Mixer Accessories

# DN9652

Dual Network Bridge Format Converter with up to 64 Bidirectional Channels and Asynchronous Sample Rate Conversion


- Dual network bridge format converter with up to 64 bidirectional channels
- Compatible with KLARK TEKNIK KT-AES50, KT-DANTE64, KT-MADI and KT-USB network modules
- Bidirectional Asynchronous Sample Rate Conversion on every channel with bypass facility
- Bidirectional output audio clock inhibit feature for redundant network systems
- 24 bit audio operation with 96 kHz and 48 kHz sample rates
- Video synchronisation in standard and high definition formats
- Internal "AES Grade 1" temperature-compensated word clock (1 ppm)
- Internal web server allows browser-based configuration via Ethernet control port
- Status indicator LEDs and LCD display on front panel
- Features Neutrik etherCON* network ports
- Rugged 1U rackmount chassis for durability in portable applications
- Auto-ranging universal switch-mode power supply
- 3-Year Warranty Program*
- Designed and engineered in England

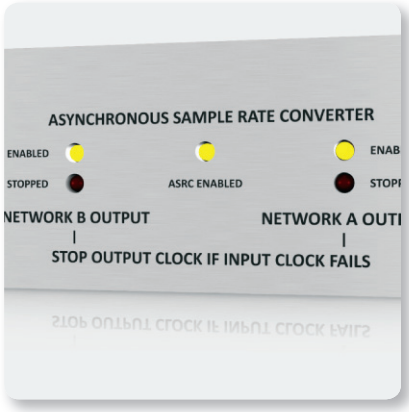

DN9652 provides a multichannel interface between two third party digital audio networks and point-to-point interfaces. The third party interfaces operate in separate clock domains and are connected by a bidirectional asynchronous sample rate converter (ASRC). This unique KLARK TEKNIK technology allows the interfacing of up to 64 bidirectional channels between the two independently clocked domains, which can also operate at different sample rates. Currently supporting AES50, Dante, MADI and USB 2.0 via the KLARK TEKNIK KT-AES50, KT-DANTE KT-MADI and KT-USB network modules, DN9652 is future-proofed in the evolving world of digital audio networking technology by being able to support new and emerging protocols via its two industry-standard expansion slots, which are compatible with the Cirrus CM-1* format.



KLARK TEKNIK

# DN9652

Dual Network Bridge Format Converter
with up to 64 Bidirectional Channels
and Asynchronous Sample
Rate Conversion




## Asynchronous Sample Rate Converter

The multichannel bidirectional Asynchronous Sample Rate Converter (ASRC) allows the two third party domains to function independently, however in instances where the two networks need to be synchronised, the ASRC features a bypass facility so that one third party network domains can be directly clocked from the other.

Additionally, when the two domains are operating independently, a clock failure or loss of synchronisation in one domain will not necessarily affect the operation of the other. Very often in dual-redundant systems it is desirable to propagate a clock failure in one domain across to the other, so that the failure can be recognised and switchover to the redundant network can be initiated. DN9652 features a user-configurable bidirectional output clock inhibit feature that will stop the output clock if the incoming clock synchronisation fails.

## Flexible Synchronisation

DN9652 supports 24 bit audio operation at 48 kHz and 96 kHz independently in both third party network domains. Word clock input and output connections plus a black burst horizontal video sync input are provided on BNC connectors, with the latter supporting PAL, SECAM and NTSC formats in standard definition and high definition 720P, 1080P and 1080i formats. The word clock output can be derived from either third party network clock domain or the word clock input. This flexibility allows interfacing between 48 kHz and 96 kHz AES50 networks when the two KT-AES50 network modules are fitted to the DN9652.


DN9652 features a precision "AES Grade 1" reference temperature-compensated clock oscillator with 1 part-per-million (ppm) stability. This highly accurate clock source can be used as the reference clock for digital audio systems, providing a very defined sound image free of jitter and other digital clocking error artefacts.

Each third party network domain can be synchronised to the external network clock (with or without word clock synchronisation), the network module onboard clock, the word clock input or the black burst video sync input, as well as optionally slaving to the other network clock domain if the ASRC is bypassed.

