

INTRODUCTION TO THE ZED-R16

A Technical Overview:

The Allen & Heath ZED-R16 mixer has been carefully and lovingly designed in the beautiful county of Cornwall in the UK and is manufactured alongside a wide range of professional audio mixing consoles.

Allen & Heath has a long history of making classic recording mixers such as the Sigma, Syncon, System 8, Saber and the GS3000, but for a few years have concentrated on the live sound, installation and pro DJ markets.

Re-entering the world of recording mixers is a very exciting prospect for us and our customers. We spent a long time examining how modern recording methods, equipment and software applications have changed the way musicians and sound engineers work, then over a pizza lunch at one PLASA show we cemented the ideas together as the original concept for ZED-R16.

ZED-R16 is designed to fulfil the needs of musicians and sound engineers with many requirements and different ways of working. With your ZED-R16 you can:

- Record multi-channel via FireWire or ADAT.
- Monitor each recording track via the FireWire inputs.
- Use the FireWire connections to and from each channel to insert processing plug-ins such as gates or compressors.
- Use the ZED-R16 to mix a live show and record it to multi-track (Either ADAT or FireWire).
- Mix in analogue using the FireWire inputs, pre or post EQ.
- Mix in digital using MIDI faders, rotaries and switches provided on the ZED-R16.
- Use analogue EQ as an analogue plug-in to a digital system.
- Use the professional studio features to control monitoring and artists feeds as well as transport control.

In many ways the ZED-R16 is a modern classic recording console. It has attributes of an old fashioned in-line recording mixer but with digital sends from each channel as the record path and digital returns being the monitor path. Add to this the flexibility of where you send or return the digital connections within the channel strip, and then the ability to use the faders and the other MIDI controllers to mix in your software application, it all adds up to a unique and mouth watering product.

The components used in ZED series are predominantly the same as in the larger Allen & Heath products and the construction methods are also very similar – utilising individual vertically mounted channel circuit boards with each rotary control fixed with a metal nut to the front panel. This provides a very robust product that will resist damage and give years of reliable use. It also makes servicing easier should it be required.

Mic/Line Pre-amps:

The ultimate performing pre-amps are fitted to ZED-R16. Similar only to those used in GL2800 & GL3800, they comprise a symmetrical circuit with individual linearising feedback to both phases, along with the lowest noise transistors available, providing astoundingly low distortion and noise which translates to superior clarity and dynamic range.

EQ:

Some may say that the ZED-R16 has too much EQ for this size of mixer with two fully parametric mid sections and yes it is powerful, but try it and you'll love it, especially the low mid-great for rich punchy bass guitar and powerful kick drum sounds.

MIDI Control:

There is a MIDI controller area in the master where 12 rotary, 4 linear and 12 switches can be mapped to control your software functions. In addition there are 5 dedicated transport keys, plus each of the 16 channel faders can be switched to MIDI control.

FireWire & ADAT:

Each of the 16 main channels plus the master left & right mix has a digital send and return. These are flexible in that the channel signals can be sent pre-insert or post EQ and the return can be switched into pre-insert or pre-fader or not switched in at all.

The FireWire controller we use in ZED-R16 is the DICE Jr from TC Applied Technologies and is capable of streaming up to 64 channels at a sample rate of up to 192kHz. The device employs a patented low jitter phase locked loop using its JET™PLL technology and is able to interface to the optical ADAT connectors giving a maximum of 16 ADAT inputs and outputs. Coupled to this are high quality 24bit 114dB and 118dB ADC's and DAC's providing a super high quality link between the worlds of analogue and digital.

