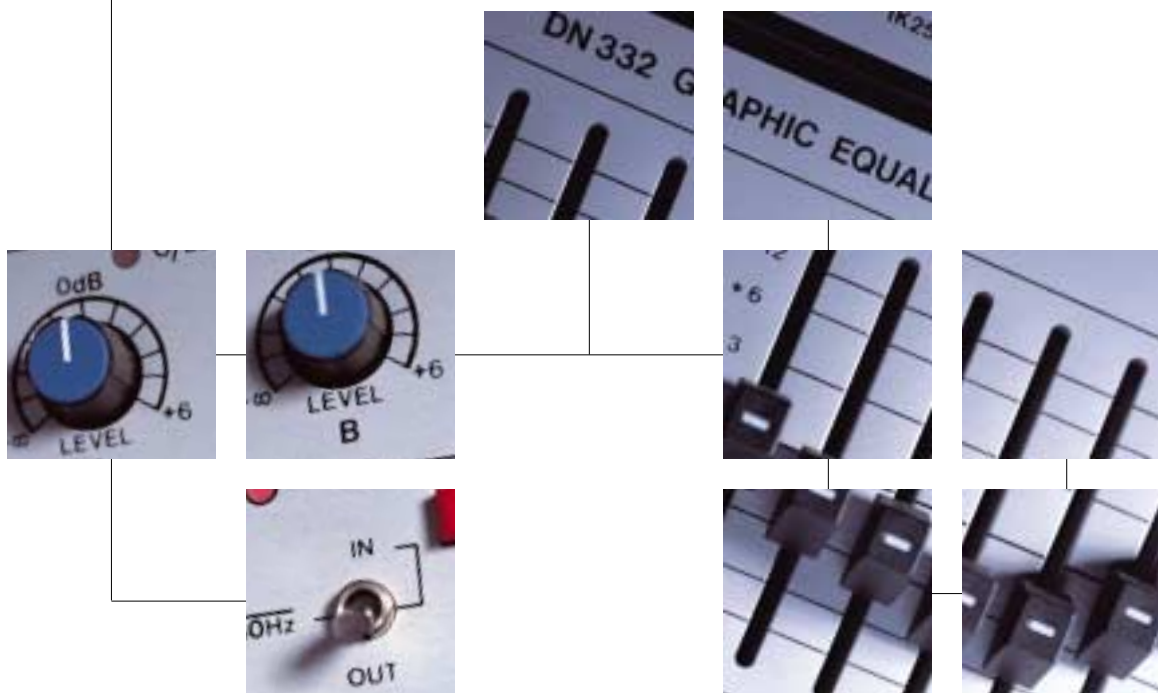


Now approaching some 16 years in continuous production, the DN360 dual graphic EQ has achieved ubiquity in professional audio circles. With nearly 30,000 units in the field worldwide, and the lowest failure rate of any comparable product, the DN360 even today remains the dual graphic EQ of choice in most instances. Why is it still so popular, especially in this menu-driven digital age? The answer is threefold: instant access, total reliability, and the great sound of the best analogue EQ money can buy. One of the main contributors to DN360s audio performance is its variable 'Q' design, meaning that the 'Q' value of any fader becomes narrower as the fader approaches maximum cut or boost. So rather than a collection of unconnected cuts and boosts (as provided by a 'constant-Q' device) the DN360 user is rewarded with a flowing, musical response with any overall fader setting. This proprietary design also allows every fader to function correctly regardless of the relative position of its neighbours, another design fault inherent in 'constant-Q' units. Each channel also features an 18dB/octave high-pass filter set at 30Hz to eliminate subsonic 'rumble' if required, plus an EQ in/out switch and an overall 6dB / 12dB fader scale switch for normal or high fader resolution. A design classic, still made as only KT know how.



DN300/332 graphic equalisers

precision fader resolution

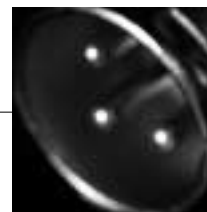


The DN300 and DN332 provide the same industry-standard audio performance, reliability and variable 'Q' topology as their close relative the legendary DN360, but in two alternative formats. The single 30-band DN300 additionally offers swept high and low pass filters with selectable 6dB or 12dB per octave on the low pass, allowing simple control of extreme high and low frequencies. An EQ in / out switch and overall level rotary control complete the front panel. The primary advantage of both the the DN300 and the DN332 over DN360, or any other 3RU dual graphic, is in the fader resolution, provided by the 45mm (rather than 30mm) travel oil-damped precision faders. DN332 packs two 16-band channels of graphic EQ into just 2RU. Each channel has its own overall level control plus an 18dB/octave high pass filter set at 30Hz for elimination of subsonic 'rumble'.



DN320/330 preset equaliser

set and forget EQ

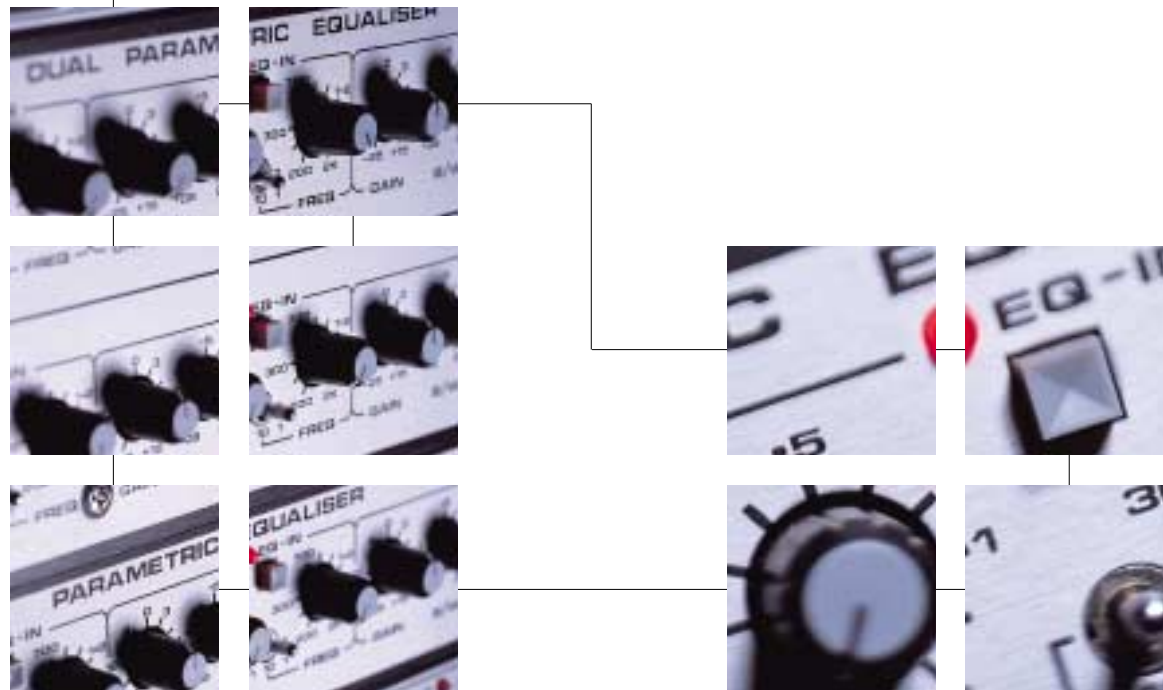


Designed specifically as 'set and forget' installation tools, the DN320 (dual 16-band EQ) and DN330 (single 30-band EQ) bring the unmatched audio quality and reliability of Klark Teknik to the installation contractor. These low-cost, high-performance units allow room or system EQ to be applied, then safely locked away behind security covers which are integral to the front panel. With the covers fitted, the untrained eye is unlikely to even recognise these as EQ units, so further reducing the possibility of unauthorised EQ access. Failsafe bypass relays are fitted ensuring that signal passes through the unit even when no power is applied, making these devices suitable for safety and evacuation announcement systems. The DN330 is fitted with swept high and low pass filters and EQ in / out switch, and the DN320 has a subsonic filter and EQ in / out switch on each channel. Both units can also be powered from 24v DC power, so making them ideal for installation in non-fixed applications such as pleasure boats.



DN405/410 parametric equalisers

the pinnacle of analogue parametric EQ

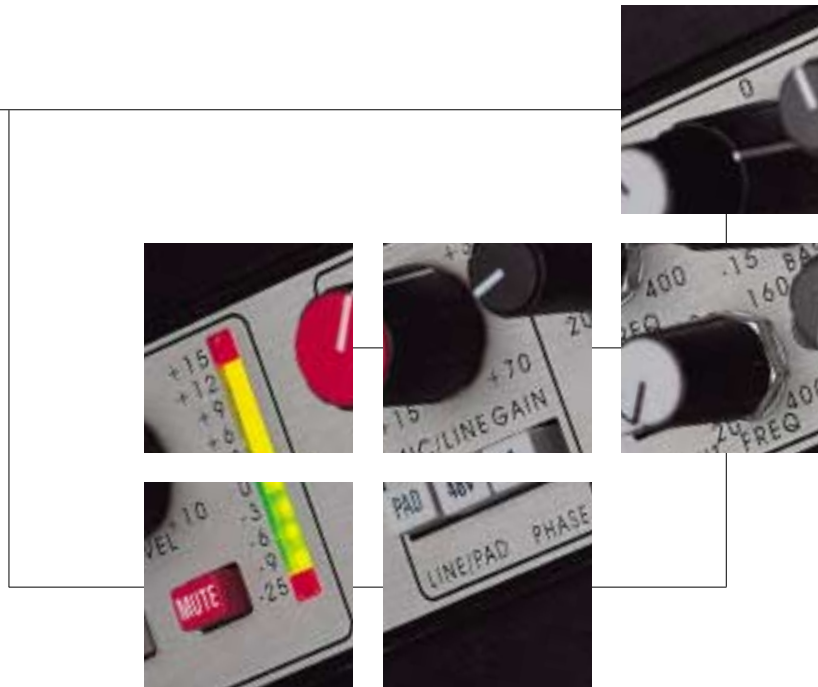


Klark Teknik's international reputation is founded on their EQ products, and one of the reasons for this is the 400-series units, DN405 and DN410. Built to stand years of hard use yet sensitive and accurate, they remain the premier choice of audio professionals who require the very best in great-sounding analogue parametric EQ. The DN410 is a 2RU dual channel device, whereas the DN405 is a 1RU single channel model. Each EQ channel features five bands of fully parametric EQ, with each band having an active range of 20Hz to 20kHz. This design makes it simple to accurately EQ out problem frequencies by dialling in a narrow-Q notch filter then sweeping it across the frequency range. It also means that EQ bands can be placed very close together or overlapped if required, unlike some competitive units which allocate specific frequency ranges to their units. Each EQ band has an in / out button, and the unit is also fitted with an overall in / out switch for easy comparison of EQ'd and non-EQ'd responses.

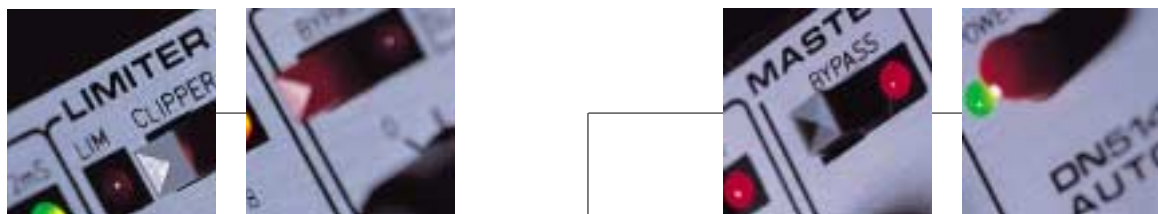


DN422M equaliser with mic preamp

intuitive set up and comparison



Numerous applications require top-notch audio performance without necessarily needing dozens of channels of large format mixing console. What's needed is a simple but very high quality rackmount front end, providing the best possible interface between source and the rest of system. This is where the dual channel DN422M comes in, featuring two complete Midas XL4 microphone preamp and EQ sections, each with swept hi-pass filters, 48v phantom power, mute, pad and phase reverse facilities. The preamp will accept any incoming level up to +31dBu (with pad inserted), and each channel is also fitted with front-panel switchable balanced insert points to allow connection of other units if required. Output metering and EQ in / out makes set up and comparison easy.



DN500 dynamic processor series

redefining functionality

The DN500 dual compressor provides two channels of full function compression, expansion, limiting and peak clipping in 1RU. A fully variable knee control allows continuous definition of compression style, and auto / manual modes provide either fast set-up or the necessary control for advanced compression effects. The DN500 has been a broadcast-industry standard for many years, due mainly to its extremely low noise performance, typically >2dB quieter than any comparable product. Expansion characteristics are continuously variable between hard gating and gentle expansion thanks to the flexible expander section, and both compressor and expander section are fitted with their own side chain inputs. The channels can be ganged together for stereo operation, and the peak clipper eliminates transient overload whilst tracking the limiter threshold for total protection.

The DN504 packs four fully-featured compressors into just 1RU, and boasts audio performance equal to its super-quiet stablemate the DN500. Fitted with hard / soft knee controls, auto and manual attack / release functions, and side chain inputs for each channel, the DN504 is especially suited for in-ear monitoring applications, especially since channels can be linked as stereo pairs if required. Comprehensive gain reduction and output level metering completes this extremely useful and space-saving professional tool.

The DN514 has assumed industry standard status as the multi-channel frequency-conscious gate unit of choice for live and recording applications. Providing the same ultimate audio performance as its 500-series siblings, the DN514 is extremely comprehensive but easy to set up. Two semi-automatic attack modes (calibrated for 'Normal' and 'Percussion') allied with a hold value that is automatically scaled to the release time, allow each gate to be precisely configured to its application. It is also fitted with the unique 'Sync' function, which locks all four gate release times, allowing easy synchronisation of harmony parts. Each gate also features a side chain input, and an additional key input to allow external triggering if required. LED indicators show gate status, and both Master (unit) and individual channel bypass switches aid set-up.





DN7453/7454 digital delay line

the natural genesis of digital delay technology



As the creators of the original digital delay line more than 20 years ago, Klark Teknik have a long history of designing and manufacturing innovative products for audio professionals. The new DN7000-series units represent not only the leading edge of digital delay technology, but also the natural genesis of product development.

Although these units (available in 1 input / 3 output and 2 input / 4 output formats) are very high specification delay units in their own right with an unweighted dynamic range of >112dB and up to 5.4s of total delay on every output, they continue Klark Teknik's policy of offering devices that provide solutions to more than just one audio problem at a time.

Every input features seven configurable EQ bands, all of which can be fully parametric, hi/lo pass or hi/lo shelving. Every output features six EQ bands, configurable in the same way. Additionally, every output features a full function compressor / limiter, and full PC remote control is available via free proprietary software.

What this adds up to is a versatile 'audio toolbox'; capable of condensing the functions of numerous units into one, and of course providing substantial cost savings in the process.



