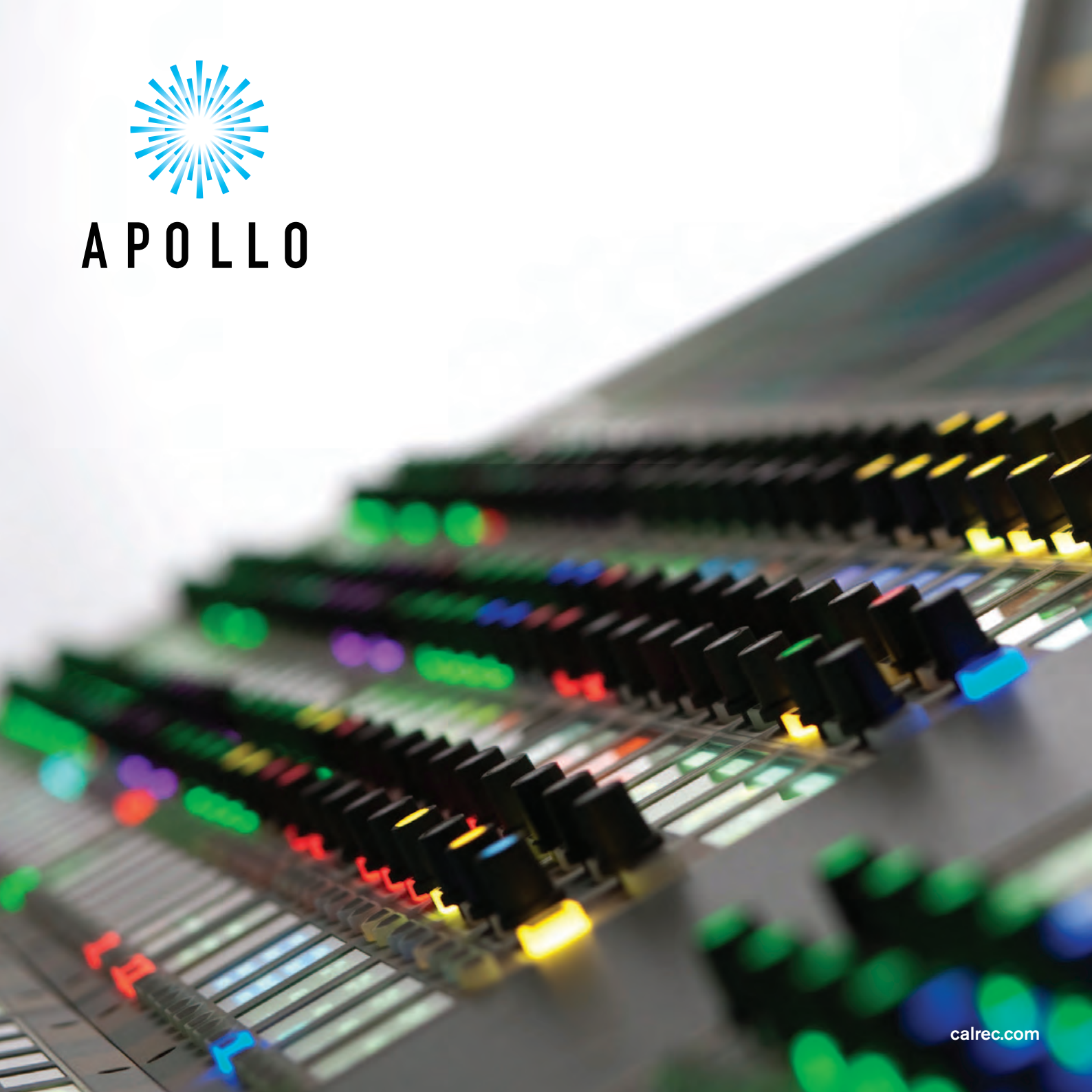
APOLLO
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HD audio for broadcast demands cutting-edge technology

Powerful, responsive, flexible, beautiful, with Calrec's world-renowned levels of reliability built in. Apollo sets a new standard in audio mixing consoles.

Throughout Calrec's history, its team of innovators has consistently provided superior products which have allowed forward-thinking broadcasters to remain one step ahead.

