ALLEN&HEATH

GX4816

Getting Started Guide

ⓘ Before starting please check www.allen-heath.com for the latest system firmware and product documentation.

Limited One Year Manufacturer's Warranty

Allen & Heath warrants the Allen &Heath -branded hardware product and accessories contained in the original packaging ("**Allen & Heath Product**") against defects in materials and workmanship when used in accordance with Allen & Heath's user manuals, technical specifications and other Allen & Heath product published guidelines for a period of ONE (1) YEAR from the date of original purchase by the end-user purchaser ("**Warranty Period**").

This warranty does not apply to any non-Allen & Heath branded hardware products or any software, even if packaged or sold with Allen & Heath hardware.

Please refer to the licensing agreement accompanying the software for details of your rights with respect to the use of software/firmware ("EULA").

Details of the EULA, warranty policy and other useful information can be found on the Allen & Heath website: www.allen-heath.com/legal.

Repair or replacement under the terms of the warranty does not provide right to extension or renewal of the warranty period. Repair or direct replacement of the product under the terms of this warranty may be fulfilled with functionally equivalent service exchange units.

This warranty is not transferable. This warranty will be the purchaser's sole and exclusive remedy and neither Allen & Heath nor its approved service centres shall be liable for any incidental or consequential damages or breach of any express or implied warranty of this product.

Conditions Of Warranty

The equipment has not been subject to misuse either intended or accidental, neglect, or alteration other than as described in the User Guide or Service Manual, or approved by Allen & Heath. The warranty does not cover fader wear and tear.

Any necessary adjustment, alteration or repair has been carried out by an authorised Allen & Heath distributor or agent.

The defective unit is to be returned carriage prepaid to the place of purchase, an authorised Allen & Heath distributor or agent with proof of purchase. Please discuss this with the distributor or the agent before shipping. Units returned should be packed in the original carton to avoid transit damage.

DISCLAIMER: Allen & Heath shall not be liable for the loss of any saved/stored data in products that are either repaired or replaced.

Check with your Allen & Heath distributor or agent for any additional warranty information which may apply. If further assistance is required please contact Allen & Heath Ltd.

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ALLEN&HEATH

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http://www.allen-heath.com

IMPORTANT - Read before starting

Safety instructions

Before starting, read the **Important Safety Instructions** printed on the sheet supplied with the equipment. For your own safety and that of the operator, technical crew and performers, follow all instructions and heed all warnings printed on the sheet and on the equipment panels.

System operating firmware

The function of the GX Expander is determined by the firmware (operating software) that the mixing system runs. Firmware is updated regularly as new features are added and improvements made.

ⓘ Check www.allen-heath.com for the latest version of mixer firmware. Update to the latest version of firmware before connecting the GX Expander. The unit might operate incorrectly or fail to connect when running earlier firmware.

Software licence agreement

By using this Allen & Heath product and the software within it you agree to be bound by the terms of the relevant **End User Licence Agreement** (EULA), a copy of which can be found at www.allen-heath.com/legal. You agree to be bound by the terms of the EULA by installing, copying, or using the software.

Further information

Please refer to the **Allen & Heath website** for further information, knowledgebase and technical support. For more information on mixer setup and mixing functions please refer to the mixer Firmware Reference Guide available for download at www.allen-heath.com.

ⓘ Check for the latest version of this Getting Started Guide.

General precautions

- Protect the equipment from damage through liquid or dust contamination. Cover the expander when it is not being used for a long period.

- If the equipment has been stored in sub-zero temperatures allow time for it to reach normal operating temperature before use at the venue. Recommended operating temperature is 0 to 40 degrees Celsius.

- Avoid using the equipment in extreme heat and direct sunlight. Make sure the ventilation slots are not obstructed and that there is adequate air movement around the equipment.

- Clean the equipment with a soft brush and dry lint-free cloth. Do not use chemicals, abrasives or solvents.

- It is recommended that servicing is carried out only by an authorised Allen & Heath agent. Contact details for your local distributor can be found on the Allen & Heath website. Allen & Heath do not accept liability for damage caused by maintenance, repair or modification by unauthorised personnel.

Register your product

Register your product online at www.allen-heath.com/register.