DN6000 audio analyser

unique analysis functionality

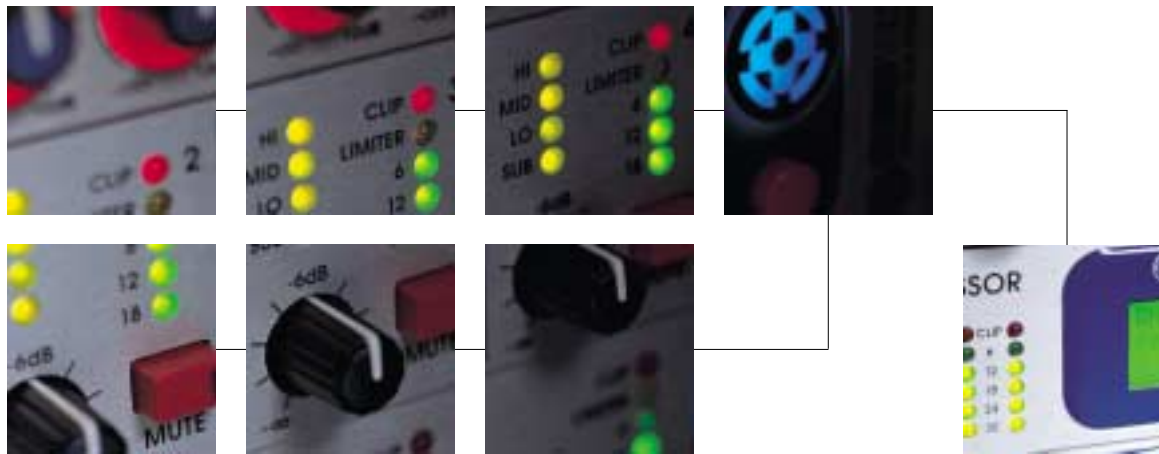


The ability to monitor and analyse audio systems, regardless of their application, remains one of the most important issues facing engineers. The DN6000 Audio Analyser continues Klark Teknik's long tradition of providing audio professionals with the tools they need in the field, with a unique feature set that provides every important analysis function in one roadworthy device.

Current SPL is constantly shown on a large red LED display, and measurements may be taken unweighted or with A or C weighting, in 1/3rd or 1/6th octave analysis modes, and shown in either peak or average responses. A high-quality measurement microphone is supplied with every (individually calibrated) DN6000, for which a front panel microphone input is fitted. The unit is also provided with dual line level inputs for stereo 1/3 octave analysis, with sum and differences display options, to allow it to run 'in-line' with a system if required.

An internal signal generator with sine wave and band limited pink noise test signals is also supplied, with the additional capability to provide test signal burst and frequency sweeps with automatic data capture, thus providing numerous system-test options. A proprietary ribbon-cable interface allows connection to a Klark Teknik DN3600 for auto-EQ functions, allowing real-time room or system EQ adjustments as acoustic characteristics change.

Additional functions include RT60 (reverb decay time) measurement, as well as Leq (average SPL over a given period) and Let (SPL at a specific point). Test measurements can be taken over any period configurable between 25ms and 180hrs, and two separate banks of data storage are available, 32 locations for frequency analysis and 16 for time-related measurements. The ability to store, recall, compare and print this data plus any subsequent measurements taken thereon makes the DN6000 an invaluable tool for numerous applications.



DN9824 loudspeaker processor

unrivalled flexibility in system control

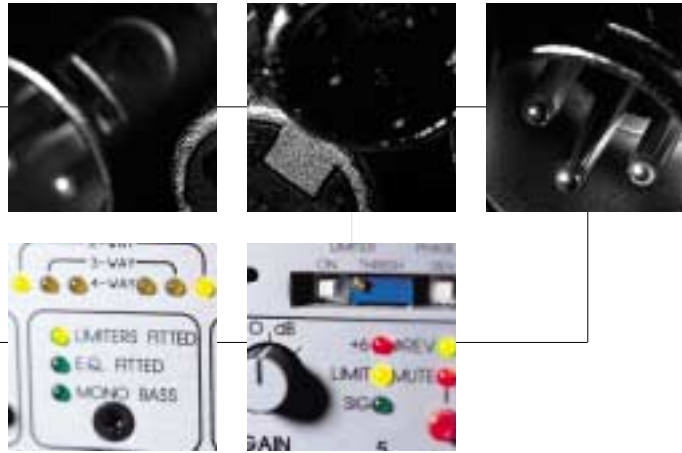


The rapid advancements in audio DSP (digital signal processing) technology in recent years have allowed lower-cost units to embody many of the functions and qualities of their top-spec counterparts. Perfectly complementing its stablemate DN9848 is the new Klark Teknik DN9824, bringing the great sound and reliability of the brand to the popular 2 input / 4 output format for the first time, and at a very competitive price.

The combination of 24-bit Motorola processing and KT's proprietary design develops a real-life dynamic range of >112dB. Comprehensive EQ sections (seven per input and six per output) can be configured between fully parametric, hi/lo shelving and hi/lo pass filtering operation, thus offering full system and room control. All inputs and outputs also feature up to 900mS of delay allowing system and individual component alignment, and all outputs have a full function compressor / limiter for loudspeaker protection.

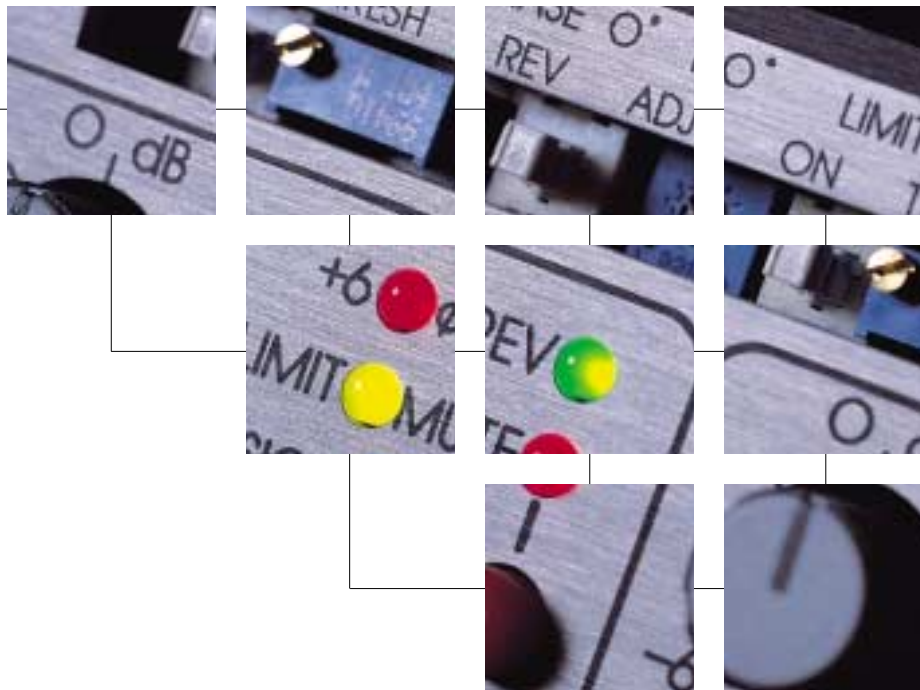
Front panel operation is simple and intuitive, whilst free proprietary PC software allows remote control and system configuration with online control of all unit parameters.





DN800 active crossover

unmatched analogue audio performance

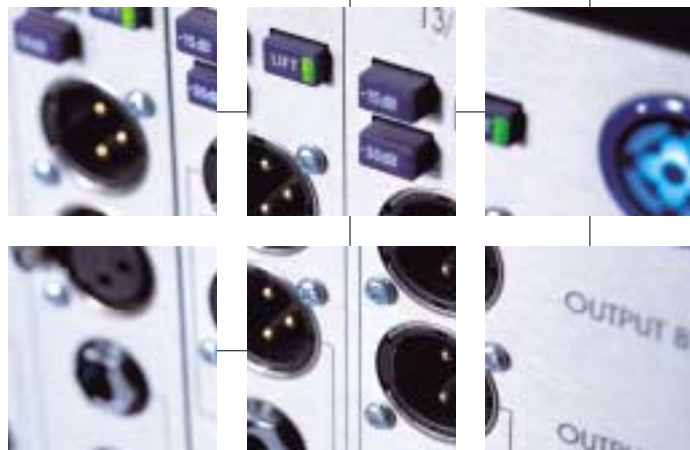
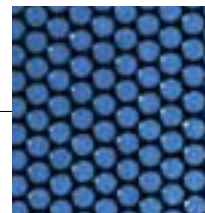


Whilst DN9848 is the first digital system controller to fit eight outputs and four inputs into one rackspace, the DN800 remains the only analogue device to offer this format. You might wonder where, in this digital world, an old-fashioned analogue crossover fits in? The fact remains that DN800 still offers some features that make it uniquely useful, and now at a price that makes it very attractive. It can be configured in a number of ways, but its most common application is to provide four mixes for bi-amped monitor systems. Its combination of rugged engineering, unmatched audio performance and ease of use makes it the perfect choice for permanently configured systems that do not require the myriad features provided by our digital controllers.



DN1414/LBB100 di devices

ultimate audio performance combined with superlative engineering



A good DI (direct-injection) device is essential in almost any system. Given that its primary function is to replace a microphone, the audio performance is critical. They also need to be extremely rugged, and also capable of providing flexible operation. The Klark Teknik LBB100 and DN1414 DI modules both meet these criteria, and more.

The stand-alone LBB100 has assumed industry standard status in a relatively short time. Built into an incredibly strong one-piece aluminium extrusion, with connectors out of harms way at either end, the unit will withstand the rigours of touring for many years. Powered by 48v 'phantom' power, LBB100 is equipped with a 30dB input pad and a 15dB output attenuator, providing compatibility for virtually any source to a console. Unusually it also features an XLR input, designed to allow direct connection via a regular microphone cable to the DI outputs commonly found on backline equipment. A fully transformer isolated XLR output and linked direct output on a jack complete the device.

The DN1414 multiple DI module brings all the advantages of the LBB100 to a rackmount format, packing no less than 14 discrete DI boxes into a single 3RU package. 10 channels are configured as per the LBB100, and the two remaining channels are arranged in pairs, featuring simple jack in / XLR out connection for use as single DI units or as stereo pairs. Customers can specify a factory-fitted dual power supply option if required, and the unit is also fitted as standard with a multipin retrofit kit. This allows a user to fit the multipin connector of their choice to a blank panel on the rear and then hard wire the outputs direct to it. All this makes the DN1414 a very flexible device which suits a number of applications in live production, in the studio and in broadcast.



Accessories and Factory options

all the extras you need



The Klark Teknik LBB485 is a dedicated, high-quality RS-232 to RS-485 converter. It allows connection of a computer to DN9848s and DN8000s to facilitate remote control using the Stardraw control software, and (in the case of DN9848s), manipulation of program data using the Excel-based Preset Editor.

Security Covers: for installation purposes, applicable KT units can be supplied with either smoked perspex or brushed aluminium security covers of the appropriate size.

Balancing Transformers: most KT units can be supplied with input and / or output balancing transformers if required.

Dual Power Supplies: the DN1248 Plus active splitter system and the DN1414 multiple DI module can be factory-fitted with dual power supplies if required. The suffix 'DP' is applied when this option is specified.

All-Transformer Balancing: the DN1248 Plus can also be factory-fitted with all outputs transformer balanced if required. The suffix 'AT' is applied if this option is specified. This unit can also be fitted with both the Dual PSU option and the All-Transformer option if required, in this case the suffix 'FM' is applied.

DN9848

Loudspeaker Processor

technical specification

Architect's and Engineer's Specification

The Loudspeaker Processor shall provide four input channels and eight output channels with configurable routing in a standard 1U 19" rack mount chassis.

Each input channel shall include: input gain control, delay up to one second; eight parametric EQ stages (+6dB boost, -18dB cut); a compressor.

Each output channel shall include: configurable routing; delay up to 300 milliseconds; one all-pass phase correction filters, low and high pass crossover filters with slopes of 6, 12, 18, 24, 36 and 48 dB per octave and options of Linkwitz-Riley, Butterworth and Bessel characteristics where appropriate; six parametric EQ sections with up to 12 dB of cut or boost (optionally two of these stages are configurable as low frequency and high frequency shelf filters respectively); a phase invert function; an output level control a compressor and a limiter.

All delay times shall be set in milliseconds and microseconds, or in distance units (metric and imperial) with a temperature correction facility.

Each Loudspeaker Processor shall meet or exceed the following performance specifications:

Frequency response	+/- 0.3dB (20Hz to 20kHz)
Distortion (THD+N)	<0.02% @ 1kHz, +8dBu
Dynamic Range	>114dB (20Hz to 20kHz unweighted)

All inputs and outputs shall be electronically balanced and use XLR connectors. All parameters shall be displayed and adjusted via an alphanumeric LCD display, three rotary encoders and individual menu buttons for each input and output channel.

The Loudspeaker Processor shall be provided with an RS-232 and RS-485 ports for remote control and software updates.

There shall be provision for six user memories and in addition 32 system memories and 99 factory presets with a security lock-out feature. There shall also be a security lock-out feature that is enabled when the unit is under remote control.

The unit shall be capable of operating from a 90 to 250V, 50 to 60Hz AC power source.

The Loudspeaker Processor shall be the Klark Teknik model DN9848 and no alternative option is available.



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Inputs	Four		
Type	Electronically balanced (Pin 2 Hot)		
Impedance (Ω)			
Balanced	20k		
Unbalanced	10k		
Common Mode Rejection	>80dB @ 1kHz		
Maximum level	+ 21dBu		
Audio Outputs	Eight		
Type	Electronically Balanced (Pin 2 Hot)		
Minimum load impedance	56 Ω /20nF		
Source impedance	56 Ω		
Maximum level	+ 21dBu into > 2k Ω		
Performance			
Frequency response	(20 Hz to 20 kHz) +/- 0.3dB with all filters and EQ flat	Parametric EQ 1/ Low shelf filter	Linkwitz-Riley (12 dB/Oct, 24 dB/Oct) Bessel (12dB/Oct, 18dB/Oct, 24dB/Oct, 36dB/Oct, 48 dB/Oct) Peaking Filter Boost: 0dB to +6dB in 0.1dB steps. frequency range 20Hz to 20kHz in 21steps per octave. Boost/cut: +12/-12dB in 0.1dB steps Parametric EQ Q: 3.0 to 0.08 Shelf slope: 6dB/Oct and 12dB/Oct
Distortion (THD+N)	<0.02% @ 1kHz, +8 dBu		
Dynamic range	(20 Hz to 20 kHz unweighted) >114dB	Parametric EQ 2-5	frequency range 20Hz to 20kHz in 21steps per octave. Boost/cut: +12/-12dB in 0.1dB steps Q: 3.0 to 0.08
Input Processing (per channel)			
Input gain	+12dB to -40dB in 0.1 dB steps plus Off	Polarity invert	Normal/invert
Parametric EQ 1-8	Frequency range: 20Hz to 20kHz in 21 steps per octave Boost/cut: +6/-18dB in 0.1dB steps Q: 3.0 to 0.08	Output gain	+12dB to -40dB in 0.5dB steps plus Off
Compressor	Threshold: +21dBu to - 10dBu in 0.1dB steps Attack: 40us to 100ms Insert: On/Off Release: 10ms to 2000ms Ratio: 1:1 to 5:1 Knee: Hard/Soft	Look-ahead limiter	Threshold: +21dBu to - 10dBu in 0.5dB steps Release: 10ms to 1000ms Knee: Hard/Soft
Delay	0 to 1 second 342.25 m or 1122' 10" at 20(C) in 20.8us steps	Compressor	Threshold: +21dBu to - 10dBu in 0.1dB steps Attack: 40us to 100ms Insert: On/Off Release: 10ms to 2000ms Ratio: 1:1 to 5:1 Knee: Hard/Soft
Output Processing (per channel)			
Routing	Route from inputs: A, B, C, D, A+B, C+D, A+B+C+D	Mute	On/off
Delay	0 to 300ms (102.68 m or 333' 10" at 20(C)) in 5.02 us steps	Terminations	
Phase correction filters	0° to 180° in 5° steps	Audio inputs/outputs	3-pin XLR
All pass filter	1st and 2nd order	RS-485 inputs/outputs	3-pin XLR
Low pass filter	frequency range 20Hz to 20kHz in 21 steps per octave. Supported configurations are:- Butterworth (6dB/Oct, 12dB/Oct, 18dB/Oct, 24 dB/Oct, 36dB/Oct, 48dB/Oct) Linkwitz-Riley (12dB/Oct, 24dB/Oct) Bessel (12dB/Oct, 18dB/Oct, 24 dB/Oct, 36dB/Oct, 48dB/Oct)	RS-232	8-pin Mini-DIN socket
High pass filter	frequency range 20Hz to 20kHz in 21steps per octave. Supported configurations are:- 12dB/Oct Peaking 24dB/Oct Peaking Butterworth (6dB/Oct, 12dB/Oct, 18dB/Oct, 24dB/Oct, 36dB/Oct, 48dB/Oct)	Power	IEC
		Power Requirements	
		Voltage / Consumption	90 to 250V a.c @ 50/60Hz / < 75VA
		Dimensions	
		Height	44 mm (1.75 inch) - (1U)
		Width	483mm (19 inch)
		Depth	287mm (12 inch)
		Weight	
		Nett	4kg
		Shipping	6kg

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN3600

Programmable Graphic Equaliser

technical specification

Architect's and Engineer's Specification

The equaliser shall be a dual channel third-octave type, providing 12dB of boost and attenuation in 1/2dB steps at 30 ISO centre frequencies from 25Hz to 20kHz. The channels shall be adjustable separately, or may be linked for stereo operation.

