CALREC

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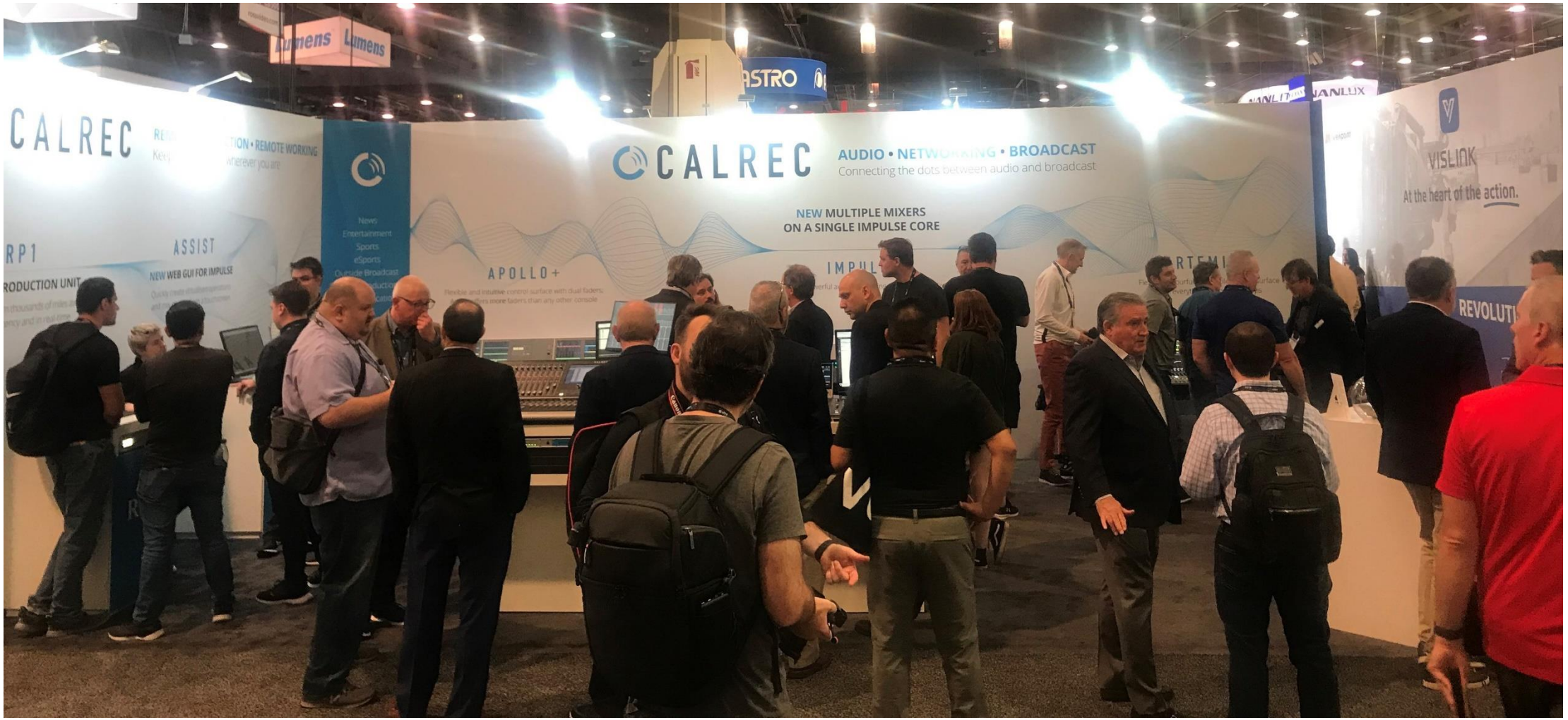
Calrec News from NAB 2022



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Calrec Headquarters
Hebden Bridge, West Yorkshire