Packed items

Check you have received the following:

- GX4816 expander

- Getting Started Guide AP11651

- Safety Sheet

- IEC mains lead

Introduction

The GX4816 is an I/O Expander for Allen & Heath 96kHz digital mixing systems. It provides 48 remote controlled mic/line preamps and 16 XLR line outputs, as well as 2 DX ports for further system expansion. When connected to an SQ or Avantis, connection to a ME personal mixing system is possible via the DX2 port. The GX4816 connects to the mixing system over a single Cat5e cable.

Contents

1. Installing the Expander

1.1 Free standing

The Expander can be operated as a freestanding unit for shelf or floor use.

ⓘ Ensure adequate air flow around the unit. It must not be covered in any way. Always stand the unit on a firm flat surface away from any soft furnishings or carpet.
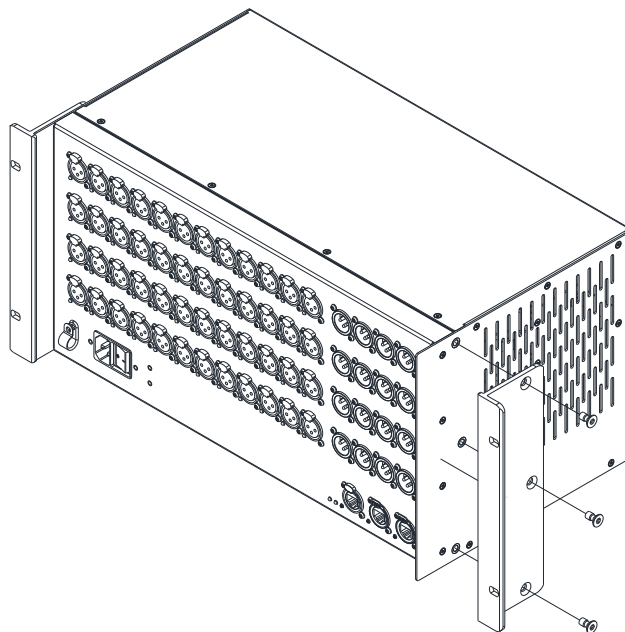
1.2 Rack mounting and flight casing

The GX4816 is designed as a 19-inch rack mount unit and occupies 5U of rack space. The plastic feet may need to be removed before rack mounting; retain them for future use.

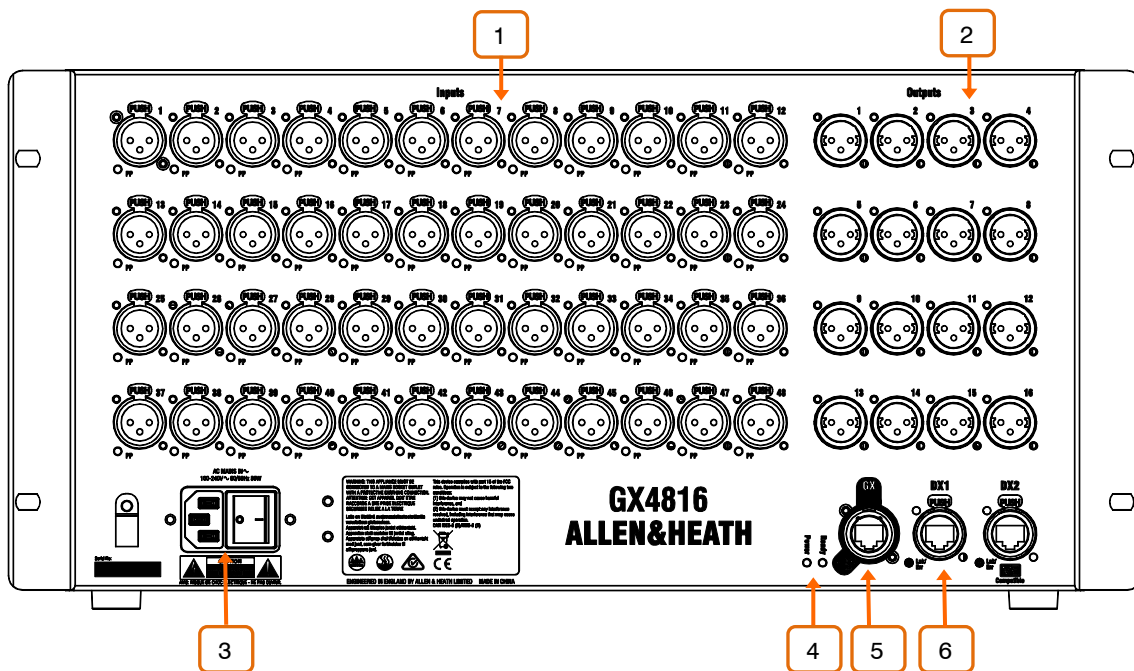For rental, touring and other portable use, we recommend that you use a professional grade flight case.