The equaliser shall meet or exceed the following performance specification:

Distortion (THD+N)	<0.01% @ 1kHz, +4dBu
Frequency response	±0.5dB (20Hz to 20kHz)
Noise	<-95dB (20Hz to 20kHz)
Maximum output level into 600Ω	>21dBu

Each channel shall also incorporate 12dB/Octave low and high pass filters sweepable in third octave steps from 1.6kHz to 30kHz and 400Hz to 20Hz respectively, and two one-twelfth octave tuneable notch filters.

The equaliser shall use the largest possible LCD display in a two rack-space unit and shall be able to show virtual fader positions and a combined actual curve composed of fader positions, sweep filters and notches.

Frequency band selection shall be achieved via 30 individual filter buttons and adjustment via a rotary level control.

The unit will be able to store 66 equalisation setups and address 64 slave devices via a Pro MIDI interface.

The unit shall have the capability of interfacing with the Klark Teknik DN6000 Spectrum Analyser for auto-equalising functions.

All audio connections shall be via XLR style connectors. Inputs and outputs shall be electronically balanced as standard, with the option of isolation transformers. The unit shall have a fail-safe relay bypass facility and be capable of operating from a 90V to 250V 50/60Hz AC power source.

The equaliser shall be the Klark-Teknik DN3600, and no alternative specification option is available.

Inputs	Two
Type	Electronically balanced (pin 2 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k
Max level	+22dBu

Outputs	Two
Type	Electronically balanced (pin 2 hot)
Min. load impedance	600Ω
Source impedance	50Ω
Max. level	+22dB into 2kΩ

Performance	
Frequency response	(20Hz to 20kHz)
Eq in (flat)	±0.5dB
Eq out	±0.5dB
Distortion (THD+N)	<0.01% @ 1kHz, +4dBu
Equivalent input noise	(20Hz to 20kHz unweighted)
Eq in (flat)	<-95dBu
Overload indicator	+19dBu
Gain	Mute, -18 to +6dB

Filters	
Type	MELT**
Centre Frequencies	2x30, to ISO 266:1997 25Hz to 20kHz, 1/3 Octave
Tolerance	±5%
Maximum Boost/Cut	12dB
Step size	1/2dB
High pass filter slope	12dB/Octave 20Hz-400Hz
Step size	1/3 Octave
Low pass filter slope	12dB/Octave 30kHz-1.6kHz
Step size	1/3 Octave
Notch filters	Two per channel Variable Q
Maximum Cut	12dB
Step size	1dB
Frequency range	25Hz to 20kHz
Step size	1/12 Octave

Terminators	
Inputs	3 pin XLR
Outputs	3 pin XLR
Pro-MIDI	3 pin XLR
Power	IEC

Power requirements	
Voltage	90 to 250V @ 50/60Hz AC
Consumption	<53VA

Dimensions	
Height	88mm (3.5 inch) - (2U)
Width	482mm (19 inch)
Depth	306mm (12.25 inch)

Weight	
Net	7kg
Shipping	8kg

Options	
Transformer balanced outputs	
Transformer balanced inputs*	
DN3601 Slave programmable equaliser	
DN3698 Remote control	
DN3603 Docking station	
WS01 Wireless comms system	



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*Input transformer balancing is non retrofittable and has to be specified with order.

**"MELT": Proprietary thick-film circuit.

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN3601

Slave Unit

technical specification

Architect's and Engineer's Specification

The equaliser shall be a dual channel third-octave type, providing 12dB of boost or attenuation in 0.5dB steps at 30 ISO centre frequencies from 25Hz to 20kHz. The channels shall be adjustable separately, or may be linked for stereo operation.

The equaliser shall meet or exceed the following performance specification:

Distortion (THD+N)	<0.01% @ 1kHz, +4dBu
Frequency response	±0.5dB (20Hz to 20kHz)
Input Noise	<-95dBu (20Hz to 20kHz)
Maximum output level into 600Ω	>21dBu

Each channel shall also incorporate 12dB/Octave low and high pass filters sweepable in third octave steps from 1.6kHz to 30kHz and 400Hz to 20Hz respectively, and two one-twelfth octave tuneable notch filters.

The equaliser shall respond only to remote control via a PRO MIDI Interface, there being no front panel controls. The unit will be able to store 66 equalisation set-ups in internal memory.

All audio connections shall be via XLR style connectors. Inputs and outputs shall be electronically balanced as standard, with the option of isolation transformers. The unit shall have a fail-safe relay bypass facility and be capable of operating from a 90 to 250V 50/60Hz AC power source.

The equaliser shall be the Klark-Teknik DN3601, and no alternative specification option is available.

Inputs	Two
Type	Electronically balanced (pin 2 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k
Max level	+22dBu

Outputs	Two
Type	Electronically balanced (pin 2 hot)
Min. load impedance	600Ω
Source impedance	50Ω
Max. level	+22dB into 2kΩ

Performance	
Frequency response	(20Hz to 20kHz)
Eq in (flat)	±0.5dB
Eq out	±0.5dB
Distortion (THD+N)	<0.01% @ 1kHz, +4dBu
Equivalent input noise	(20Hz to 20kHz unweighted)
Eq in (flat)	<-95dBu
Overload indicator	+19dBu
Gain	Mute, -18 to +6dB

Filters	
Type	MELT**
Centre Frequencies	2x30, to ISO 266:1997
	25Hz to 20kHz, 1/3 Octave
Tolerance	±5%
Maximum Boost/Cut	12dB
Step size	1/2dB
High pass filter slope	12dB/Octave 20Hz-400Hz
Step size	1/3 Octave
Low pass filter slope	12dB/Octave 30kHz-1.6kHz
Step size	1/3 Octave
Notch filters	Two per channel Variable Q
Maximum Cut	12dB
Step size	1dB
Frequency range	25Hz to 20kHz
Step size	1/12 Octave

Terminators	
Inputs	3 pin XLR
Outputs	3 pin XLR
Pro-MIDI	3 pin XLR
Power	IEC

Power requirements	
Voltage	90 to 250V @ 50/60Hz AC
Consumption	<53VA

Dimensions	
Height	88mm (3.5 inch) - (2U)
Width	482mm (19 inch)
Depth	306mm (12.25 inch)

Weight	
Net	7kg
Shipping	8kg

Options	
Transformer balanced outputs	
Transformer balanced inputs*	
DN3600 Master programmable equaliser	
DN3698 Remote control	
DN3603 Docking station	
WS01 Wireless comms system	



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*Input transformer balancing is non retrofittable and has to be specified with order.

**"MELT": Proprietary thick-film circuit.

Trade Descriptions Act. Due to the company policy of continuous improvement, Klark Teknik reserve the right to alter these specifications without notice.

DN3603

Docking Station for
DN3698 Hand Held Remote Controller

technical specification

Architect's and Engineer's Specification

The Docking Station should provide rack storage of the Hand Held Remote Controller. It should provide RS-232 to MIDI Conversion so that the Hand Held Remote Controller can be used with a single 5-core cable.

The Docking Station should charge the Hand Held Remote Controller batteries continuously. It should be able to archive the current settings of all connected equalisers and send and receive them as a MIDI system exclusive data dump.

The Docking Station should connect to a chain of up to 49 Klark Teknik Programmable Equaliser units via Pro-MIDI XLR input and output. The Docking Station should support a wireless link for full cable-free operation of the Hand Held Remote Controller. The Docking Station should have an internal voltage sensing switch mode power supply and operate from 90 to 250 volts AC, 50 to 60Hz.

The Docking Station is the Klark Teknik Docking Station and no alternative is available.

Connectors

Pro-MIDI In	3 pin XLR
Pro-MIDI Out	3 pin XLR
DN3698 connection	5 pin XLR
Power	IEC

Power supply

Output	18V DC, 3.1A
Input	90 to 250V AC 50/60 Hz
Power consumption	< 100VA

Dimensions

Width	482mm (19 inch)
Depth	303mm (12 inch)
Height	83mm (3.25 inch)

Weight

Nett	4.8kg
Shipping	7kg



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DN3698

Hand held Remote Controller

technical specification

Architect's and Engineer's Specification

The unit shall control up to 49 DN3600s by the use of a single portable control surface that will offer instant access to all DN3600 functions. The DN3600s will appear as individual mixes. Functions of the unit shall include mix selection, solo mode, curve draw, memory store and recall.

The unit will have a large 480x64 pixel backlit display with maximum space being given to the virtual faders. These can be accessed via dedicated frequency buttons or two thumb wheel encoders.

The unit will have two numeric keypads offering direct access to mixes and memories.

The unit shall offer Pro-MIDI connectors for direct linking to DN3600s. It will also offer a 5-pin XLR connector for connection to docking station.

The unit will contain high capacity rechargeable cells and a fast charger that can be powered either from the supplied external power supply or the docking station. The power supply and docking station shall work with any voltage in the range of 90 - 250 Volts AC, 50/60Hz. The unit shall work for 5 hours on a complete recharge.

The unit will have the option of a half-duplex radio module which will allow for true remote operation over a range of 100 metres.

The equaliser shall be the Klark-Teknik DN3698, and no alternative specification option is available.

Battery type

Battery life	5 hours
Recharge time	2 hours

Connectors

Pro MIDI In/Out	3 pin XLR
Docking station	5 pin XLR
Power supply	DC socket

Power Supply

Specs	18V 3.1A out 90-250V AC in
-------	-------------------------------

Mains Supply consumption	< 100VA
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Dimensions

Height	52mm (55mm incl. switches)
Width	353mm
Depth	215mm

Weight

Nett	3kg (including batteries)
Shipping	4kg



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WS01

Wireless Transceiver for DN3698 Hand Held Remote Controller and Docking Station

technical specification

Architect's and Engineer's Specification

The wireless system must provide radio communication between the Klark Teknik model DN3698 Hand Held Remote Controller and Klark Teknik Docking Station. Communication must be bi-directional and include full error checking of all data. Connection should be via 5-pin XLRs and the wireless system should require no separate power supply.

When used with the wireless system, the DN3698 should be able to individually address two individual channels, to allow the use of one DN3698 with two Docking Stations, or use of two DN3698 + Docking Station pairs in close proximity.

The wireless system is the Klark Teknik model WS01 Wireless Link and no alternative is specified.

Mechanical Connection	Sealed box 5 pin XLR
Electrical Frequency ($\pm 95\text{kHz}$) Radiated power (ERP) Spurious radiation @ 433.92MHz @ 418.00MHz Receiver sensitivity Data rate	Half duplex FM transceiver 418.000MHz or 433.920MHz -6dBu $\pm$ 3dBu Meets ETS 300-220 Meets MPT 1340 -107dBu 15,625kHz
Range Maximum in building Typical in free field	 30 metres 100 metres
Dimensions Width Depth Height	(per unit) 130mm (5.125 inch) 65mm (2.5 inch) 57mm (2.25 inch)
Weight Nett Shipping	(per pair) 0.5kg 1.5kg



DN1248 *Plus*

Mic Splitter

technical specification

Architect's and Engineer's Specification

The Mic Splitter shall provide 12 discrete audio channels in a standard 3U 19" rack mount chassis. Each channel shall have a microphone preamplifier, two transformer-isolated outputs, and two electronically balanced outputs. Optionally, all outputs may be transformer-isolated.

Each channel shall also provide separate +15 dB boost and -30 dB pad switches, switchable +48V phantom power, an earth lift function and a soloing facility.

The Mic Splitter shall have a headphone amp to allow the monitoring of soloed audio channels. The headphone amplifier shall have a headphone jack socket for the headphones, a rotary level control for the headphones output and a six-segment LED bargraph for monitoring the soloed signal level.

Each Mic Splitter shall meet or exceed the following performance specifications:

Electronically Balanced Outputs

Distortion (THD+N) < 0.01% @1 kHz, +4 dBu
Frequency response +0 / -0.5 dB (20 Hz to 20 kHz)

Transformer Balanced Outputs

Distortion (THD+N) < 0.04% @1 kHz, +4 dBu
Frequency response +0 / -1.0 dB (20 Hz to 20 kHz)

The audio connections for each of the twelve audio channels shall be via 3-pin XLR style connectors -

Inputs : two parallel-connected female XLR connectors (one on the front panel and the other on the rear panel).

Transformer Outputs: one male XLR connector on the front panel for each output.

Electronic Outputs: one output with one front and one rear panel male XLR connectors, one output with one rear panel male XLR connector only.

The rear panel input XLRs and output XLRs shall be mounted on three removable plates, and be grouped as one panel of input connectors and two panels of output connectors

All inputs and outputs shall be made available internally on PCB-mounted terminal strips to enable users to retrofit alternative rear panel connector configurations.

The unit shall be capable of operating from a 90 to 250V, 50 to 60 Hz AC power source. The unit shall have the option of dual redundant power supplies.

The Mic Splitter shall be the Klark Teknik model DN1248 plus and no alternative option is available.



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Inputs

two parallel-connected female XLR connectors (one on the front panel and the other on the rear panel)

Input impedance
CMRR
Equivalent input noise
Connectors

> 2k Ω
> -100 dB @ 100 Hz to 10 kHz
< -100 dBm @ unity gain
3 pin female XLR (external)
3 way terminal strip (internal)

Signal present level
Signal clip level

> -25dBu
> +21dBu

Outputs

Electronically balanced

one output with one front and one rear panel male XLR connectors, one output with one rear panel male XLR connector only

Source impedance
Min Load
Max level
Connectors

50 Ω
600 Ω
+21dBu @ 1kHz
3 pin male XLR (external)
3 way terminal strip (internal)

Transformer balanced & isolated

one male XLR connector on the front panel for each output

Source impedance
Min Load
Max level
Connectors

70 Ω
600 Ω (-3dB level loss into 200 Ω)
+18dBu @ 1kHz
3 pin male XLR (external)
3 way terminal strip (internal)

Performance

Electronically balanced outputs

Frequency response
Distortion (THD+N)

20Hz to 20kHz
+ 0 / - 0.5dB
< 0.01 % @1kHz, +4dB

Transformer balanced & isolated outputs

Frequency response
Distortion (THD+N)

20Hz to 20kHz
+ 0 / - 1.0dB
< 0.04 % @1kHz, +4dB

Terminations

Audio Inputs / Outputs
Power

3 pin XLR
IEC

Power Requirements

90 to 250V AC, 50/60Hz
< 75VA

Dimensions

Height
Width
Depth

132 mm (5.2 inches - (3U)
483 mm (19 inches)
300 mm (12 inches)

Weight

Nett
Shipping

7.4 kg
8.4 kg

Options

*Dual power supply
*All outputs transformer balanced

**All options are non retrofittable and must be specified with order.*

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN360

Dual Channel 30 band 1/3 Octave
Graphic Equaliser

technical specification

Architect's and Engineer's Specification

The equaliser shall provide 12dB* of attenuation and accentuation at 2x30 1/3 octave ISO centre frequencies from 25Hz-20kHz.