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Calrec HQ - Nutclough Mill

Where it Began

The Beginning

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History

Calrec Audio formed

1960s

First contract with the BBC

1970s

World's first surround microphone

World's first stereo broadcast console

1980s

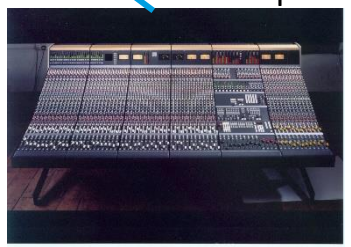
Broadcast specialists

World's first assignable console

World's first digitally-controlled analogue console

All-digital consoles

1990s



First sales into USA

2000s

Bluefin

World's first FPGA audio processor

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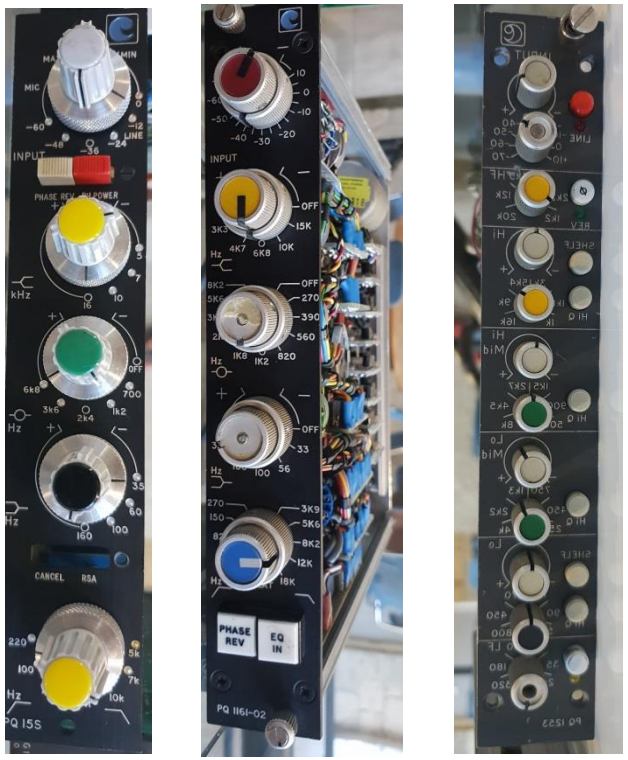
Musical Heritage

- Calrec UA8000 installed and used in ABBA’s famous POLAR studios

Musical Heritage

- Thorough knowledge of musicality, EQ, Mic amps.



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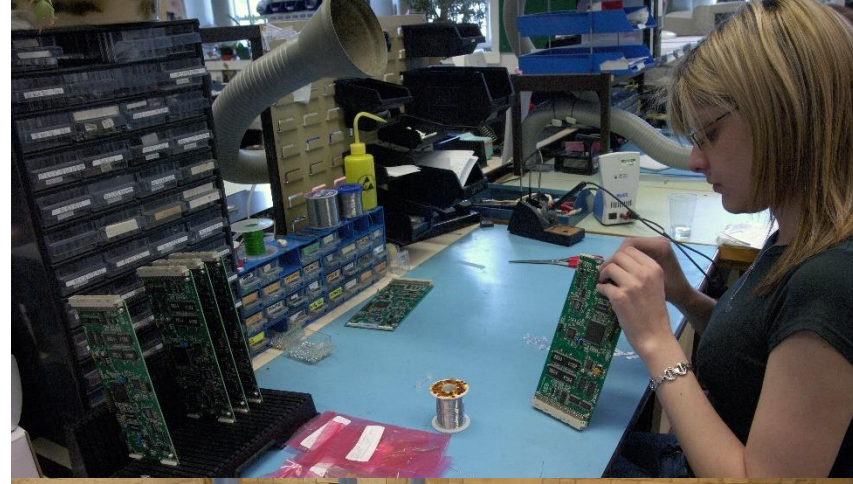
Calrec Today

- 140 employees
- Large investment in R&D – over 40% of staff
- Design and manufacture in the UK
- Global after sales support coverage 24/7
- Averaging 10% growth year on year