# DN9652

Dual Network Bridge Format Converter
with up to 64 Bidirectional Channels
and Asynchronous Sample
Rate Conversion

## Internal Web Server

DN9652 features an on-board web server that allows platform-independent configuration using a web browser application. The need for separate control applications and support for multiple operating system versions is eliminated with this approach, which allows simple user selection of network module and DN9652 settings, including third party network domain sample rate and clock synchronisation options and the ASRC bypass and bidirectional output clock inhibit functions.

## Front Panel Indication

DN9652 features status LED indicators for network synchronisation for both third party network domains, Ethernet control port activity and the ASRC bypass and bidirectional output clock inhibit functions on the front panel for 'at a glance' status display, even at wide distances and viewing angles. An alphanumeric LCD display allows individual units to be labelled, essential in large network systems where multiple DN9652 units are in use.



## Built for the Road

Featuring a rugged steel 1U rackmount enclosure, the DN9652 is designed for the rigours of live concert touring. Premium Neutrik BNC connectors are used to ensure reliable clock connections, night after night.

# DN9652

Dual Network Bridge Format Converter
with up to 64 Bidirectional Channels
and Asynchronous Sample
Rate Conversion

## Auto-ranging universal switch-mode power supply

DN9652 features a universal power supply, which is auto-voltage sensing for use on a worldwide basis.