*Selectable to 6dB for increased fader resolution.

Each equaliser shall meet or exceed the following performance specifications:

Distortion (THD+N)	<0.01% @1kHz, +4dBu
Frequency response	±0.5dB(20Hz-20kHz)
Noise	<-90dBu (20Hz-20kHz unweighted)

**Maximum Output
level into 600Ω** +22dBu

Each equaliser shall allow for; subsonic frequency attenuation at 18dB/octave, equalisation section by-pass and shall be fail-safe, that is the unit shall return automatically to the by-pass condition in the event of power supply interruption. Each equaliser shall use centre detented slide potentiometers arranged to give a graphical display of frequency plotted against level.

A rear panel switch shall be provided to isolate the signal ground connections, quickly and safely, from the chassis ground.

All audio connections shall be via XLR style connectors and a tamperproof front panel cover shall be available to fit the unit. The unit shall be capable of operating from a 115/230V ± 12% 50/60Hz AC power source.

The equaliser shall be the Klark Teknik Dual Channel Model DN360, and no alternative specification option is available

Inputs	Two
Type	Electronically balanced (pin 3 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k

Outputs	Two
Type	Unbalanced (pin 3 hot)
Min. load impedance	600Ω
Source impedance	<60Ω
Max. level	+22dBu

Performance	
Frequency response (20Hz-20kHz)	
Eq out	±0.5dB
Eq in (flat)	±0.5dB
Distortion (THD+N)	<0.01% @ 1kHz, + 4dBu
Equivalent input noise	(20Hz-20kHz unweighted)
Eq in (flat)	<-90dBu
Channel separation	>75dB @ 1KHz
Overload indicator	+19dBu
Gain	-∞ to +6dB

Filters	
Type	MELT**
Centre frequencies	2x30, to ISO 266:1997 25Hz-20kHz 1/3 octave
Tolerance	±5%
Maximum boost/cut	±6/12dB
Subsonic filter	18dB/octave - 3dB @ 30Hz

Terminations	
Inputs	3 pin XLR
Outputs	3 pin XLR
Power	IEC

Power Requirements	
Voltage	110/120/220/240V 50/60Hz
Consumption	<15VA

Dimensions	
Height	133mm (5.25 inch) - (3U)
Width	482mm (19 inch)
Depth	205mm (8 inch)

Weight	
Nett	5.8kg
Shipping	7kg

Options	
Security Cover	
Transformer input* /output balancing	



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*Input transformer balancing is non retrofittable and has to be specified with order.

**"MELT": Proprietary thick-film circuit.

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN300

Single Channel 30 band 1/3 octave
Graphic Equaliser

technical specification

Architect's and Engineer's Specification

The equaliser shall provide 12dB of attenuation and accentuation at 30 1/3 octave ISO centre frequencies from 25Hz-20kHz.

The equaliser shall meet or exceed the following performance specifications:

Distortion (THD+N) <0.01% @1kHz, +18dBu
Frequency response ± 0.5 dB (20Hz-20kHz)
Noise <-94dBu (20Hz-20kHz unweighted)

Maximum output level into 600 Ω +22dBu

The equaliser shall have adjustable low & high cut 12dB/octave slope filters ranging from 15Hz-300Hz & 2.5kHz-30kHz and provide for selectable high cut filter slope 6/12dB.

The equaliser shall have an equalisation section by-pass facility and shall be fail-safe, that is the unit shall return automatically to the by-pass condition in the event of power supply interruption. The equaliser shall use centre detented slide potentiometers arranged to give a graphical display of frequency plotted against level.

A rear panel switch shall be provided to isolate the signal ground connections, quickly and safely, from the chassis ground.

All audio connections shall be via XLR style connectors and a tamperproof front panel cover shall be available to fit the unit. The unit shall be capable of operating from a 115/230V $\pm 12\%$ 50/60Hz AC power source.

The equaliser shall be the Klark Teknik Model DN300 and no alternative specification option is available.

Input	One
Type	Electronically balanced (pin 3 hot)
Impedance(Ω)	
Balanced	20k
Unbalanced	10k

Output	One
Type	Unbalanced (pin 3 hot)
Min. load impedance	600 Ω
Source impedance	<60 Ω
Max. level	+22dBu

Performance	
Frequency response (20Hz-20kHz)	
Eq out	± 0.5 dB
Eq in	± 0.5 dB
Distortion (THD+N)	<0.01% @ 1kHz, +18dBu
Equivalent input noise	(20Hz-20kHz unweighted)
Eq in	<-94dBu
Overload indicator	+19dBu
Gain	$-\infty$ to +6dB

Filters	
Type	MELT**
Centre frequencies	30, to ISO 266:1997 25Hz-20kHz 1/3 octave
Tolerance	$\pm 5\%$
Maximum boost/cut	± 12 dB
High Pass filter slope	15Hz-300Hz 12dB/octave
Low Pass filter slope	2k5Hz-30kHz 6/12dB/octave

Terminations	
Input	3 pin XLR
Output	3 pin XLR
Power	IEC

Power Requirements	
Voltage	110/120/220/240V 50/60Hz
Consumption	<15VA

Dimensions	
Height	89mm (3.5 inch) - (2U)
Width	482mm (19 inch)
Depth	205mm (8 inch)

Weight	
Nett	4kg
Shipping	6kg

Options	
	Security Cover Transformer input* / output balancing



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*Input transformer balancing is non retrofittable and has to be specified with order.

**"MELT": Proprietary thick-film circuit.

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN332

Dual Channel 16 band 2/3 Octave
Graphic Equaliser

technical specification

Architect's and Engineer's Specification

The equaliser shall provide 12dB of attenuation and accentuation at 2x16 2/3 octave ISO centre frequencies from 20Hz-20kHz.

Each equaliser shall meet or exceed the following performance specifications:

Distortion (THD+N) <0.01% @ 1kHz, +4dBu
Frequency response ±0.5dB (20Hz-20kHz)
Noise <-90dBu (20Hz-20kHz unweighted)

Maximum output level into 600Ω +22dBu

Each equaliser shall allow for subsonic frequency attenuation at 18dB/octave and have an equalisation section by-pass facility. Each equaliser shall use centre detented slide potentiometers arranged to give a graphical display of frequency plotted against level.

A rear panel switch shall be provided to isolate the signal ground connections, quickly and safely, from the chassis ground.

All audio connections shall be via XLR style connectors and a tamperproof front panel cover shall be available to fit the unit. The unit shall be capable of operating from a 115/230V ± 12% 50/60Hz AC power source.

The equaliser shall be the Klark Teknik Dual Channel Model DN332, and no alternative specification option is available.

Inputs	Two
Type	Electronically balanced (pin 3 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k

Outputs	Two
Type	Unbalanced (pin 3 hot)
Min. load impedance	600Ω
Source impedance	<60Ω
Max. level	+22dBu

Performance

Frequency response (20Hz-20kHz)	
Eq out	±0.5dB
Eq in (flat)	±0.5dB
Distortion (THD+N)	<0.01% @ 1kHz, + 4dBu
Equivalent input noise	(20Hz-20kHz unweighted)
Eq in (flat)	<-90dBu
Channel separation	>75dB @ 1kHz
Overload indicator	+19dBu
Gain	-∞ to +6dB

Filters

Type	MELT**
Centre frequencies	2x16, to ISO 266:1997 20Hz-20kHz 2/3 octave
Tolerance	±5%
Maximum boost/cut	±12dB
Subsonic filter	18dB/octave - 3dB @ 30Hz

Terminations

Inputs	3 pin XLR
Outputs	3 pin XLR
Power	IEC

Power Requirements

Voltage	110/120/220/240V 50/60Hz
Consumption	<15VA

Dimensions

Height	89mm (3.5 inch) - (2U)
Width	482mm (19 inch)
Depth	205mm (8 inch)

Weight

Nett	4kg
Shipping	6kg

Options

Security Cover
Transformer input*/ output balancing



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**"MELT" Proprietary thick-film circuit.

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN320

Dual Channel 16 band Preset Equaliser

technical specification

Architect's and Engineer's Specification

The equaliser shall be a dual channel 2/3 octave type, providing 12dB of boost or attenuation at 16 ISO centre frequencies from 20Hz to 20kHz in a standard 1U 19" rack mount chassis.

Control shall be via rotary preset potentiometers inset into the front panel, so that they may be covered by a flush fitting anti tamper strip.

The equaliser shall have switchable 30Hz subsonic filters on each channel, with a roll off of 18dB/octave.

The equaliser shall meet or exceed the following specifications:

Distortion (THD+N)	<0.01% @ 1kHz, +4dBu
Frequency response	±0.5dB (20Hz to 20kHz)
Input Noise	<-88dBu (20Hz to 20kHz)
Maximum output level into 600Ω	+19dBu

The unit shall be capable of operation from 115/230 volt, 50/60 Hz AC mains or 24 volt DC power.

There shall be equalisation bypass switches and the unit shall return automatically to a bypass mode in the event of total power loss.

Inputs and outputs shall be electronically balanced. All audio connections shall be via 3-pin XLR type connectors.

The equaliser shall be the Klark-Teknik DN320, and no alternative specification option is available.

Inputs	Two
Type	Electronically balanced (pin 2 hot)
Impedance(Ω)	
Balanced	20k
Unbalanced	10k
Max. input level	+20dBu

Outputs	Two
Type	Electronically balanced (pin 2 hot)
Source impedance	50Ω
Min. load impedance	600Ω
Max. level	+20dBu with 2kΩ load

Performance	
Frequency response	(20Hz to 20kHz)
Eq in (flat)	±0.5dB
Eq out	±0.5dB
Distortion (THD+N)	<0.01% @1kHz, +4dBu
Equivalent input noise	(20Hz to 20kHz unweighted)
Eq in (flat)	<-88dBu
Gain	-6dB to +12dB

Filters	
Type	Proprietary "combining"
Centre frequencies	2x16, to ISO 266:1997
	20Hz to 20kHz 2/3 octave
Frequency tolerance	5%
Maximum Boost/Cut	±12dB
Subsonic filter	18dB/Octave, -3dB at 30Hz

Terminations	
Inputs	3 pin XLR
Outputs	3 pin XLR
AC power	IEC
DC power	4mm sockets

Power Requirements	
AC Voltage	115/230V ±12%, 50/60Hz
Consumption	<15VA

Dimensions	
Height	45mm (1.75 inch) - (1U)
Width	482mm (19 inch)
Depth	210mm (8.25 inch)

Weight	
Net	3.5kg
Shipping	4kg



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Trade Descriptions Act. Due to the company policy of continuous improvement, Klark Teknik reserve the right to alter these specifications without notice.

DN330

Single Channel 30 band Preset Equaliser

technical specification

Architect's and Engineer's Specification

The equaliser shall be a single channel 1/3 octave type, providing 12dB of boost or attenuation at 30 ISO centre frequencies from 25Hz to 20kHz in a standard 1U 19" rack mount chassis.

Control shall be via rotary preset potentiometers inset into the front panel.

The equaliser shall have adjustable low and high pass 12dB/octave slope filters ranging from 2k5Hz to 30kHz and 15Hz to 300Hz respectively.

The equaliser shall meet or exceed the following specifications:

Distortion (THD+N)	<0.01% @ 1kHz, +4dBu
Frequency response	±0.5dB (20Hz to 20kHz)
Input Noise	<-86dBu (20Hz to 20kHz)
Maximum output level into 600Ω	+19dBu

The unit shall be capable of operation from 115/230 volt, 50/60 Hz AC mains or 24 volt DC power.

There shall be an equalisation bypass switch and the unit shall return automatically to a bypass mode in the event of total power loss.

Input and output shall be electronically balanced. All audio connections shall be via 3-pin XLR type connectors.

The equaliser shall be the Klark-Teknik DN330, and no alternative specification option is available.

Inputs	One
Type	Electronically balanced (pin 2 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k
Max input level	+20dBu

Output	One
Type	Electronically balanced (pin 2 hot)
Source impedance	50Ω
Min. load impedance	600Ω
Max. level	+20dBu with 2kΩ load

Performance	
Frequency response	(20Hz to 20kHz)
EQ in (Flat)	±0.5dB
EQ out	±0.5dB
Distortion (THD+N)	<0.01% @1kHz, +4dBu
Equivalent input noise	(20Hz to 20kHz unweighted)
EQ in (Flat)	<-86dBu
Gain	-6dB to +12dB

Filters	
Type	Proprietary "combining"
Centre frequencies	30, to ISO 266:1997
	25Hz to 20kHz 1/3 octave
Frequency tolerance	5%
Maximum Boost/Cut	± 12dB
High pass filter	15Hz to 300Hz, 12dB/octave
Low pass filter	2k5Hz to 30kHz, 12dB/octave

Terminations	
Inputs	3 pin XLR
Outputs	3 pin XLR
AC power	IEC
DC power	4mm sockets

Power requirements	
AC Voltage	115/230V ±12%, 50/60Hz
Consumption	<15VA

Dimensions	
Height	45mm (1.75 inch) - (1U)
Width	482mm (19 inch)
Depth	210mm (8.25 inch)

Weight	
Net	3.5kg
Shipping	4kg



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DN405

Single Channel 5 band
Parametric Equaliser

technical specification

Architect's and Engineer's Specification

The equaliser shall provide five bands of fully parametric filters and separate tuneable high & low cut filters.

Each equaliser filter shall provide 25dB of attenuation and 15dB of accentuation at continuously variable frequencies ranging from 20Hz-20kHz and shall allow for bandwidth adjustment from 1/12 to 2 octaves.

Each equaliser shall meet or exceed the following performance specifications:

Distortion (THD+N)	<0.01% @ 1kHz, 4dBu
Frequency response	±0.5dBu (20Hz-20kHz)
Noise	<-94dBu (20Hz-20kHz unweighted)

Maximum output level 600Ω	+22dBu
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The equaliser shall have adjustable low & high cut 12dB/octave slope filters ranging from 15Hz-300Hz & 2.5kHz-30kHz.

Separate in/out switches shall be provided for each parametric filter section, and each complete equaliser channel.

The equaliser shall be fail-safe, that is the unit shall return automatically to the by-pass condition in the event of power supply interruption.

A rear panel switch shall be provided to isolate the signal ground connections, quickly and safely, from the chassis ground.

All audio connections shall be via XLR style connectors and a tamperproof front panel cover shall be available to fit the unit.

The unit shall be capable of operating from a 115/230V ±12% 50/60Hz AC power source.

The equaliser shall be the Klark Teknik Dual Channel Model DN410 and no alternative specification option is available.