Audiotonix

ALLEN&HEATH

CALREC

DiGiCo

DiGiGrid

GROUP ONE LIMITED

KLANG TECHNOLOGIES

Solid State Logic
OXFORD • ENGLAND

SOUND DEVICES

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Product Range

CALREC

Console Range

APOLLO

ARTEMIS

IMPULSE

CALREC

Console Range

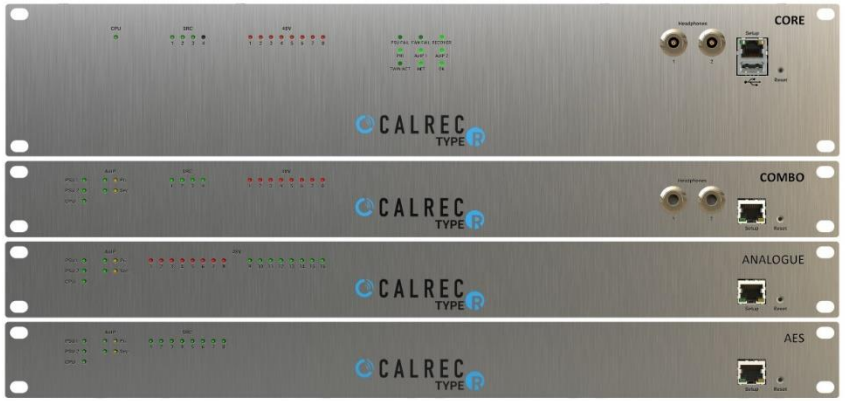
SUMMA

brio·36

CALREC

Console Range

TYPE R



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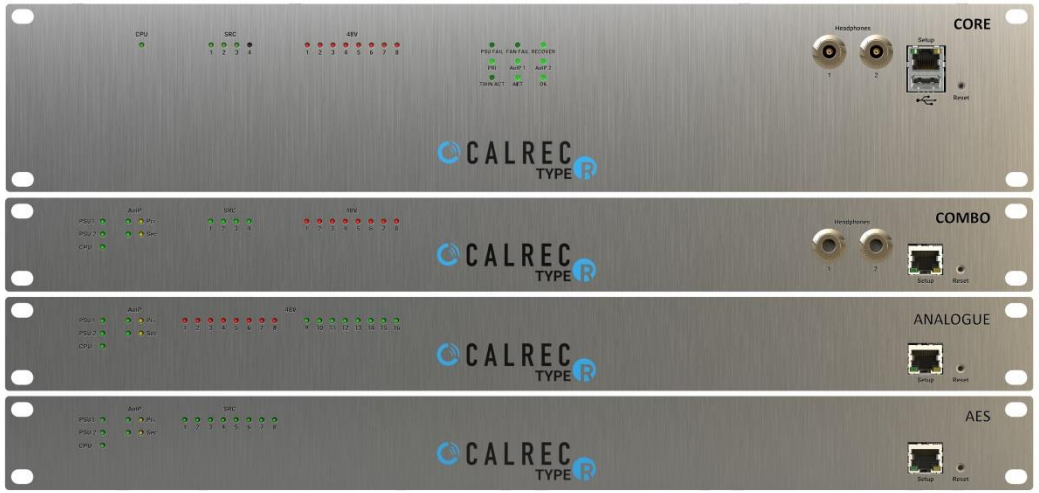
IP Processing Cores

IMPULSE



TYPE R

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Blu3fin

- FPGA Technology
- Up to 4000 channels and 1000 buses on one card
- License-based DSP
- Next Generation Audio - immersive signal path
- Multi-console systems

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ImPulse Core – Bluefin 3

- Bluefin 3 has increased Input Channel leg capacity
- Supports 3D “Immersive” software for “NGA” (Next Generation Audio).
- Mono, Stereo, 5.1 , 5.1.2 , 5.1.4 , 7.1 , 7.1.2, 7.1.4 paths
  - Input Channels
  - Groups (+ 0.0.4 Groups)
  - Main paths
  - Monitoring & Metering.
  - All path formats can coexist
    - Flexible downmix and surround panning between formats.
- Height & 3D pan controls are provided
- Includes additional Main & Group leg capacity

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ImPulse Core – Bluefin 3

- ImPulse is capable of running 4 x 1,122 license packs, each with 1,122 channels and 432 busses; this is a total of 6,216 paths.
- Instant changes to configuration: DSP, Busses, Channels. No need to re-load or save.