ⓘ Ensure natural convection of airflow around the unit by allowing good ventilation below, in front of and behind the unit. Rack equipment known to produce a significant amount of heat should not be mounted directly below the unit. Forced convection by means of a rack mounted fan-tray may be desirable in situations where space is restricted and the ambient air temperature is high.

1.3 Rack ears

The rack ears can be detached for shelf or floor operation. They are secured to the sides of the Expander with 3 screws each as indicated below. Use a Pozidriv screwdriver to remove the rack ears. Fix in place using the M6*12 countersink pozi screws provided, with a torque setting of 6N-m.

2. Front Panel

1 **Input sockets** – Balanced XLR mic/line inputs with +48V Phantom Power indicator. The preamps are built into the GX4816 and their Gain, Pad and +48V are controlled from the mixer via the Cat5 link.

The +48V indicator detects voltage at the socket whether supplied by the GX4816 or received from an external source.

2 **Output sockets** – Balanced XLR outputs operating at nominal +4dBu level.

3 **Mains power** – IEC connector and power switch for the built-in universal voltage PSU. This accepts voltages from 100 to 240V AC. Secure the cable to the plastic P-clip using a T20 screwdriver.

ⓘ Heed the safety warnings printed on the panel.

4 **Status indicators** – The **Ready** indicator lights up when the output sockets are ready to pass audio after power up. **Power** indicates the correct functioning of the PSU.
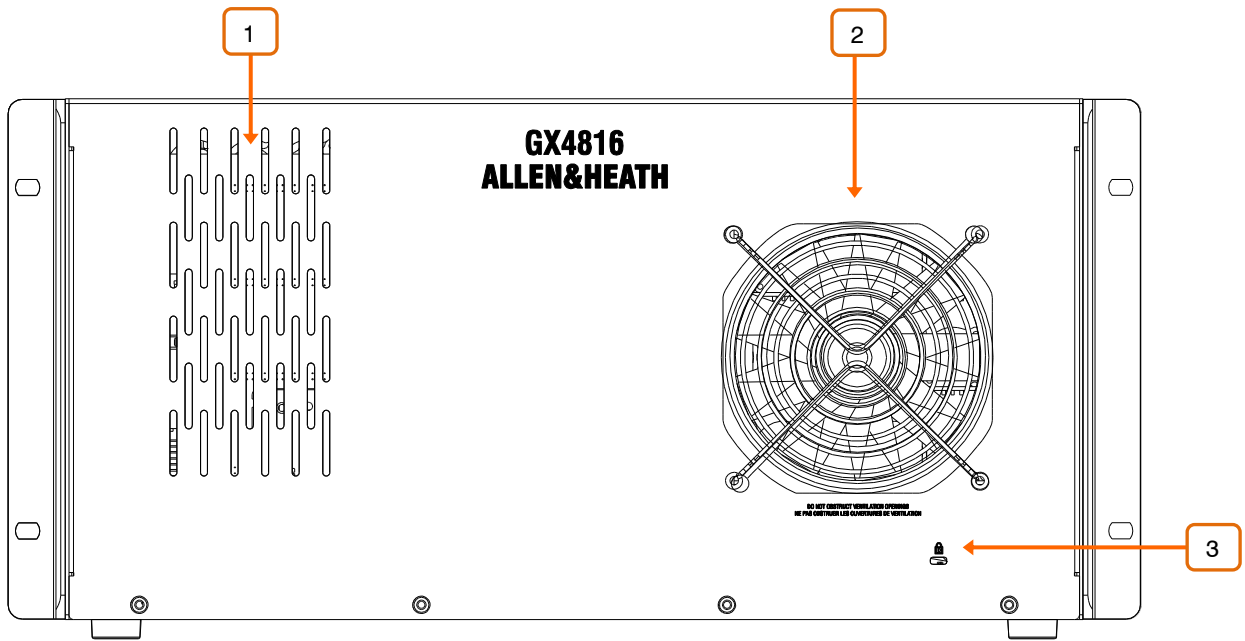
5 **GX port** – EtherCon port for connection to the mixing system over Gigabit Ethernet. A single Cat5e (or higher) cable carries multichannel audio at 96kHz and control.