Inputs	One
Type	Electronically balanced (pin 3 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k

Outputs	One
Type	Unbalanced (pin 3 hot)
Min. load impedance	600Ω
Source impedance	<60Ω
Max. level	+22dBu

Performance	
Frequency response	(20Hz-20kHz)
Eq in (Flat)	±0.5dB
Eq out	±0.5dB
Distortion (THD+N)	<0.01% @ 1kHz, +4dBu
Equivalent input noise	(20Hz-20kHz unweighted) <-94dBu
Channel separation	>75dB @ 1kHz
Gain	-∞ to +6dB
Overload indicator	+19dBu

Filters	
Type	Parametric (5)
Bandwidth	Variable from 1/12 ~ 2 octaves
Max. boost/cut	+15/-25dB
Frequency ranges	20Hz-200Hz/ 200Hz-2kHz/2kHz-20kHz
High Pass filter	15Hz-300Hz/12dB octave
Lower Pass filter	2k5Hz-30kHz/12dB octave

Terminations	
Input	3 pin XLR
Output	3 pin XLR
Power	IEC

Power Requirements	
Voltage	110/120/220/240V 50/60Hz
Consumption	<15VA

Dimensions	
Height	45mm (1.75 inch) - (1U)
Width	482mm (19 inch)
Depth	285mm (9.25 inch)

Weight	
Nett	4kg
Shipping	5kg

Options	
Security cover	
Transformer input* / output balancing	



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* Input transformer balancing is non retrofittable and has to be specified with order.

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN410

Dual Channel 5 band Parametric Equaliser

technical specification

Architect's and Engineer's Specification

The dual channel equaliser shall provide five bands of fully parametric filters and separate tuneable high & low cut filters. Each equaliser filter shall provide 25dB of attenuation and 15dB of accentuation at continuously variable frequencies ranging from 20Hz-20kHz and shall allow for bandwidth adjustment from 1/12 to 2 octaves.

The equaliser shall meet or exceed the following performance specifications:

Distortion (THD+N)	<0.01% @ 1kHz, 4dBu
Frequency response	±0.5dB (20Hz-20kHz)
Noise	<-94dBu (20Hz-20kHz unweighted)
Maximum output level into 600Ω	+22dBu

The equaliser shall have adjustable low & high cut 12dB/octave slope filters ranging from 15Hz-300Hz & 2.5kHz-30kHz. Stereo and mono operation of the unit shall be possible with all 10 filters available in mono mode.

Separate in/out switches shall be provided for each parametric filter section, and each complete equaliser channel.

The equaliser shall be fail-safe, that is the unit shall return automatically to the bypass condition in the event of power supply interruption.

A rear panel switch shall be provided to isolate the signal ground connections, quickly and safely, from the chassis ground.

All audio connections shall be via XLR style connectors and a tamperproof front panel cover shall be available to fit the unit.

The unit shall be capable of operating from a 115/230V ±12% 50/60Hz AC power source.

The equaliser shall be the Klark Teknik Model DN410 and no alternative specification option is available.

Inputs	Two
Type	Electronically balanced (pin 3 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k

Outputs	Two
Type	Unbalanced (pin 3 hot)
Min. load impedance	600Ω
Source impedance	<60Ω
Max. level	+22dBu

Performance	
Frequency response	(20Hz-20kHz)
Eq in (Flat)	±0.5dB
Eq out	±0.5dB
Distortion (THD+N)	<0.01% @ 1kHz, +4dBu
Equivalent input noise	(20Hz-20kHz unweighted)
	<-94dBu
Channel separation	>75dB @ 1kHz
Gain	-∞ to +6dB
Overload indicator	+19dBu

Filters	
Type	Parametric (2 x 5)
Bandwidth	Variable from 1/12 ~ 2 octaves
Max. boost/cut	+15/-25dB
Frequency ranges	20Hz-200Hz/ 200Hz-2kHz/2kHz-20kHz
High Pass filter	15Hz-300Hz/12dB octave
Lower Pass filter	2k5Hz-30kHz/12dB octave

Terminations	
Input	3 pin XLR
Output	3 pin XLR
Power	IEC

Power Requirements	
Voltage	110/120/220/240V 50/60Hz
Consumption	<15VA

Dimensions	
Height	89mm (3.5 inch) - (2U)
Width	482mm (19 inch)
Depth	235mm (9.25 inch)

Weight	
Nett	5kg
Shipping	6kg

Options	
Security cover	
Transformer input* / output balancing	



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* Input transformer balancing is non retrofittable and has to be specified with order.

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DN422M

Dual Channel EQ with Mic Preamp

technical specification

Architect's and Engineer's Specification

The equaliser/mic pre-amp shall provide for two channels of 4-band equalisation comprising of:- Bass, with selectable shelving/bell response continuously variable from 20Hz to 400Hz. Lo mid, continuously variable from 100Hz to 2KHz. Hi mid, continuously variable from 400Hz to 8KHz. Treble, with selectable shelving/bell response continuously variable from 1KHz to 20KHz.

Each equaliser filter shall provide 15dB of accentuation and attenuation and shall allow for bandwidth adjustment from 0.1 to 2 Octaves.

Each channel shall also include a high pass filter continuously variable from 20Hz to 400Hz, with a slope of 12dB/Octave and a mic input level control with switchable phase inversion, 48V phantom power and a 25dB pad. The gain of the of the input control shall be continuously variable from -10dB to +70dB.

Both channels shall also include a mute switch, switchable balanced insert send and returns, a 10 segment LED meter and an output gain continuously variable from -infinity to +10dB.

The equaliser/mic pre-amp shall meet or exceed the following specifications.

Distortion (THD+N)	<0.03% @ 1KHz (+40dB gain, 0dBu output)
Frequency Response	+0 to -1dB (20Hz to 20KHz)
Noise	-129dBu (Mic EIN ref.150Ω) <-90dBu (Line EIN ref.600Ω)
Maximum output	+21dBu

Channel inputs and outputs shall be via XLR style connectors, insert send and return connections via tt bantam jacks. The equaliser/mic pre-amp shall be 19" standard rack mountable and 1U high. The unit shall be capable of operating from a 115/230V 50/60Hz AC power source.

The equaliser/mic pre-amp shall be the Klark Teknik Model DN422M and no alternative specification option is available.

Inputs	Two
Type	Electronically balanced (pin 2 hot)
Impedance (Ω)	
Balanced	2K (3K with pad)
Insert	(balanced)20K
Max Level	+6dBu (+31dBu with pad)
Gain	+15dB to +70dB
Pad	-25dB

Outputs	
Type	Electronically balanced (pin 2 hot)
Min. Load impedance	600Ω
Source impedance	<50Ω
Max Level	+21dBu

Performance	
Frequency response	(20Hz to 20KHz)
Eq flat	+0 to -1dB
Distortion (THD+N)	<0.03% @ 1KHz (+40dB gain, 0dBu output)
Equivalent input noise (20Hz-20KHz unweighted)	
(Mic EIN ref. 150Ω)	-129dBu
(Line EIN ref. 600Ω)	<-90dBu
Metering	10 LED Peak reading

Filters	
Type	Hi pass, Treble, Hi Mid, Lo Mid, Bass. (x2)
Bandwidth	0.1 Octave to 2 Octaves
Max. Boost/cut	+15dB to -15dB
Frequency ranges	20Hz to 400Hz (Bass Bell/Shelving) 100Hz to 2KHz (Lo Mid) 400Hz to 8KHz (Hi Mid) 1KHz to 20KHz (Treble Bell/Shelving)
High Pass filter	20Hz to 400Hz @ 12dB/Octave

Terminations	
Input /Outputs	3 pin XLR
Inserts (Send/Return)	TT Bantam
Power	IEC

Power	
Mic Phantom Voltage	48V +/-5%
Max. Phantom Current	<10mA

Power Requirements	
Voltage	110/120/220/240V 50/60Hz
Consumption	<15VA

Dimensions	
Height	44mm (1.75 inch) - (1U)
Width	482mm (19 inch)
Depth	250mm (10 inch)

Weight	
Nett	3kg
Shipping	4kg

Options	
Transformer mic input*/output balancing	

*Input mic transformer is non-retrofitable and has to be specified with order.

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.



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DN500

Dual Compressor/Limiter Expander

technical specification

Architect's and Engineer's Specification

The compressor/limiter shall provide two complete channels of compression, expansion, peak limiting and peak clipping. The compressor section shall provide for adjustment of Threshold, Ratio, Knee, Attack and Release and have push button selection of auto or manual modes. The expander section shall provide for adjustment of Threshold, Ratio and Release and have push button selection of Auto or Fixed attack times. The limiter section shall provide for adjustment of Threshold and have push button selection of a Peak Clipper. An output gain control and level meter shall be provided. Gain reduction meters shall be provided for both compressor and expander sections.

The compressor/limiter shall meet or exceed the following specifications:

Distortion (THD+N)	<0.03% @1kHz, +4dBu
Frequency response	±0.5dB (20Hz-20kHz)
Noise	<-94dBu (20Hz-20kHz unweighted)
Compressor Attack time	50µs-20ms
Compressor Release time	60ms-2 secs
Maximum output level into 600Ω	+21dBu

Push button switches shall be provided to select compressor, expander and channel bypass and to link both channels for stereo operation. Side chain inputs shall be provided for both compressor and expander sections. Channel inputs and outputs shall be via XLR style connectors, external side chain inputs shall be via 1/4" jack. A tamperproof front panel cover shall be available to fit the unit. The compressor/limiter shall be 19" standard rack mountable and 1U high. The unit shall be capable of operating from a 115/230V 50/60Hz AC power source.

The compressor/limiter shall be the Klark Teknik Model DN500 and no alternative specification option is available.



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Audio Inputs	Two
Type	Electronically balanced (pin 3 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k

Side Chain Inputs	Two (Compressor) + Two (Expander)
Type	Electronically balanced (tip hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k

Audio Outputs	Two
Type	Unbalanced (pin 3 hot)
Min. Load impedance	600Ω
Source impedance	<60Ω
Max.level	+21dBu

Performance	
Frequency response	(20Hz-20kHz) ±0.5dB
Distortion (THD+N)	<0.03% @ 1kHz, +4dBu
Equivalent input noise	(20Hz-20kHz unweighted) <-94dBu

Compressor	
Threshold	-30dBu to +20dBu
Ratio	1:1 to 50:1
Knee	1dB (Hard) to 40dB (soft)
Envelope	Switchable auto (attack and release controls disabled) or manual
Attack (90% capture)	50µs to 20ms
Release (90% recovery)	60ms to 2 secs

Expander	
Threshold	-40dBu to +20dBu
Ratio	1:1 to 25:1
Attack	Switchable auto or fixed (2ms)
Release (90% recovery)	40ms to 2 secs
Output Gain	-10dB to +30dB

Limited/Clipper	
Threshold	0dBu to +20dBu

Terminations	
Audio inputs/outputs	3 pin XLR
Side-Chain inputs	Normalised 1/4 inch stereo jack
Power	IEC

Power Requirements	
Voltage	110/120/220/240V 50/60Hz
Consumption	<30VA

Dimensions	
Height	44.5mm (1.75 inch) - (1U)
Width	482mm (19 inch)
Depth	292mm (11.5 inch)

Weight	
Nett	5kg
Shipping	6kg

Options	
Security cover	
Transformer input* / output balancing	

*Input transformer balancing is non retrofittable and has to be specified with order.

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN504

Quad Compressor/Limiter

technical specification

Architect's and Engineer's Specification

The compressor/limiter shall provide four complete channels of compression. Each channel shall provide for adjustment of Threshold, Ratio, Attack and Release and have push button selection of auto or manual modes and hard or soft knee. An output gain control and level meter shall be provided. Gain reduction meters shall also be provided for each channel.

The compressor/limiter shall meet or exceed the following specifications:

Distortion (THD+N)	<0.03% @1kHz, +4dBu
Frequency response	±0.5dB (20Hz-20kHz)
Noise	<-94dBu (20Hz-20kHz unweighted)
Compressor Attack time	50µs-20ms
Compressor Release time	60ms-2 secs
Maximum output level into 600Ω	+21dBu

Push button switches shall be provided to select channel bypass and to link adjacent channels for stereo operation. Side chain inputs shall be provided for each compressor section. Channel inputs and outputs shall be via XLR style connectors, external side chain inputs shall be via 1/4" jack. A tamperproof front panel cover shall be available to fit the unit. The compressor/limiter shall be 19" standard rack mountable and 1U high. The unit shall be capable of operating from a 115/230V 50/60Hz AC power source.

The compressor/limiter shall be the Klark Teknik Model DN504 and no alternative specification option is available.

Audio Inputs	Four
Type	Electronically balanced (pin 3 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k

Side Chain Inputs	Four
Type	Electronically balanced (tip hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k

Audio Outputs	Four
Type	Unbalanced (pin 3 hot)
Min. Load impedance	600Ω
Source impedance	<60Ω
Max. Level	+21dBu

Performance	
Frequency response	(20Hz-20kHz) ±0.5dB
Distortion (THD+N)	<0.03% @ 1kHz, +4dBu
Equivalent input noise	(20Hz-20kHz unweighted) <-94dBu
Channel separation	>90dB @ 1kHz

Compressor	
Threshold	-30dBu to +20dBu
Ratio	1:1 to 50:1
Knee	Switchable 1dB (hard) / 40dB (soft)
Envelope	Switchable auto (attack and release controls disabled) or manual
Attack (90% capture)	50µs to 20ms
Release (90% recovery)	60ms to 2 secs
Output gain	-10dB to +30dB

Terminations	
Audio inputs/outputs	3 pin XLR
Side-chain inputs	Normalised 1/4 inch stereo jack
Power	IEC

Power Requirements	
Voltage	110/120/220/240V 50/60Hz
Consumption	<30VA

Dimensions	
Height	44.5mm (1.75 inch) - (1U)
Width	482mm (19 inch)
Depth	292mm (11.5 inch)

Weight	
Nett	5kg
Shipping	6kg

Options	
Security cover	
Transformer input* / output balancing	



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DN514

Quad Auto Gate

technical specification

Architect's and Engineer's Specification

The noise gate shall provide four channels of frequency-conscious gating with each channel having adjustable low and high cut 12dB/octave filters, variable from 20Hz-5kHz and 80Hz-20kHz, switchable into side chain or audio signal path.

The noise gate shall meet or exceed the following specifications:

Distortion (THD+N)	<0.03% @1kHz, +4dBu
Frequency response	±0.5dB (20Hz-20kHz)
Noise	<-100dBu gate closed (20Hz-20kHz unweighted) <-94dBu gate open (20Hz-20kHz unweighted)
Attack time	50µs-2ms
Hold time/Release time	40ms-2 secs
Maximum output level into 600Ω	+21dBu

A tamperproof front panel cover shall be available to fit the unit. The noise gate shall be 19" standard rack mountable and 1U high.

The unit shall be capable of operating from a 115/230V 50/60Hz AC power source.

The noise gate shall be the Klark Teknik Model DN514 and no alternative specification option is available.

Audio Inputs	Four
Type	Electronically balanced (pin 3 hot)
Impedance(Ω)	
Balanced	20k
Unbalanced	10k

Key Inputs	Four
Type	Electronically balanced (tip hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k

Audio Outputs	Four
Type	Unbalanced (pin 3 hot)
Min. Load impedance	600Ω
Source impedance	<60Ω
Max. level	+21dBu

Performance	
Frequency response	(20Hz-20kHz) ±0.5dB
Distortion (THD+N)	<0.03% @ 1kHz, +4dBu
Equivalent input noise	(20Hz-20kHz unweighted)
Gate open	<-94dBu
Gate closed	<-100dBu
Attack programme related, semi-automatic	50µs to 200µs "Perc" 500µs to 2ms "Norm"
Hold/Release	Variable 40ms to 2sec
Threshold	Variable -40dBu to +20dBu
Attenuation	>84dB Gate closed

Key Filters	
High pass filter	20Hz-5kHz/12dB octave
Low pass filter	80Hz-20kHz/12dB octave

Terminations	
Audio inputs/outputs	3 pin XLR
Key inputs	Normalised 1/4 inch stereo jack
Power	IEC

Power Requirements	
Voltage	110/120/220/240V 50/60Hz
Consumption	<30VA

Dimensions	
Height	44.5mm (1.75 inch) - (1U)
Width	482mm (19 inch)
Depth	292mm (11.5 inch)

Weight	
Nett	5kg
Shipping	6kg

Options	
Security cover	
Transformer input* / output balancing	



DN7453

User Configurable Digital Audio Delay Line
with EQ and Dynamics

technical specification

Architect's and Engineer's Specification

The delay line shall provide for one input and three outputs, housed in a standard 1U 19" rack mount chassis. It shall have a maximum total delay time of 5400ms at a full bandwidth of 20kHz. Delay times shall be displayed in units of time and distance and shall be adjustable to a resolution of 21 microseconds.