- ImPulse is fully modular as well as providing a 2nd box for redundancy, so if the control board of ImPulse failed, the 2nd core would take over and the control module in the primary core could be swapped for a spare, meaning redundancy is restored very simply.

- Map any surface to any core. This is managed through VLAN setups and is achievable with software defined networking.

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ImPulse Core – Scaleable

Powerful and scalable DSP platform

- Licensable DSP allows for:
  - 256, 384, 512, 768 or 1166 input channels
  - Total DSP: 432, 672, 800, 1056 or 1458 paths
  - Upgradable to larger pack sizes in the field
  - Up to 6216 total Full DSP input channels
- Licensable Immersive Audio features
- Upgrade path for current Apollo & Artemis customers

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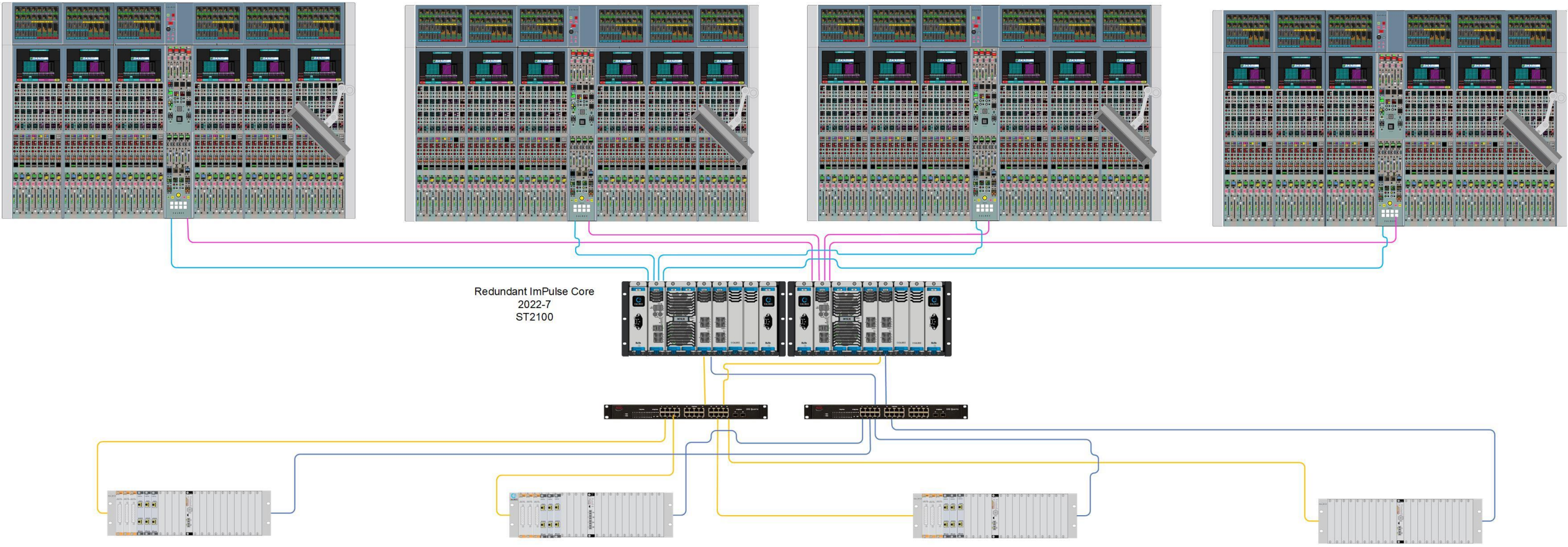
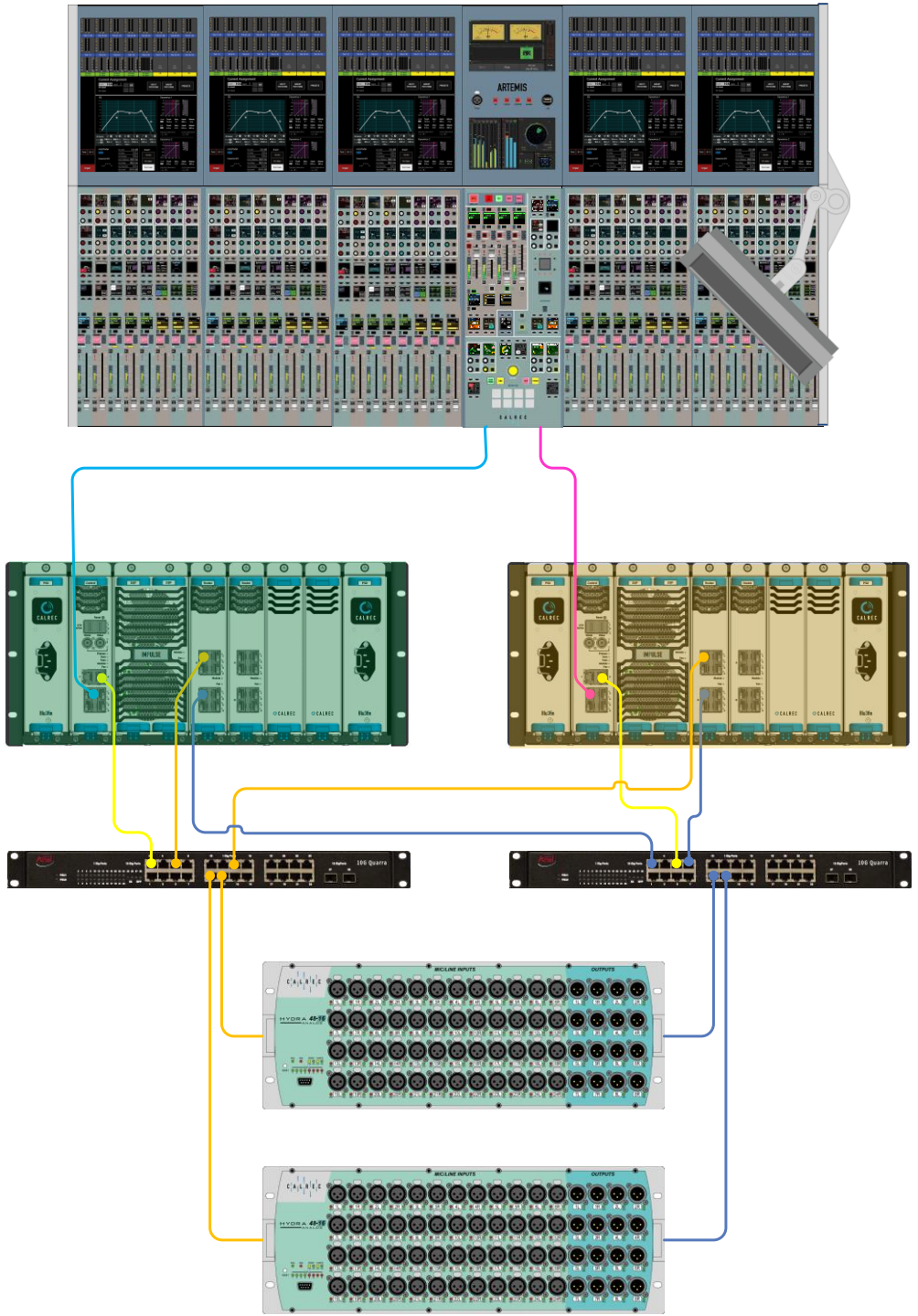
ImPulse Core – Effecient