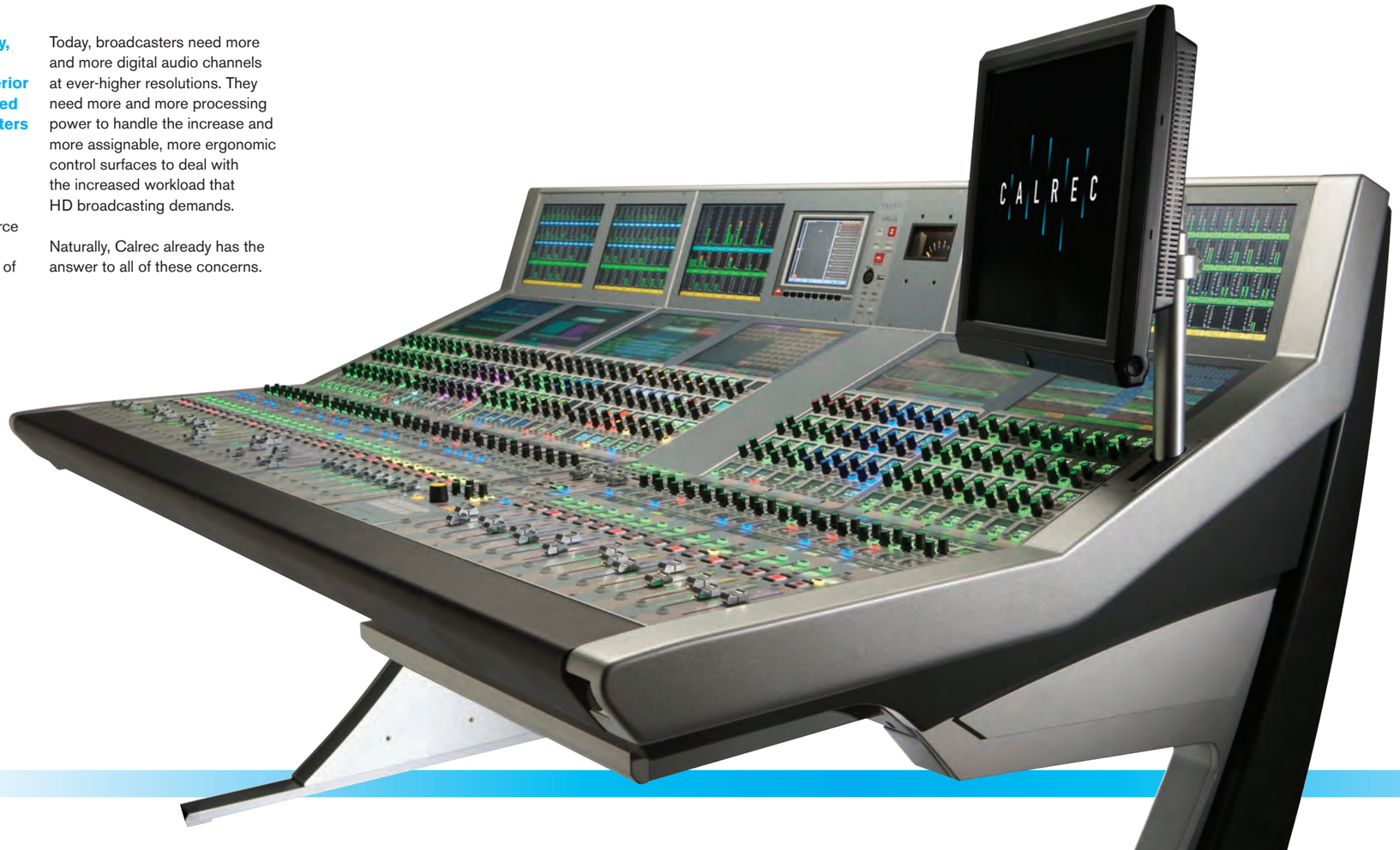
Calrec introduced the world's first true stereo broadcast console and the first point-source surround microphone in the 1970s, anticipating the growth of multi-channel broadcast audio.

Calrec produced the world's first digitally controlled analog broadcast console in the early 1980s, predicting the separation of control surfaces from networked processing hardware.

In 2007 Calrec launched Bluefin, the first DSP processing engine based on FPGA (Field Programmable Gate Array) technology, which enabled broadcast consoles to work efficiently with true discrete-channel 5.1 surround.