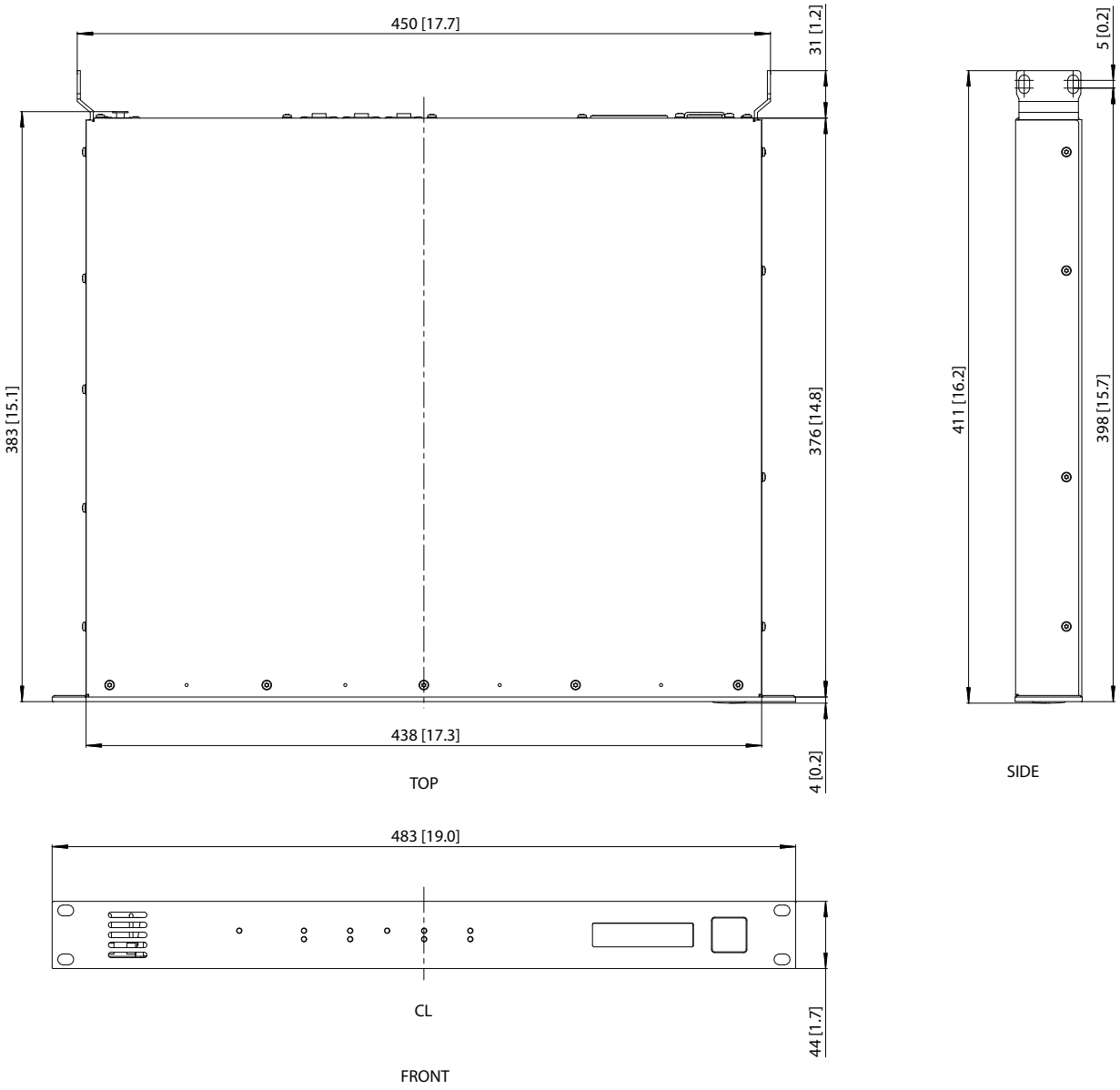

## You Are Covered

We always strive to provide the best possible Customer Experience. Our products are made in our own MUSIC Group factory using state-of-the-art automation, enhanced production workflows and quality assurance labs with the most sophisticated test equipment available in the world. As a result, we have one of the lowest product failure rates in the industry, and we confidently back it up with a generous 3-Year Warranty program.

# DN9652

Dual Network Bridge Format Converter
with up to 64 Bidirectional Channels
and Asynchronous Sample
Rate Conversion

## Dimensions



# DN9652

Dual Network Bridge Format Converter
with up to 64 Bidirectional Channels
and Asynchronous Sample
Rate Conversion

## Technical Specifications

### Ethernet Control Port

| | |
|---|---|
| **Control Port** | 1 |
| Type | Neutrik etherCON with LED status indication |

### External Synchronisation

| | |
|---|---|
| **Word Clock Input** | 1 |
| Type | Neutrik BNC with 75 ohm termination |
| Sample rate | 48 kHz, 96 kHz |
| **Word Clock Output** | 1 |
| Type | Neutrik BNC (no termination) |
| Sample rate | 48 kHz, 96 kHz |

### Video

| | |
|---|---|
| **Black Burst Input** | 1 |
| Type | Neutrik BNC with 75 ohm termination |
| Formats | Neutrik BNC with 75 ohm termination. High definition: 720P, 1080P, 1080i |

### Network

| | |
|---|---|
| **Module Expansion Slot** | 2 |
| Type | Cirrus CM-1 format compatible |

### Asynchronous Sample Rate Converter

| | |
|---|---|
| **Channels** | 64 bidirectional |
| **Bypass** | Bidirectional sync network domain to other network domain (user-selectable) |
| **Output Clock Inhibit** | Bidirectional stop output clock if input clock fails (user-selectable) |

### Onboard Clock

| | |
|---|---|
| **Type** | Temperature-controlled crystal oscillator (TCXO) with 1 part-per-million (1 ppm) stability |

### Network Domain Clock Source

| | |
|---|---|
| **Options** | External network clock<br>External network clock with word clock in synchronisation<br>Onboard oscillator<br>Network module onboard clock<br>Clock selection from other network domain<br>Word clock input<br>Video black burst input |

### Word Clock Output Source

| | |
|---|---|
| **Options** | Either network clock domain<br>Word clock input |

### Other Terminations

| | |
|---|---|
| **Power** | 3-pin IEC |

### Power Requirements

| | |
|---|---|
| **Voltage** | 100 to 240 VAC, 50 to 60 Hz |
| **Consumption** | <50W |

Mixer Accessories

# DN9652

Dual Network Bridge Format Converter
with up to 64 Bidirectional Channels
and Asynchronous Sample
Rate Conversion