When displaying distance, a temperature compensation facility will allow the delay time to be automatically recalculated for a specified temperature.

The unit shall incorporate a master delay time on the input and individual delay times on each of the outputs.

Each input shall include seven bands of full parametric EQ which can be individually configured to be any of the following: -LOSHELF, HISHELF, HICUT, LOCUT, PEQ and can be individually BYPASSED. In addition, each output shall include six bands of full parametric EQ which can also be individually configured to be any of the following: -LOSHELF, HISHELF, HICUT, LOCUT, PEQ and can be individually BYPASSED.

Each output shall have individually controllable compressor and limiter functions.

The delay line shall meet, or exceed, the following specifications:

Frequency response +0/-0.5dB
(20Hz to 20kHz)
Distortion (THD+N) <0.01% @1kHz, +8 dBu

Dynamic Range >112dB
(20Hz to 20kHz unweighted)

Options for the various delay and equalisation parameters shall be presented on a liquid crystal display and shall be selectable by six front panel control buttons and shall be altered by a continuous rotary controller.

User memories shall be provided for setup storage. A security lock out system shall be available, including a user defined code number. Each input shall have a gain control and meter and each output shall have an attenuator control and meter, for system matching. Output levels can also be individually adjusted from within the software and levels recalled as part of the user memories.

A MIDI interface shall be provided as standard. The delay line shall also be capable of being controlled remotely by a PC via an RS-232 port.

All audio connections shall be via XLR style connectors. Inputs and outputs shall be electronically balanced and there shall be an option for input transformer isolation.

The unit shall be capable of operating from a 90V to 250V a.c., 50/60Hz, power source.

The delay line shall be the Klark Teknik DN7453 and no alternative option is available.



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Audio Inputs		Output Processing (per channel)	
Type	One	Delay	0 to 900 milliseconds in 21 us steps
Impedance (Ω)	Electronically Balanced (Pin 2 Hot)	Channel EQ 1-6	Parametric EQ Mode
Balanced	20 k		frequency range 20Hz to 20kHz in 21
Unbalanced	10 k		steps per octave
Maximum Level	+21dBu		Boost/cut: (12 dB in 1 dB steps
			Q: 0.4 to 20
Audio Outputs			Hi-Shelf/Lo Shelf Filter Modes
Type	Three		Boost/cut: (12 dB in 1 dB steps
Source impedance	Electronically Balanced (Pin 2 Hot)		Slope: -6dB/Oct, -12 dB/Oct
Maximum Level	>100Ω		Hi-Pass/Lo-Pass Filter Modes
			Q: 0.4 to 2.0 (-12dB/Oct only)
			Slope: -6dB/Oct, -12dB/Oct
Performance			
Frequency response	(20Hz to 20kHz)	Output gain	0 dB to -∞ under front panel control
	+0/-0.5 dB with all filters and EQ flat		
Distortion (THD+N)	<0.01% @ 1kHz, +8 dBu	Compressor	Threshold: +21dBu to -9dBu in 1.0dB
Dynamic Range	(20Hz to 20kHz unweighted)		steps
	>112 dB		Ratio: 1:1, 1.4:1, 2:1, 4:1, 8:1
			Attack: 0ms to 99 ms
			Release: 50ms to 999ms
Input Processing			
Input Gain	+6dB to - ∞,under front panel control	Limiter	Threshold: +21dBu to -9dBu in 1.0dB
			steps
Master EQ 1-7	Parametric EQ Mode		Release: 50ms to 999ms
	frequency range 20Hz to 20kHz in 21	Terminations	
	steps per octave	Audio inputs/outputs	3-pin XLR
	Boost/cut: (12 dB in 1 dB steps	MIDI	5-pin DIN
	Q: 0.4 to 20	RS-232	9-pin D-Type socket
	Hi-Shelf/Lo Shelf Filter Modes	Power	IEC
	Boost/cut: (12 dB in 1 dB steps		
	Q: 0.4 to 2.0 (-12dB/Oct only)	Power Requirements	
	Slope: -6dB/Oct, -12 dB/Oct	Voltage / Consumption	90 to 250V a.c @ 50/60Hz / 20watts
		Dimensions	
Delay	0 to 4500 milliseconds in 21 us steps	Height	44mm (1.75 inch)- (1U)
		Width	483mm (19 inch)
		Depth	374mm (14.72 inch)
		Weight	
		Nett	5kg
		Shipping	7kg

Options
Transformer input balancing (must be specified with order).

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN7454

User Configurable Digital Audio Delay Line
and EQ

technical specification

Architect's and Engineer's Specification

The delay line shall provide for two inputs and four outputs, housed in a standard 1U 19" rack mount chassis. It shall have a maximum total delay time of 5400ms at a full bandwidth of 20kHz. Delay times shall be displayed in units of time and distance and shall be adjustable to a resolution of 21 microseconds.

When displaying distance, a temperature compensation facility will allow the delay time to be automatically recalculated for a specified temperature.

The unit shall incorporate a master delay time on the input and individual delay times on each of the outputs.

Each input shall include seven bands of full parametric EQ which can be individually configured to be any of the following:- LOSHELF, HISHELF, HICUT, LOCUT, PEQ and can be individually BYPASSED. In addition, each output shall include six bands of full parametric EQ which can also be individually configured to be any of the following:- LOSHELF, HISHELF, HICUT, LOCUT, PEQ and can be individually BYPASSED.

Each output shall have individually controllable compressor and limiter functions.

The delay line shall meet, or exceed, the following specifications:

Frequency response	+0/-0.5dB (20Hz to 20kHz)
Distortion (THD+N)	<0.01% @1kHz, +8 dBu
Dynamic Range	>112 dB (20Hz to 20kHz unweighted)

Options for the various delay and equalisation parameters shall be presented on a liquid crystal display and shall be selectable by six front panel control buttons and shall be altered by a continuous rotary controller.

User memories shall be provided for setup storage. A security lock out system shall be available, including a user defined code number.

Each input shall have a gain control and meter and each output shall have an attenuator control and meter, for system matching. Output levels can also be individually adjusted from within the software and levels recalled as part of the user memories.

A MIDI interface shall be provided as standard. The delay line shall also be capable of being controlled remotely by a PC via an RS-232 port.

All audio connections shall be via XLR style connectors. Inputs and outputs shall be electronically balanced and there shall be an option for input transformer isolation.

The unit shall be capable of operating from a 90V to 250 V a.c., 50/60 Hz, power source.

The delay line shall be the Klark Teknik DN7454 and no alternative option is available.



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Audio Inputs	Two	Output Processing (per channel)	
Type	Electronically Balanced (Pin 2 Hot)	Delay	0 to 900 milliseconds in 21 us steps
Impedance (Ω)		Channel EQ 1-6	Parametric EQ Mode frequency range 20Hz to 20kHz in 21 steps per octave Boost/cut: (12 dB in 1 dB steps Q: 0.4 to 20 Hi-Shelf/Lo Shelf Filter Modes Boost/cut: (12 dB in 1 dB steps Slope: -6dB/Oct, -12 dB/Oct Hi-Pass/Lo-Pass Filter Modes Q: 0.4 to 2.0 (-12dB/Oct only) Slope: -6dB/Oct, -12 dB/Oct
Balanced	20 k		
Unbalanced	10 k		
Maximum Level	+21dBu		
Audio Outputs	Four		
Type	Electronically Balanced (Pin 2 Hot)		
Source impedance	>100 Ω	Output gain	0 dB to $-\infty$ under front panel control
Maximum Level	+21 dBu into > 2k Ω	Compressor steps	Threshold: +21dBu to -9dBu in 1.0dB Ratio: 1:1, 1.4:1, 2:1, 4:1, 8:1 Attack: 0ms to 99 ms Release: 50ms to 999ms
Performance			
Frequency response	(20Hz to 20kHz) +0/-0.5 dB with all filters and EQ flat <0.01% @ 1kHz, +8 dBu		
Distortion (THD+N)	(20Hz to 20kHz unweighted) >112 dB		
Dynamic Range			
Input Processing (per channel)			
Input Gain	+6dB to $-\infty$ under front panel control		
		Limiter steps	Threshold: +21dBu to -9dBu in 1.0dB Release: 50ms to 999ms
Master EQ 1-7	Parametric EQ Mode frequency range 20Hz to 20kHz in 21 steps per octave Boost/cut: (12dB in 1dB steps Q: 0.4 to 20 Hi-Shelf/Lo Shelf Filter Modes Boost/cut: (12dB in 1dB steps Slope: -6dB/Oct, -12dB/Oct Hi-Pass/Lo-Pass Filter Modes Q: 0.4 to 2.0 (-12dB/Oct only) Slope: -6dB/Oct, -12 dB/Oct		
		Terminations	
		Audio inputs/outputs	3-pin XLR
		MIDI	5-pin DIN
		RS-232	9-pin D-Type socket
		Power	IEC
		Power Requirements	
		Voltage / Consumption	90 to 250V a.c @ 50/60Hz / 20watts
		Dimensions	
		Height	44mm (1.75 inch) - (1U)
		Width	483mm (19 inch)
		Depth	374mm (14.72 inch)
		Weight	
		Nett	5kg
		Shipping	7kg
		Options	
		Transformer input balancing	(must be specified with order).
Delay	0 to 4500 milliseconds in 21 us steps		

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN6000

Audio Analyser

technical specification

Architect's and Engineer's Specification

The analyser shall conform to the Type 1 requirements of IEC 804: 1985 - Standard Specification for Integrating-averaging sound level meters. It shall be a standard 2U, 19" rack mounted unit, capable of frequency domain and time domain analysis of a single mic level or twin line level signals introduced via a front panel XLR microphone input socket equipped with 48 volt phantom power, or via twin rear panel XLR line input sockets respectively. The unit shall feature a large, backlit LCD graphic display area, multiple function switches and an LED numerical display that can be read from a distance. It shall be equipped with switchable A and C weighting filters.

The analyser shall have an integral signal generator, capable of sine wave, swept sine wave and gated, band limited pink noise generation via a rear panel XLR output.

In frequency analysis mode, the unit shall perform 1/3 octave and 1/6 octave real time spectrum analysis. The 1/3 octave bands shall range from 12.5 Hz to 31.5 kHz at intervals defined by ISO 266:1997. The user shall have control over display range, reference level and response time, and over a cursor to pick out any frequency band or the over all signal level for numerical read out on the LED display.

In time analysis mode, the unit shall be capable of RT60 (reverberation time) analysis at any 1/3 octave or 1 octave band; of up to 180 sequential Leq measurements of durations ranging from 1 second to 1 hour, of Let measurements over durations of 1 minute to 180 hours.

The unit shall be able to freeze the real time analysis and store to any of 48 non volatile memory locations - 32 for frequency analysis and 16 for time analysis. The analyser shall be equipped with a parallel printer port for creation of hard copies of any measurement both graphically and in tabular form. An RS-232 serial port shall also be provided to allow printing via an external computer. The analyser shall also be equipped with a data port for direct connection to Klark Teknik model DN3600 Programmable Graphic Equalisers for automatic equalisation purposes.

The unit shall be the Klark Teknik Model DN6000 and no alternative specification option is available.

Frequency Response	5Hz to 40kHz
Microphone Input	One, Differential Compatible with microphone sensitivities from 0.25mV/uBar to 1mV/uBar
Sensitivity	140dB SPL to 50dB SPL (with optional 6051 microphone)
Powering Connector	48V DC phantom power (nominal) XLR on front panel
Line Input	Two, Differential balanced or unbalanced
Sensitivity	+40dBu to -50dBu
Impedance	47k Ω
Connector	XLRs on rear panel
Pink Noise output	
Type	Digital pseudo-random white noise generator with pink noise filter
Frequency distribution	-3dB/Octave 20Hz to 20kHz ± 0.2 dB
Level	+4dBu, -10dBu, -30dBu
Impedance	50 Ω balanced
Connector	XLR on rear panel
Filters	
Attenuation accuracy	± 0.1 dB
'A'-weighting	Selectable to IEC 651 type 1 requirement
'C'-weighting	Selectable to IEC 651 type 1 requirement
Interfaces	DN3600, parallel printer, serial printer via external computer
Terminations	
Audio inputs/outputs	3 pin XLR
Mic	3 pin XLR
Printer Port	25 way D socket
Data Output	16 way IDC Latching Header (Male)
RS-232	9 way D socket
Power	IEC
Power requirements	
Voltage	100 to 240V, 50 to 60Hz
Consumption	< 40VA

Dimensions	
Height	89mm (3.5 inch) - (2U)
Width	482mm (19 inch)
Depth	302mm (11.8 inch)
Weight	
Nett	5.5kg
Shipping	9.5kg
6051 Microphone	(Optional)
Frequency Response	Flat to 15kHz
Sensitivity	0.5mV per uBar nominal @ 1kHz
Dynamic range	20 to 130dB SPL
Capsule	0.25 inch electret condenser
Type	Pressure - omnidirectional
Power required	14V minimum phantom power (compatible with 48V)



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DN9824

Loudspeaker Processor

technical specification

Architect's and Engineer's Specification

The Loudspeaker Processor shall provide two input channels and four output channels with configurable routing in a standard 1U 19" rack mount chassis.

Each input channel shall include: input gain control; five parametric EQ stages offering a ± 12 dB range for parametric, lo- and hi-shelf modes and 6dB/Oct and 12dB/Oct slopes for lo- and hi-pass filter modes; delay up to 900 milliseconds.

Each output channel shall include: configurable routing; delay up to 900 milliseconds; low and high pass crossover filters with slopes of 6, 12, 18, 24dB per octave and options of Linkwitz-Riley, Butterworth and Bessel characteristics where appropriate; four parametric EQ stages offering a ± 12 dB range for parametric, lo and hi shelf modes, 6dB/Oct and 12dB/Oct slopes for lo- and hi-pass filter modes and 1st and 2nd order responses for the all-pass filter mode; a phase invert function; an output level control; a compressor; a limiter.

All delay times shall be set in milliseconds and microseconds, or in distance units (metric and imperial) with a temperature correction facility.

Each Loudspeaker Processor shall meet or exceed the following performance specifications:

Frequency response	+0/-0.5dB (20 Hz to 20 kHz)
Distortion (THD+N)	<0.01% @ 1kHz, +8dBu
Dynamic Range:	>112dB (20Hz to 20kHz unweighted)

Options for the audio control parameters shall be presented on a liquid crystal display and shall be selectable by six front panel control buttons and shall be altered by a continuous rotary controller.

User memories shall be provided for setup storage. A security lock out system shall be available, including a user defined code number.

Each input shall have a gain control and meter and each output shall have an attenuator control and meter, for system matching. Output levels can also be individually adjusted from within the software and levels recalled as part of the user memories.

A MIDI interface shall be provided as standard. The delay line shall also be capable of being controlled remotely by a PC via an RS-232 port.