Today, broadcasters need more and more digital audio channels at ever-higher resolutions. They need more and more processing power to handle the increase and more assignable, more ergonomic control surfaces to deal with the increased workload that HD broadcasting demands.

Naturally, Calrec already has the answer to all of these concerns.



Reliability

For over 40 years Calrec has adhered to the same basic design principals: an audio console for live on-air use has to be extremely reliable, and easy to operate.

Calrec has an excellent reputation in both these areas, but with all hardware there is always a potential for failure. That's why Calrec doesn't take any chances.

Calrec provides redundant hardware for ALL critical systems, and takeover is automatic and seamless. These elements are hot-pluggable for easy replacement.

Calrec hot spares mirror what the on-line component is doing and in the rare event of a hardware failure, they automatically take over. This intelligent system covers DSP modules, control processor modules, router modules and all PSUs.

With Calrec, you can be confident that you are always in control.

Apollo also introduces several substantial technological advancements. Immediately apparent is a flexible new control surface, incorporating color, touch and tactile controls.

Hydra2 is Calrec's plug and play audio routing system, based on Apollo's integral 8192^2 router. Bluefin2 ensures Calrec consoles are the most powerful broadcast consoles available.

Apollo works the way you want to

A variety of operating modes and ways to display information ensure that every operator feels at home.

The surface incorporates over 25 years of refinement of Calrec's assignable console designs, providing extremely clear visual feedback. Rotary controls and buttons change color to reflect the type of control they are assigned to. The console also uses color to denote mono, stereo or 5.1 channel inputs, or whether a fader is assigned to mains or groups.

Using these technologies, Apollo provides instant visual feedback about control assignments and the soft nature of the panels allows the operator to reconfigure them to reflect a variety of operating setups.

In Assign Mode, panels replicate a classic Calrec assignable console. In Wilds Mode each vertical channel strip is assigned to represent a single channel.

Not only is the result practically elegant, offering the same sense of assurance associated with one-knob per function control, but it's also visually striking. Form and function, seamlessly matched.

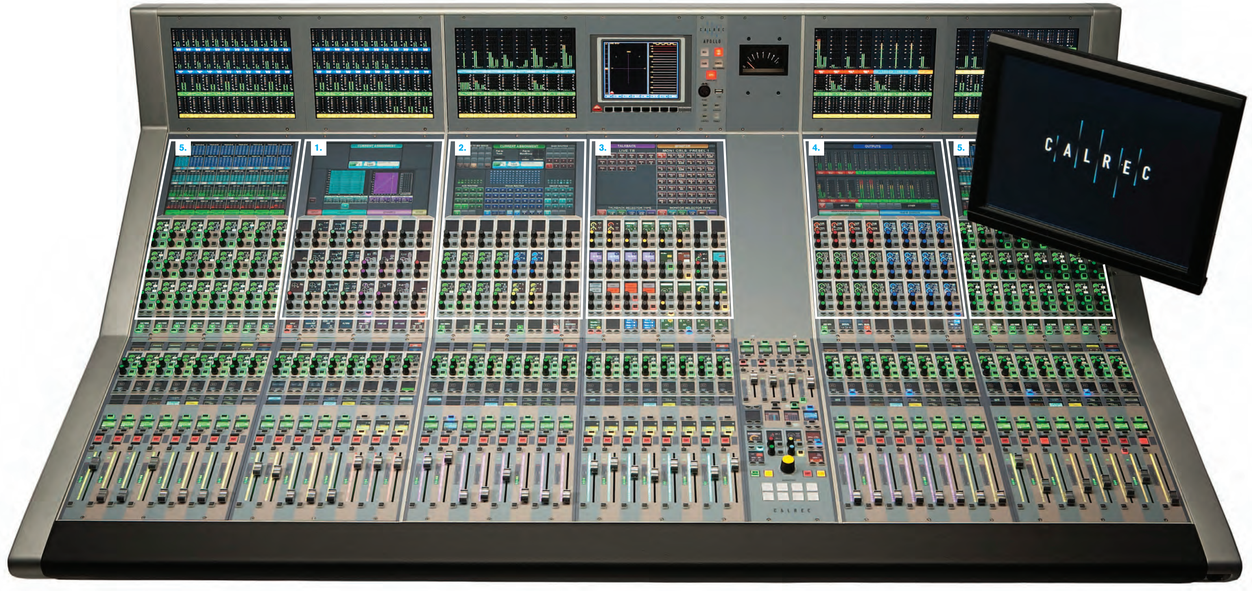
1. Inp/EQ-Dyn Panel
This panel layout contains controls relevant to Input, EQ, Dynamics processing for the currently assigned path.