## Dimensions

| | |
|---|---|
| **Width** | 483 mm (19.0") |
| **Depth** | 411 mm (16.2") |
| **Height** | 44 mm (1.7") |

## Weight

| | |
|---|---|
| **Net** | 5.0 kg (11.0 lbs) |

## Options

| | |
|---|---|
| **KLARK TEKNIK KT-AES50** | AES50 Network Module with up to 48 Bidirectional Channels |
| **KLARK TEKNIK KT-DANTE64** | Audinate Dante Network Module with up to 64 Bidirectional Channels |
| **KLARK TEKNIK KT-MADI** | MADI Network Module with up to 64 Bidirectional Channels |
| **KLARK TEKNIK KT-USB** | USB 2.0 Network Module with up to 48 Bidirectional Channels |

# DN9652

Dual Network Bridge Format Converter
with up to 64 Bidirectional Channels
and Asynchronous Sample
Rate Conversion

## Architecture & Engineering Specifications

The dual network bridge shall provide bidirectional asynchronous sample rate conversion of up to 64 simultaneous channels of 24 bit resolution digital audio, between two third party network module interfaces.

The dual network bridge shall have two provision for two expansion slots conforming to the electrical and mechanical specifications of the Cirrus CM-1 format to provide the two third party network module interfaces.

The dual network bridge shall have one Ethernet control port for the purposes of remote configuration from a computer web browser interface and updating the internal software.

The dual network bridge shall have two clock domains, separated by an asynchronous sample rate converter which shall permit independent operation of the two clock domains whilst providing a birectional 64 channel interface between them. The asynchronous sample rate converter shall have a bypass option with the facility to lock the one network clock domain to the other network clock domain.

Each network clock domain shall support clock synchronisation to incoming clock via third party network module, word clock input or video black burst Input which shall support incoming video synchronisation signals in PAL/SECAM/NTSC formats in standard definition (SD) and 720P, 1080P and 1080i high definition (HD) formats, as well as optionally slaving to the other network clock domain if the asynchronous sample rate converter is bypassed. The network clock domain shall support operation at either 96 kHz or 48 kHz sample rates.

The word clock output shall be capable of being derived from either network clock domain or the word clock input.

The dual network bridge shall have a precision clock reference provided by a temperature-controlled crystal oscillator (TCXO) with 1 part-per-million (1 ppm) stability.

The dual network bridge shall have user-selectable functions for both network clock domains to stop an output clock if the corresponding input clock fails, to propagate network failures across the asynchronous sample rate converter for the purposes of automatic or manual redundancy switchover.

The dual network bridge shall be housed in a standard 1U 19" rackmount chassis, and shall be 483 mm wide x 411 mm deep x 44 mm high (19.0" x 16.2" x 1.7"), with nominal weight 5.0 kg (11.0 lbs). The network bridge shall be installed in a rack frame or road case capable of safely supporting its weight. Input, output, and power connections shall be made at the rear panel of the network bridge. Installers shall allow adequate space at the rear for connection and disconnection of input, output, and power connections. The power requirements shall be 100 to 240 VAC, 50 to 60 Hz.

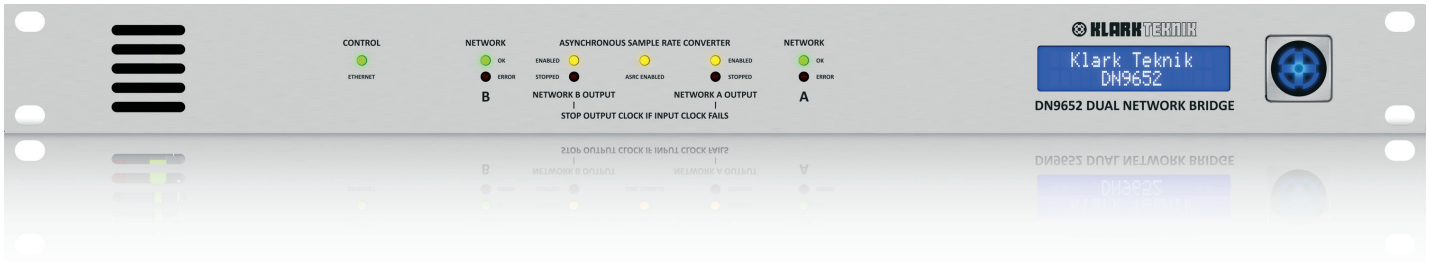
The dual network bridge shall be the KLARK TEKNIK DN9652 and no other alternative shall be acceptable.space at the rear for connection and disconnection of input, output, and power connections. The power requirements shall be 100 to 240 VAC, 50 to 60 Hz.