All audio connections shall be via XLR style connectors. Inputs and outputs shall be electronically balanced and there shall be an option for input transformer isolation.

The unit shall be capable of operating from a 90V to 250V a.c., 50/60Hz, power source.

The Loudspeaker Processor shall be the Klark Teknik DN9824 and no alternative option is available.



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Inputs	Four		Linkwitz-Riley (12dB/Oct, 24dB/Oct) Bessel (12dB/Oct, 18dB/Oct, 24dB/Oct) Peaking Filter Q: 0.5, 0.6, 0.7, 0.8, 1.0, 1.2, 1.5, 2.0.
Type	Electronically balanced (Pin 2 Hot)		
Impedance (Ω)			
Balanced	20k		
Unbalanced	10k		
Maximum level	+ 21dBu	Channel EQ 1-6	frequency range 20Hz to 20kHz in 21 steps per octave Parametric EQ Mode Boost/cut: (12dB in 1dB steps Q: 0.4 to 2.0 Hi-Shelf/Lo Shelf Filter Modes Boost/cut: (12dB in 1dB steps Slope: -6dB/Oct, -12dB/Oct Hi-Pass/Lo-Pass Filter Modes Q: 0.4 to 2.0 (-12dB/Oct only) Slope: -6dB/Oct, -12dB/Oct
Outputs	Four		
Type	Electronically Balanced (Pin 2 Hot)		
Source impedance	>100 Ω		
Maximum level	+21dBu into > 2k Ω		
Performance			
Frequency response	(20 Hz to 20 kHz) +0/- 0.5dB with all filters and EQ flat <0.01% @ 1kHz, +8 dBu 20Hz to 20kHz unweighted >112dB	Phase correction filters (x2)	All-Pass Mode Q: 0.4 to 2.0 Response: 1st Order, 2nd Order
Distortion (THD+N)		Phase invert	Normal/invert
Dynamic range		Output gain	0 dB to ∞ , under front panel control
Input Processing (per channel)		Compressor steps	Threshold: +21dBu to - 9dBu in 1.0dB steps Ratio: 1:1, 1.4:1, 2:1, 4:1, 8:1 Attack: 0ms to 99ms Release: 50ms to 999ms
Input gain	+6dB to ∞ , under front panel control	Limiter	Threshold: +21dBu to - 9dBu in 1.0dB steps Release: 50ms to 999ms
Master EQ 1-7	frequency range 20Hz to 20kHz in 21 steps per octave Parametric EQ Mode Boost/cut: (12 dB in 1 dB steps Q: 0.4 to 2.0 Hi-Shelf/Lo Shelf Filter Modes Boost/cut: (12 dB in 1 dB steps Slope: -6dB/Oct, -12 dB/Oct Hi-Pass/Lo-Pass Filter Modes Q: 0.4 to 2.0 (-12dB/Oct only) Slope: -6dB/Oct, -12 dB/Oct	Mute	On/Off
Delay	0 to 900 milliseconds (308.03 m or 1014' 1" at 20(C) in 21 us steps	Terminations	
Output Processing (per channel)		Audio inputs/outputs	3-pin XLR
Routing	Route from inputs: IN1, IN2, IN1+IN2	MIDI	5-pin DIN
Delay	0 to 900 milliseconds (308.03 m or 1014' 1" at 20(C) in 21us steps	RS-232	9-pin D-Type socket
Low pass filter	frequency range 20Hz to 20kHz in 21 steps per octave Supported configurations are:- 12dB/Oct Peaking Butterworth (6dB/Oct, 12dB/Oct, dB/Oct, 24dB/Oct) Linkwitz-Riley (12dB/Oct, 24dB/Oct) Bessel (12dB/Oct, 18dB/Oct, 24dB/Oct)	Power	IEC
High pass filter	frequency range 20Hz to 20kHz in 21 steps per octave Supported configurations are:- 12dB/Oct Peaking Butterworth (6dB/Oct, 12dB/Oct, 18dB/Oct, 24dB/Oct)	Power Requirements	Voltage / Consumption 90 to 250V a.c @ 50/60Hz / 20watts
		Dimensions	
		Height	44mm (1.75 inch) - (1U)
		Width	483mm (19 inch)
		Depth	374 mm (14.72 inch)
		Weight	
		Nett	5kg
		Shipping	7kg
		Options	Transformer input balancing (must be specified with order).

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

DN800

Active Crossover

technical specification

Architect's and Engineer's Specification

The DN800 electronic active crossover shall provide up to 6 crossover points/8 bands in one rack unit.

The crossover shall be configurable as 4-way stereo, 3-way stereo or 2-way 4 channel.

The crossover shall be able to provide any frequency, slope and response by the use of plug-in cards. Each frequency band shall have controls for mute, gain, phase invert and band-edge phase adjust.

The crossover shall meet or exceed the following performance specifications:

Distortion (THD+N) <0.01% @1kHz, +4dBu

Equivalent input noise < -95dBu (any output)
(20Hz to 20kHz unweighted)

High quality VCA limiters shall be available on plug-in cards. These shall have threshold controls available on the front panel. Fixed equalisation shall be available on plug-in cards to suit constant directivity horns etc.

The Unit shall incorporate a fixed 18dB/Oct Subsonic filter at 30Hz.

The crossover shall feature front panel LEDs to indicate signal present, limit and +6dB over-limit. Front panel controls apart from gain and mute shall be recessed and covered after initial setup by security plates. An overall tamper-proof cover shall be available.

All audio connections shall be via XLR style connectors. All inputs and outputs shall be electronically balanced. Input balancing transformers should be available as an option and must be internally fitted.

The unit shall be capable of operating from a 115/230V $\pm 10\%$ 50/60Hz AC power source.

The crossover shall be the Klark Teknik model DN800 and no alternative option is available.

Inputs	Four
Type	Electronically balanced (pin 2 hot)
Impedance (Ω)	
Balanced	20k
Unbalanced	10k
Outputs	Eight
Type	Electronically balanced (pin 2 hot)
Min. load impedance	600 Ω
Source impedance	<60 Ω
Max. Level	>+21dBu
Performance	
Distortion (THD+N)	<0.01% @ 1kHz, +4dB
Equivalent input Noise	(20Hz to 20kHz unweighted) <-95dBu (any output)
Nominal gain	0dB
Adjustable gain	± 6 dB on front panel control additional +12dB or -6dB on internal preset
Limiter threshold	-12dBu to +12dBu
Phase relationship	Continuously adjustable 0° to 180° between bands. Polarity switch provides additional 180°
Frequency division filters	Butterworth, Bessel, or Linkwitz-Riley 12, 18 or 24dB/Oct
Subsonic filter	18dB/Oct 30Hz
Power requirements	
Voltage	110/120/220/240V 50/60Hz AC
Consumption	<30VA
Terminations	
Audio inputs/Outputs	3 pin XLR
Power	IEC

Dimensions	
Height	44mm (1.75 inch) - (1U)
Width	482mm (19 inch)
Depth	285mm (11.2 inch)
Weight	
Nett	4kg
Shipping	5kg
Options	
Overall security cover	
System equalisation	
Transformer input balancing*	



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*Input balance transformers must be specified with order

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DN1414

DI module

technical specification

Architect's and Engineer's Specification

The Multiple DI Module shall provide 14 discrete audio channels in a standard 3U 19" rack mount chassis, each channel providing galvanic isolation and impedance matching for a variety of input signals.

Each channel shall also provide separate -30 dB pad and -15 dB attenuation switches, and an earth lift function.

Each Multiple DI Module shall meet or exceed the following performance specifications:

Distortion (THD+N) < 0.01% @1kHz, +4dB
Frequency response +0 / -1.0dB (20Hz to 20kHz)

The DI Module shall have ten single audio channels and two dual audio channels. All channels shall have a 1/4" TRS jack input which is capable of accepting balanced or unbalanced inputs. The ten single audio channels shall have a female 3-pin XLR connector in parallel with the jack socket. In use the XLR input shall present a 20k ohm input impedance and the 1/4" jack socket a nominal 1M ohm input impedance.

The ten single channels shall also have an unbalanced link output on a 1/4" TS jack socket.

All outputs shall be transformer isolated and shall use 3-pin male XLR connectors.

The unit shall be capable of operating from a 90 to 250V, 50 to 60Hz AC power source. The unit should have the option of dual redundant power supplies.

The DI Module shall be the Klark Teknik model DN1414 and no alternative option is available.

Audio Inputs

Type	Two per mono channel One per stereo channel Electronically balanced
Impedance	
TRS jack input	1M Ω
XLR input	20k Ω
Max level	+ 21dBu with no input attenuation
Attenuation	- 15dB
Pad	- 30dB

Audio Outputs

Type	Two per mono channel One per stereo channel Transformer isolated
Source impedance	50 Ω
Min Load	600 Ω (-3dB level loss into 200 Ω)
Max level	> + 21dBu @ 1kHz with load > 1k Ω

Link Output (Channels 1-10)

Source impedance	50 Ω
Min Load	600Ohm (-3dB level loss into 200Ohm)
Max level	> + 21dBu @ 1kHz with load > 1k Ω

Performance

Noise	-100dBu between 20Hz and 20kHz unweighted
Frequency response	20Hz to 20kHz +/- 0.5dB
Distortion (THD+N)	<0.01% @ 1kHz, +4dBu output

Terminations

Audio Inputs	3 pin XLR & 1/4" TRS jacks
Audio Outputs	3 pin XLR
Power	IEC

Power Requirements

90 to 250V a.c @ 50/60Hz @ < 75 VAs

Dimensions

Height	132 mm (5.2 inches) - (3U)
Width	483 mm (19 inches)
Depth	300 mm (12 inches)

Weight

Nett	8kg
Shipping	9kg

Options

*Dual power supply

**All options are non retrofittable and must be specified with order.*

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LBB100

Active DI

technical specification

Architect's and Engineer's Specification

The unit shall provide transformer isolation, impedance matching and attenuation for a variety of signals - from power amplifier outputs to high impedance transducers - into a low impedance balanced input. The unit shall be able to accept a maximum input level of at least 42dBu (100V RMS) provide attenuation switchable from 0 to 45dB in 15dB steps and output the signal into a balanced 600Ω load.

Input connectors shall include two quarter inch jack sockets and one 3-pin XLR socket, all linked. Input impedance shall be 1MΩ.

The output shall be active and balanced, with a source impedance of 150Ω, capable of driving a 10dBu signal into a 1kΩ load. The output connector shall be a 3-pin XLR socket.

An earth link switch shall be provided to connect input and output grounds when required.

All controls and connections shall be recessed for physical protection.

The unit shall obtain power from a 48V phantom supply.

The unit shall achieve or exceed the following specifications:

Output noise	-100dBu, 20Hz to 20kHz unweighted, with input terminated by 10kΩ resistor.
Distortion (THD+N)	0.01% @ 1kHz, +4dBu output
Frequency response	±1dB 20Hz to 20kHz
Power consumption	<10mA

The Unit shall be the Klark Teknik model LBB100 and no alternative option is available.

Input	
Type	Transformer isolated, balanced or unbalanced
Impedance	1MΩ nominal, balanced or unbalanced
Connectors	2 1/4 inch jacks and 3-pin XLR linked in parallel
Max. level	42dBu (100V RMS)
Attenuator	30dB, switchable

Output	
Type	Active balanced
Impedance	150Ω
Connector	3-pin XLR
Max. level	10dBu with load>1kΩ
Min. Load	600Ω

Performance	
Noise	-100dBu, 20Hz to 20kHz unweighted, with input terminated by 10k resistor
Frequency response	±1dB 20Hz - 20kHz
Distortion (THD+N)	<0.01% @ 1kHz, +4dBu output

Power Requirements	
Voltage	48V Phantom ± 10%
Current consumption	10mA

Dimensions	
Length	135mm (5.3 inch)
Width	76mm (2.99 inch)
Height	51mm (2.00 inch)

Weight	600g
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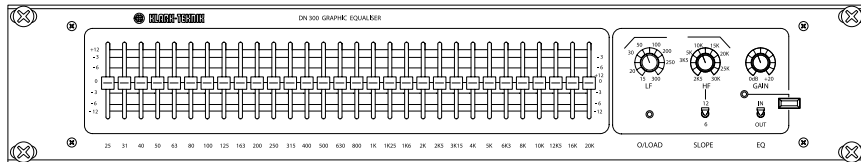


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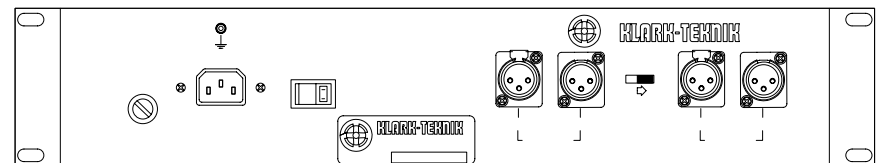
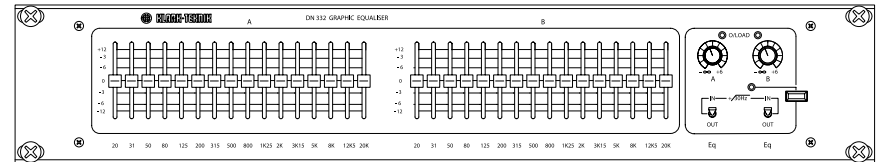
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Schematic Diagrams these diagrams are for pictorial reference only

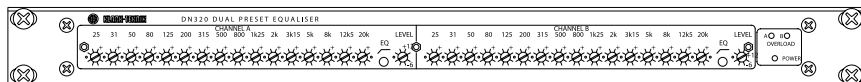
DN300 graphic equaliser



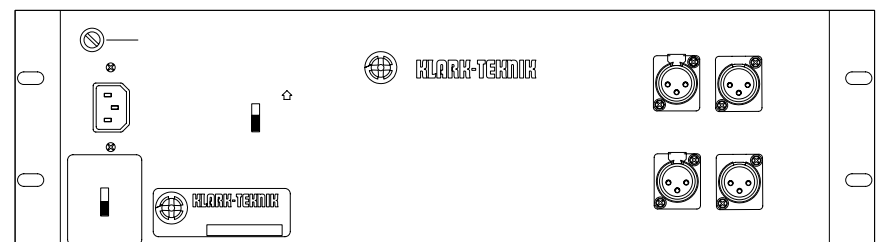
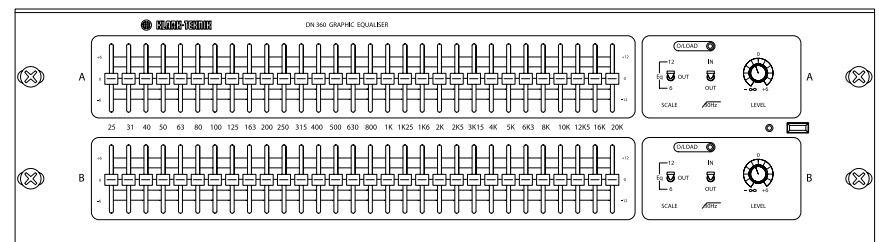
DN332 graphic equaliser