SPECIFICATIONS

Operating Levels

Inputs	
Mono channel (XLR) Input	-6 to -60dBu for nominal (+14dBu in max)
Mono channel Line Input (Jack socket)	+14 to -40dBu (+34dBu maximum)
Insert point (TRS Jack socket)	0dBu nominal +21dBu maximum
Stereo Input (Jack sockets)	0dBu nominal (control = Off to +10dB)
Stereo input (phono sockets)	0dBu nominal (control = Off to +10dB)
2 Track Input (phono sockets)	0dBu nominal +21dBu maximum
Outputs	
Main (2 Track 1) L-R (XLR)	+4dBu nominal. +27dBu maximum.
L-R Insert (TRS Jack socket)	0dBu nominal +21dBu maximum
2 Track 2 Outputs (Jack sockets)	0dBu nominal. +21dBu maximum.
All other analogue outputs	0 nominal +21dBu maximum
Headroom	
Analogue Headroom from nominal (0Vu)	21dB
Digital converter headroom from nominal analogue (0Vu)	16dB

Frequency Response

Mic in to Mix L/R Out, 30dB gain	+/-0.5dB 20Hz to 140kHz.
Line in to Mix L/R out 0dB gain	+/-0.5dB 20Hz to 20kHz
Stereo in to Mix L/R out	+/-0.5dB 20Hz to 40kHz

THD+n

Mic in to Mix L/R Out, 6dB gain 1kHz +10dBu out	0.0025%
Mic in to Mix L/R Out, 30dB gain 1kHz	0.0045%
Line in to Mix L/R out 0dB gain +10dBu 1kHz	0.003%
Stereo in to Mix L/R out 0dB gain +10dBu 1kHz	0.004%

Digital Performance

Analogue to Digital conversion	24bit 114dB dynamic range (A wtd)
Digital to Analogue conversion	24bit 118dB dynamic range (A wtd)
Sample Rate	44.1, 48, 88.2, 96kHz