6 **DX ports** – EtherCon ports for connection of DX Expanders over Fast Ethernet. Each cable carries 32x32 channels of 96kHz audio and control. Connect a single DX32, or up to 2x DX168 / DX164-W / DX012 per port.

ⓘ DX1 and DX2 on this device cannot be used for redundancy purposes.

ⓘ SQ / Avantis only: When connected to a ME-U, ME-1 or ME-500, the **DX2** port is self-configured as a 40ch, 48kHz output only port for the ME personal mixing system. Channel names and stereo links are communicated to connected ME systems, and the ME output patch temporarily replaces the output patch to the DX2 port.
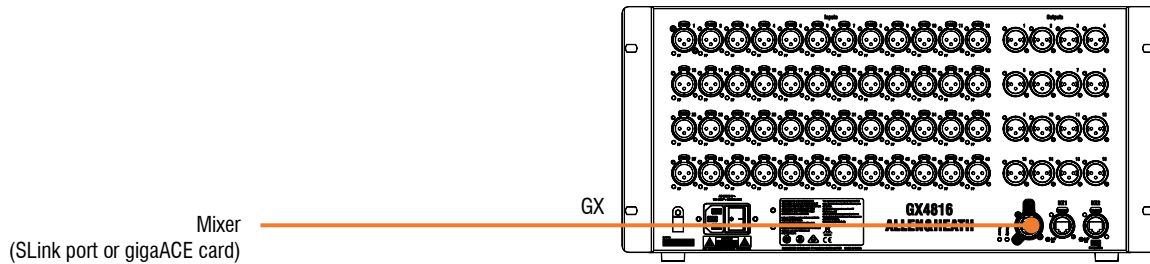
3. Rear Panel

1   **Vents** – Ensure good ventilation and avoid obstruction of vents while operating. Avoid dirt or liquid ingress.

2   **Fan** – Ultra-quiet fan. Make sure the ventilation opening is not obstructed.

3   **Kensington Lock** - A slot for fitting standard Kensington anti-theft security devices.

4. Connect and power up

4.1 Connection to the mixing system

Connect the GX Expander to the mixing system SLink port or gigaACE card.

ⓘ Refer to www.allen-heath.com for cable requirements, recommendations, and a list of CAT5 cables available to order.

ⓘ Check www.allen-heath.com for the latest version of mixer firmware. Update to the latest version of firmware before connecting the GX Expander. The unit might operate incorrectly or fail to connect when running earlier firmware.

Mixer
(SLink port or gigaACE card)

GX

Switch on the mixer first, then the GX Expander. The GX port Lnk/Err indicators flash at a steady rate when the link is established. The red error indicator lights if a communication error is detected.