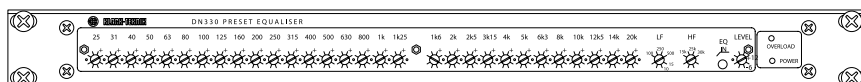
DN320 preset equaliser



DN360 graphic equaliser

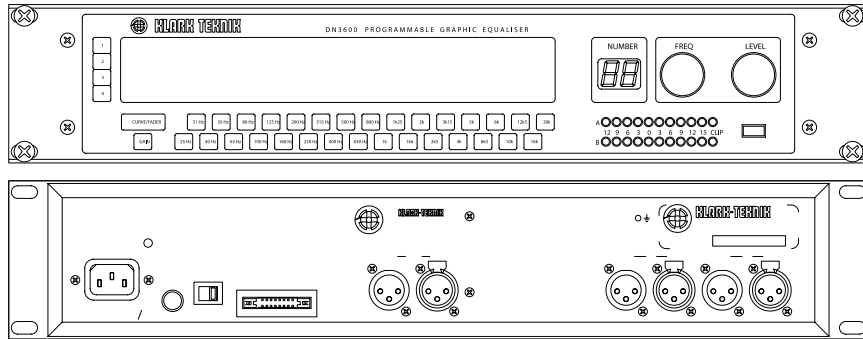


DN330 preset equaliser

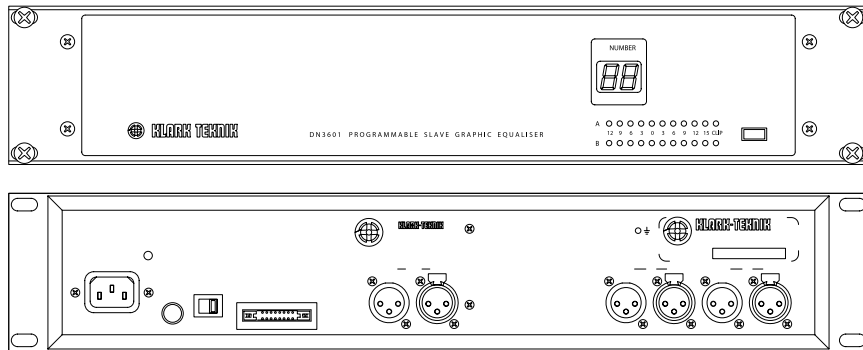


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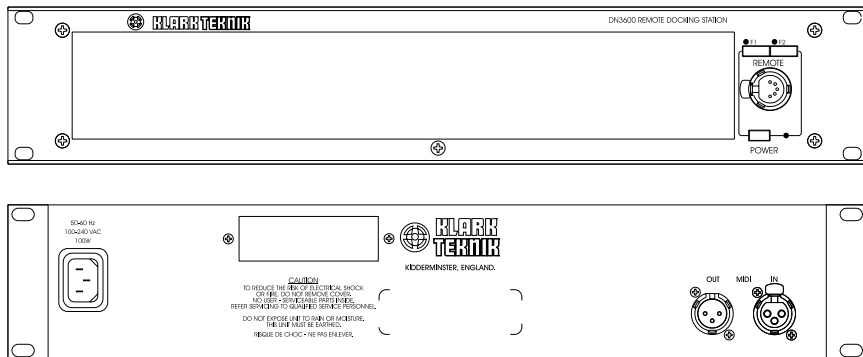
DN3600 programmable graphic equaliser



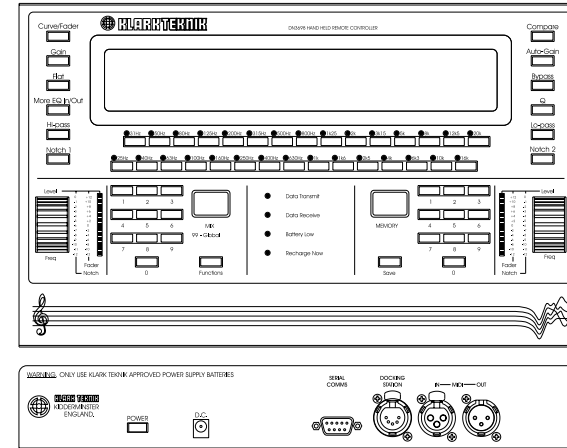
DN3601 programmable graphic equaliser



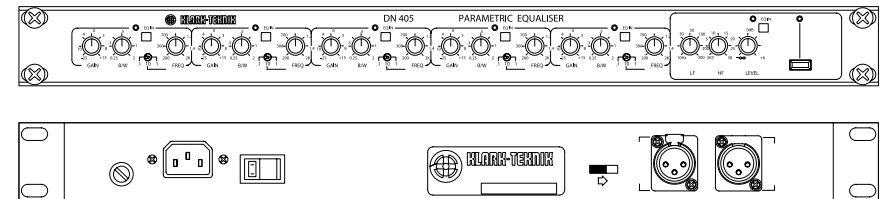
DN3603 docking station



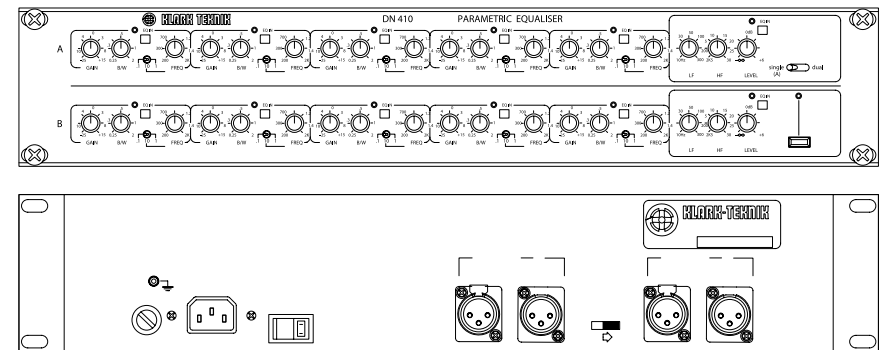
DN3698 remote controller



DN405 parametric equaliser

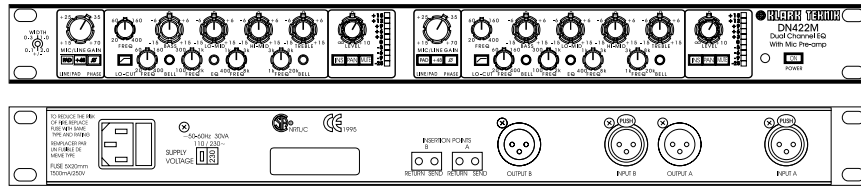


DN410 parametric equaliser

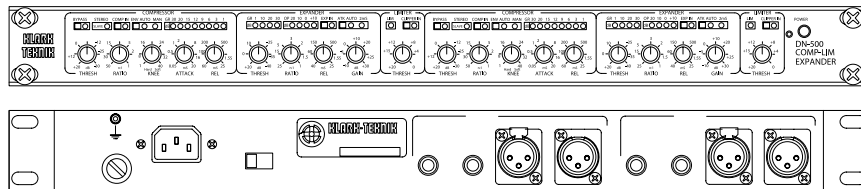


Schematic Diagrams these diagrams are for pictorial reference only

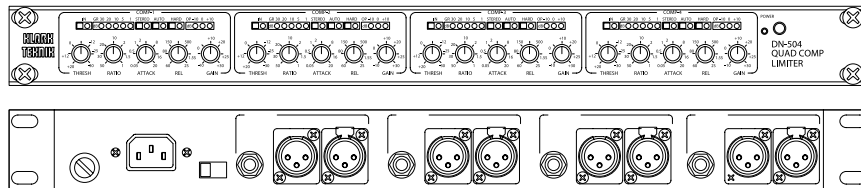
DN422m equaliser with mic preamp



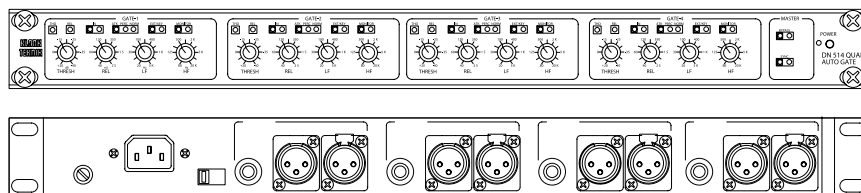
DN500 dynamic processor



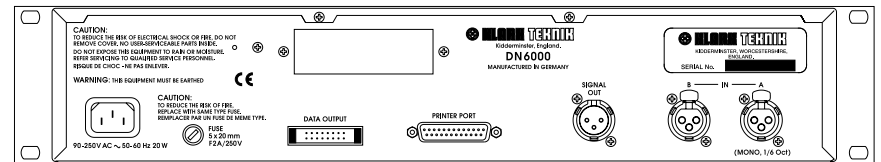
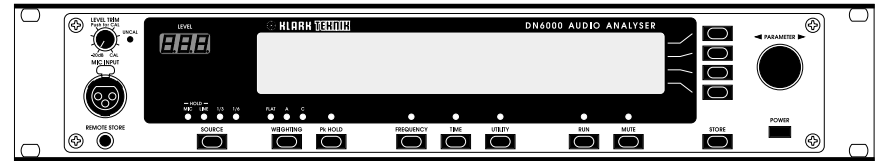
DN504 dynamic processor



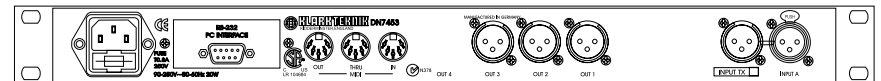
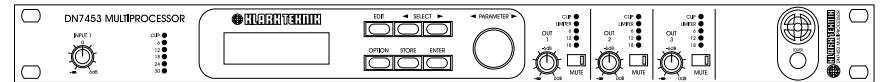
DN514 dynamic processor



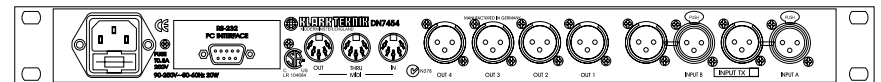
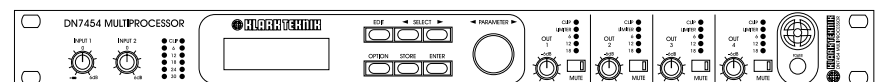
DN6000 audio analyser



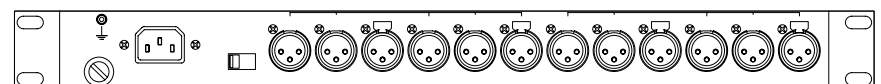
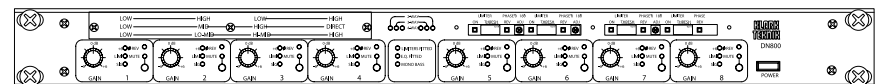
DN7453 digital delay line & multiprocessor



DN7454 digital delay line & multiprocessor

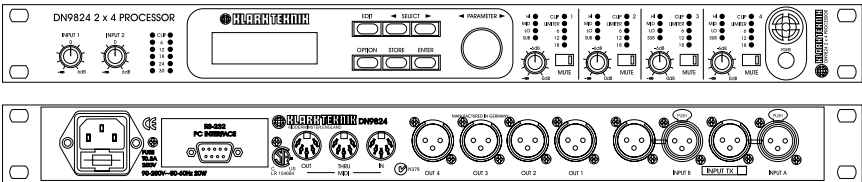


DN800 active crossover

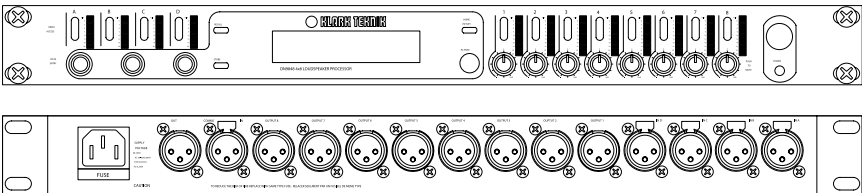


Schematic Diagrams these diagrams are for pictorial reference only

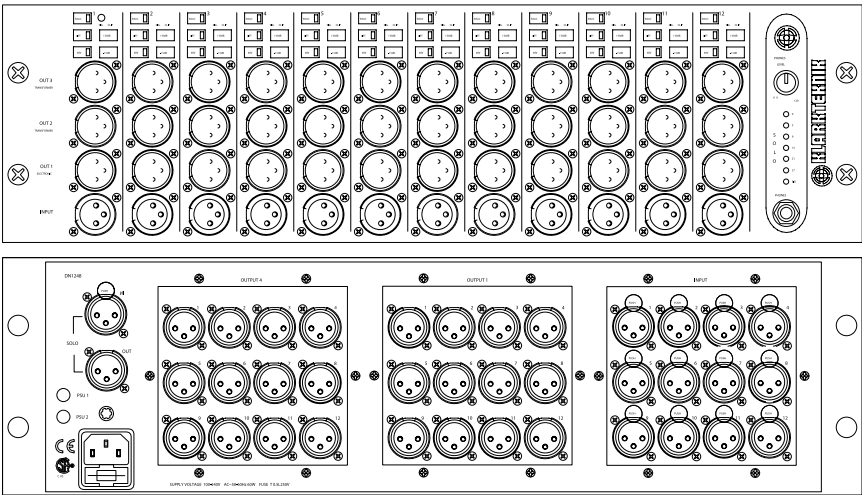
DN9824 loudspeaker processor



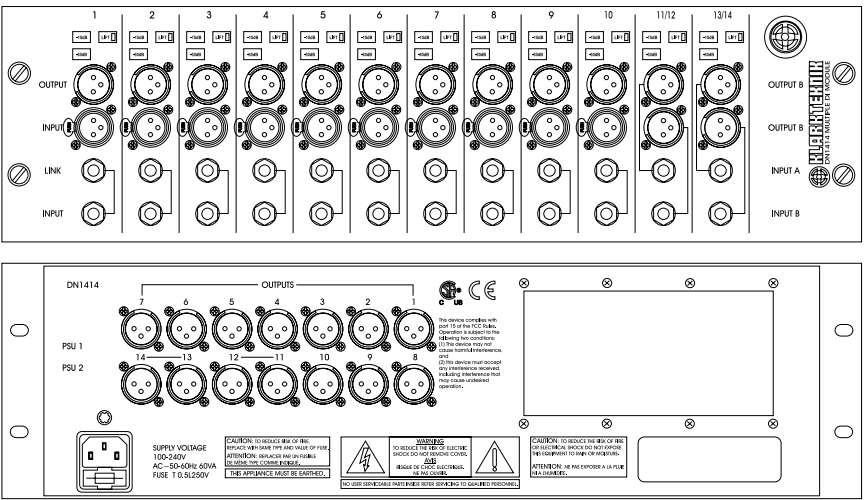
DN9848 loudspeaker processor



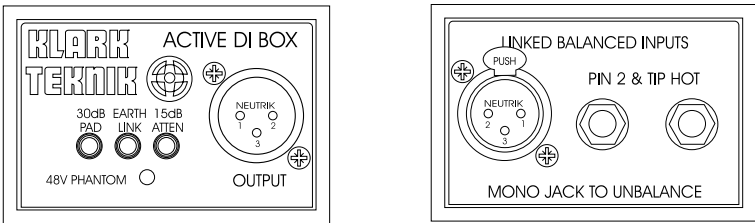
DN1248 mic splitter



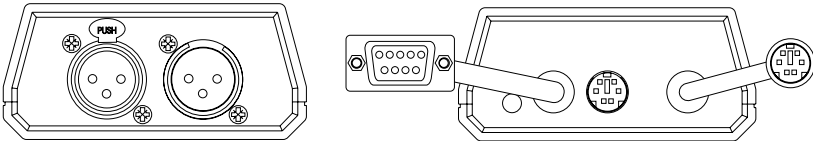
DN1414 multiple di



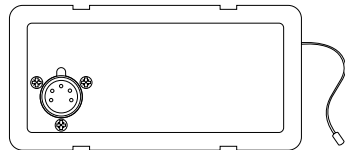
LBB100 active di



LBB485 active di



WS01 wireless transceiver





All new Klark Teknik products are covered by a five-year international factory warranty. For full terms and conditions of this warranty, please refer to the warranty certificate in the back of every product Owners Manual, or on the Klark teknik website.

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