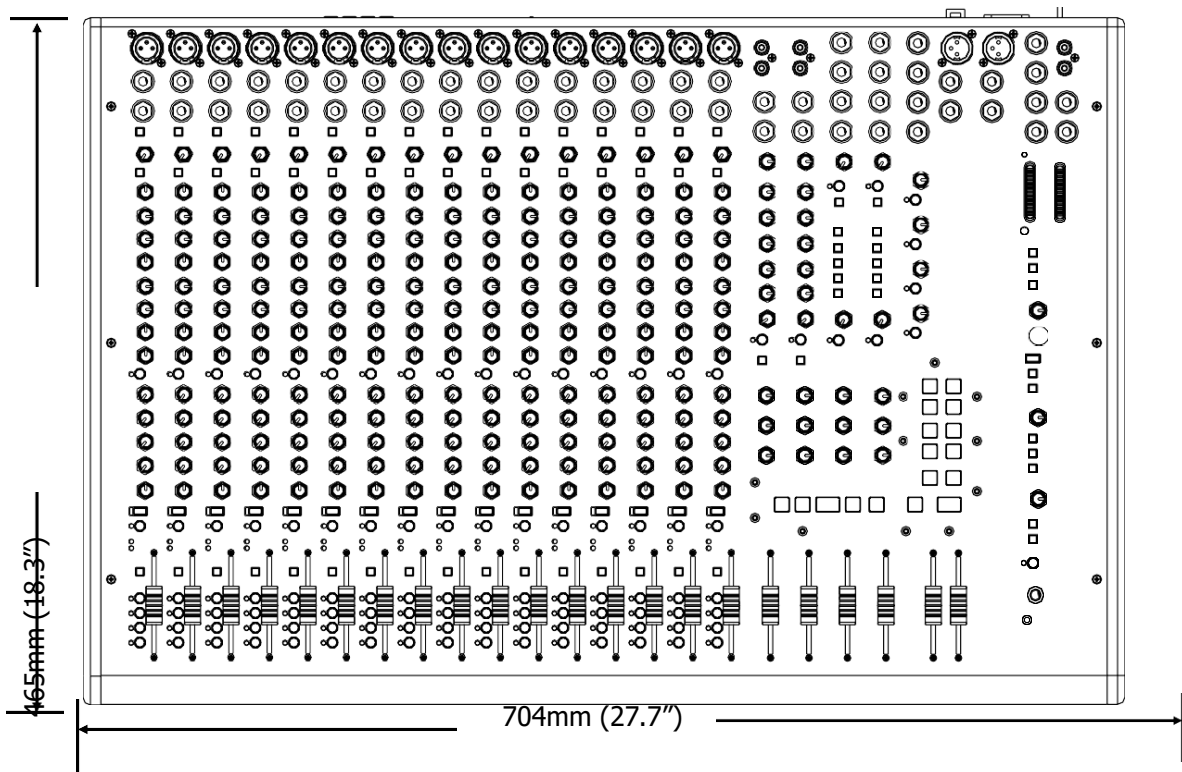
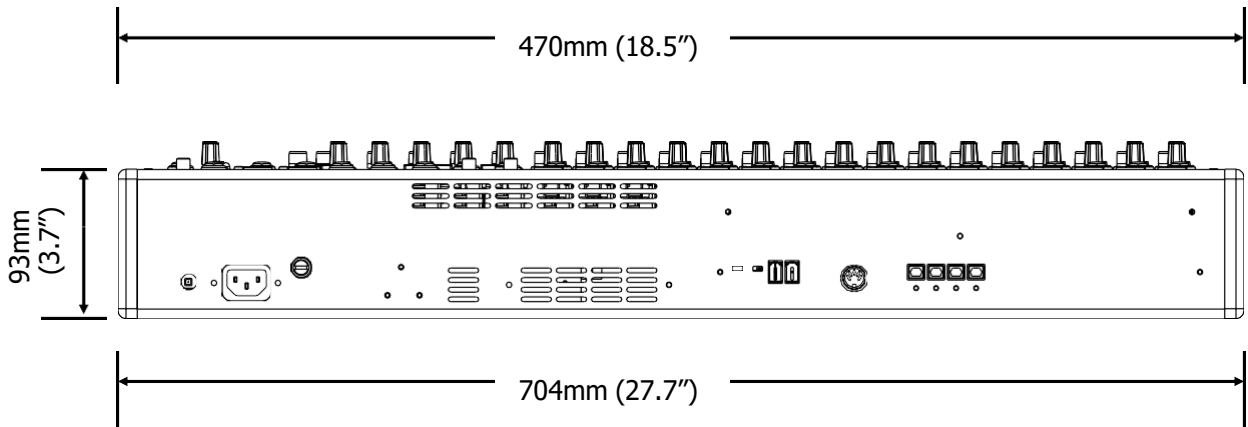
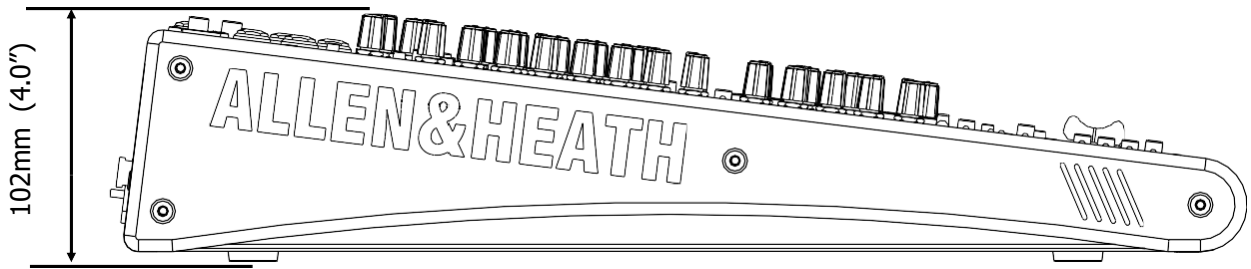
Noise

Mix Noise, LR out, 16 channels routed, Ref +4dBu, 22-22kHz	-88dB (-84dBu)
Mix Noise, Aux 1-4 out, sends minimum, masters at unity 22-22kHz	-86dBu
Mic Pre EIN @ 60dB gain 150R input Z 22-22kHz	-128.5dBu

MIDI

Fader and Rotary values	0-127
MIDI switches	Note on/note off
Transport control	MIDI Machine Control
MIDI channel	Default = 16. User settable

Power consumption	48W
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ZED-R16	13 (29lb)	15 (33 lb)
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