2. Send-Routes Panel
This contains controls for routing the currently assigned path to auxes, tracks, groups, mains, direct outputs and mix minus busses. Also provides pan controls and allows interrogation and reverse routing of busses.

3. Monitor Panel
Monitor Mode provides additional functionality to the dedicated monitor panel. This could include the configuration of monitor pre-selectors or the setup of talkback groups. It also allows multiple operators access to their own set of monitoring controls.

4. Output Panel
Outputs Mode provides controls for manipulating output paths such as mains, tracks, auxes and groups. Control cells provide functionality, while the TFT screen provides comprehensive metering information.

5. Wilds Panel
Wilds Mode arranges the panels into vertical strips, providing quick access to wild controls for each fader.



Whatever the developing requirements of HD broadcast, Calrec's Bluefin2 processing engine will keep you on the air and sounding great.

Hydra2

Hydra2 is the Apollo's backbone, linking the control surface to an 8192² router and on to more complex networks if required.

We call this a network rather than routing matrix to reflect the sophisticated nature of the control software. Hydra2 is adaptive and intelligent, automatically recognizing changes to the network and updating all its clients. This means that the audio network can be reorganized with no manual intervention; new resources are available to console operators just seconds after they are plugged in.

With up to 512 bi-directional signals per copper or fiber connection, Hydra2 offers true '1-to-N' routing with about half the connection latency of the original Hydra network. In fact, a network's topology may be designed to meet the specific requirements of the broadcast facility, cutting installation costs and ensuring future flexibility.

When all elements on the network talk to each other, it can be very liberating.

Hydra2 allows the construction of complex routing networks for broadcast production while keeping it simple – with control software which transparently organises all routing, Hydra2 is extremely user friendly.

Bluefin2

Bluefin was the world's first implementation of Field Programmable Gate Array (FPGA) technology for full DSP processing, and changed the game for DSP provision. Bluefin provided enough processing on one DSP card to power an entire mixing console running surround-sound productions.

Bluefin2 is the next generation and has been designed for surround operation from the outset. It gives the Apollo console a staggering 1020 channel processing paths.

As you would expect from Calrec, all these features are available irrespective of the processing load on other channels, as channel resources are not shared across the console as a whole.

And of course, system resilience is always reinforced with a second Bluefin2 card in each 8U Apollo rack - it's like having another console as a hot spare.

Whatever the developing requirements of HD broadcast, Calrec's Bluefin2 processing engine will keep you on the air and sounding great.

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Apollo specifications & benefits

Calrec Audio Ltd
Nutclough Mill
Hebden Bridge
West Yorkshire
HX7 8EZ
England UK

Tel +44 (0)1422 842159
Fax +44 (0)1422 845244
Email enquiries@calrec.com

Channel Facilities

- 1020 channel processing paths
- Up to 16 x stereo or 5.1 surround main outputs*
- Up to 48 x mono, stereo or 5.1 surround audio groups*
- 96 x multi-track busses for IFB or recording
- 4 x track sends per path
- 48 x auxiliary busses
- Up to 4 x Direct Outputs/Mix Minus sends per path
- Direct outputs can be pre-EQ, pre-fader or post-fader
- 3 x independent user sections with independent monitoring
- All channels and groups have 6-band parametric EQ
- All channels, groups and mains have full dynamics
- Side Chain EQ/Filters
- 256 x Inserts
- Up to 2.73s per Output from a pool of 256 channels
- Up to 2.73s per Input from a pool of 256 channels
- A total of 78 minutes delay
- 12 fader layers, each with its own A and B paths
- 8 x Automixers

* from a Mains/Group pool of 128 resources

Networking

- Integral 8192² router
- 16/32 Router ports
- All I/O provided over Hydra2 network via a comprehensive range of Hydra2 I/O boxes
- Cat5e or fiber connectivity

Resilience

- Highly resilient – all modules are hot-pluggable with automatic redundant PSU, DSP, Control processor, Router module, I/O Expansion module
- Independent DSP operation ensures audio continuity in the event of a PC or control reset
- Low power consumption and heat generation

Designed and produced by Rees & Company.

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