The dual network bridge shall be the KLARK TEKNIK DN9652 and no other alternative shall be acceptable.

Mixer Accessories

# DN9652

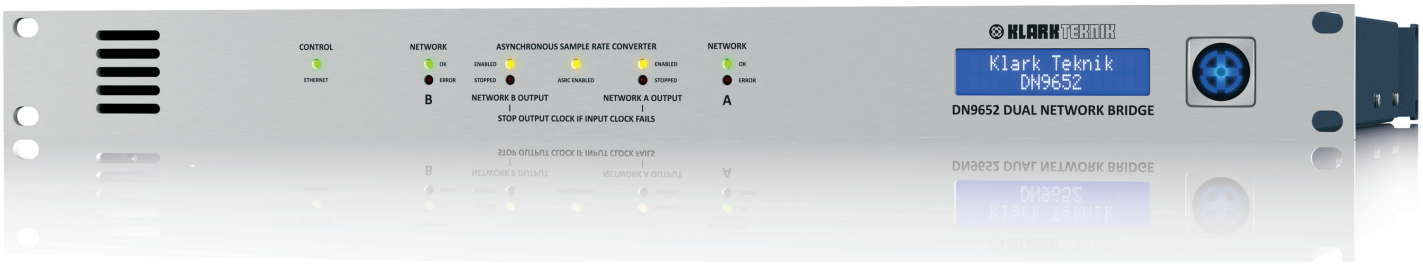
Dual Network Bridge Format Converter
with up to 64 Bidirectional Channels
and Asynchronous Sample
Rate Conversion

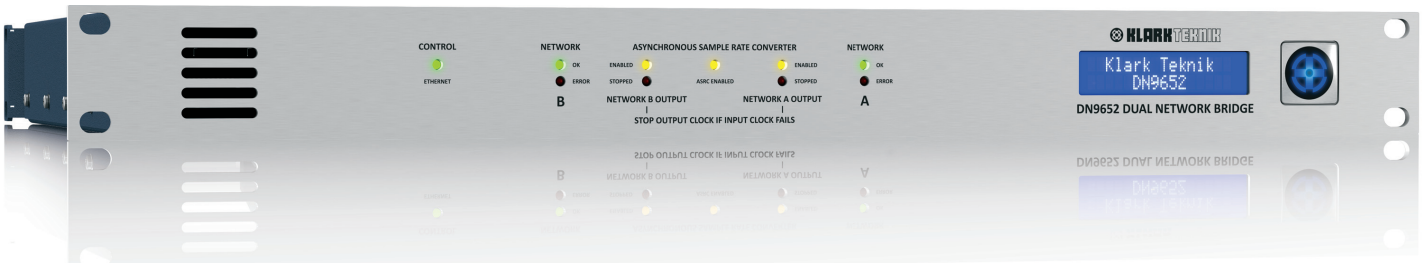



Mixer Accessories

# DN9652

Dual Network Bridge Format Converter
with up to 64 Bidirectional Channels
and Asynchronous Sample
Rate Conversion




3 Year Warranty

For service, support or more information contact the KLARK TEKNIK location nearest you:

**Europe**
**MUSIC Group Services UK**
Tel: +44 156 273 2290
Email: CARE@music-group.com

**USA/Canada**
**MUSIC Group Services NV Inc.**
Tel: +1 702 800 8290
Email: CARE@music-group.com

**Japan**
**MUSIC Group Services JP K.K.**
Tel: +81 3 6231 0454
Email: CARE@music-group.com



KLARK TEKNIK