ⓘ If the firmware in a connected GX Expander is not the same version as that in the mixer, then the mixer will automatically update the GX firmware during power up. This can take up to 20 seconds. During this time the Lnk/Err indicators on the GX Expander flash at a fast rate. Once updated normal flash rate is restored.
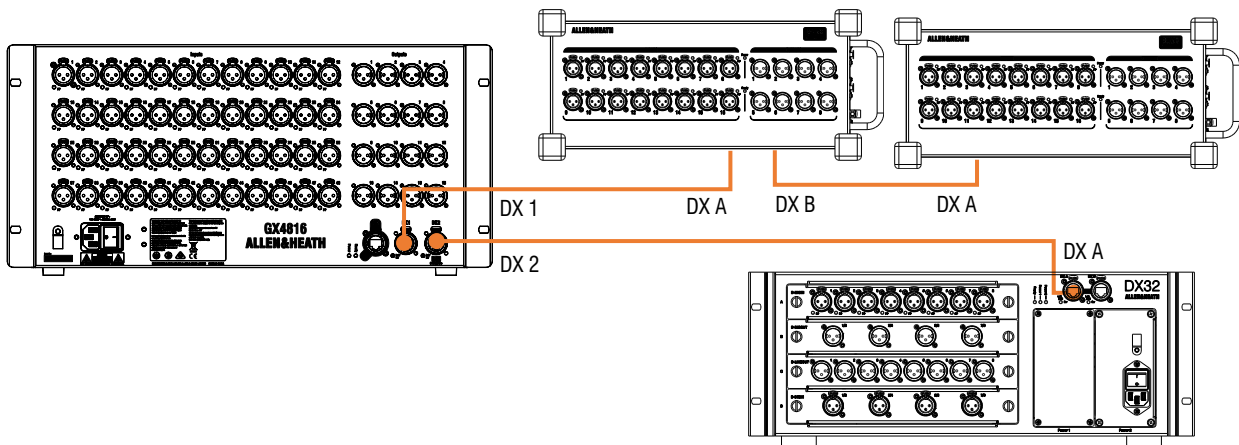
4.2 DX Expander connection

Connect a single DX32, or up to 2x DX168 / DX164-W / DX012 per DX port.

DX Expander inputs will appear as inputs 65-96 (DX1) and 97-128 (DX2) on the SLink port.

DX Expander outputs will appear as outputs 65-96 (DX1) and 97-128 (DX2) on the SLink port.

ⓘ DX1 and DX2 on the GX4816 cannot be used for redundancy purposes.

DX 1   DX A   DX B   DX A

DX 2   DX A

4.3 ME connection (SQ / Avantis only)

Connect a ME-U, ME-1 or ME-500 to the DX2 port on the GX4816. Channel names and stereo links are communicated to connected ME systems, and the ME output patch temporarily replaces the output patch to the DX2 port.

ⓘ ME connection via DX2 is not supported on dLive or AHM mixers.

4.4 Cables

Use Cat5e or higher STP cables with a maximum cable length of 100m per connection.

Allen & Heath can provide a number of Cat5e and Cat6 cables suitable for use with the GX Expander:

AH9997   2m CAT5e cable with Neutrik EtherCon locking connectors

AH10887   100m drum of CAT6 cable with Neutrik EtherCon locking connectors
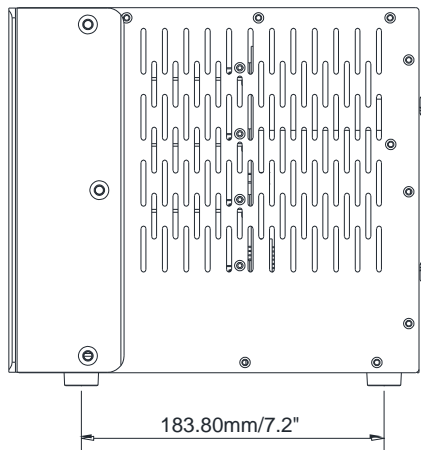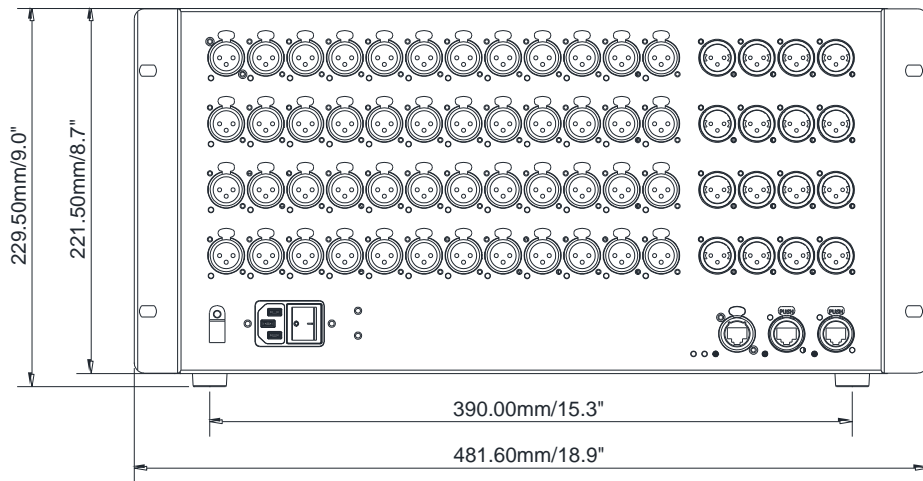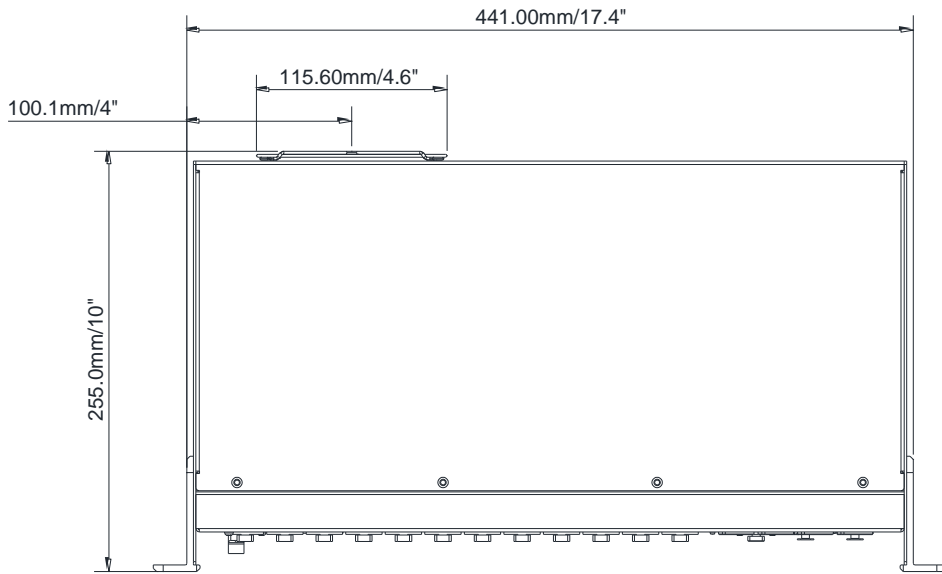**AH10886**   80m drum of CAT6 cable with Neutrik EtherCon locking connectors
AH10885   50m drum of CAT6 cable with Neutrik EtherCon locking connectors
AH10884   20m drum of CAT6 cable with Neutrik EtherCon locking connectors

Contact your local A&H dealer for more information.

5. Dimensions

441.00mm/17.4"

115.60mm/4.6"

100.1mm/4"

255.0mm/10"

229.50mm/9.0"

221.50mm/8.7"

390.00mm/15.3"

481.60mm/18.9"

183.80mm/7.2"

6. Technical specs

Inputs

Mic/Line XLR Inputs	Balanced XLR, +48V phantom power
Mic/Line Preamp	Fully recallable
Input Sensitivity	-60 to +15dBu
Analogue Gain	+5 to +60dB, 1dB steps
Pad	-20dB Active PAD
Maximum Input Level	+30dBu (PAD in)
Input Impedance	>4kΩ (Pad out), >10kΩ (Pad in)
Mic EIN	-127dB with 150Ω source
Phantom Power indication	Per socket, internal or external phantom power sensing, triggered at 24V

Outputs

Analogue XLR Outputs	Balanced, Relay protected
Output Impedance	<75Ω
Nominal Output	+4dBu = 0dB meter reading
Maximum Output Level	+21dBu
Residual Output Noise	-95dBu (muted, 22Hz-22kHz)

Power

Mains Voltage Operating Range	100-240V AC, 50/60Hz
Mains Power Consumption	90W max

Temperature

Operating Temperature Range	0°C to 40°C (32°F to 104°F)

Dimensions and Weights

	Width x Depth x Height x Weight
GX4816	481.6 x 255 x 229.5 mm x 8kg (18.9" x 10" x 9" x 17.6lbs)
GX4816 (boxed)	560 x 385 x 310 mm x 10kg (22" x 15.2" x 12.2" x 22lbs)