4 x Existing consoles
ImPulse Core
Independent

Artemis+ (ImPulse)
Redundancy Scheme

3 Levels of redundancy



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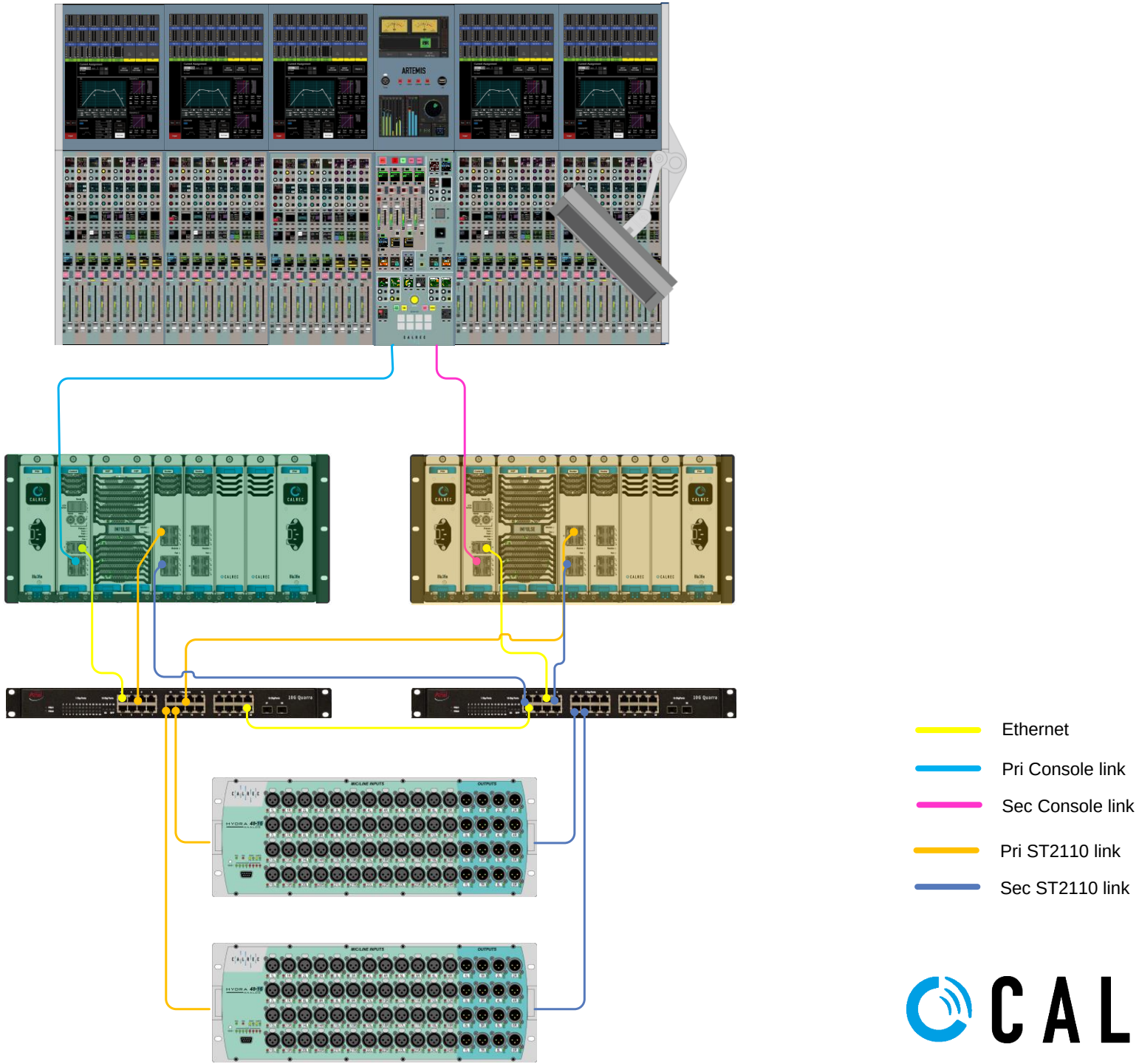
Artemis+ (ImPulse)
Redundancy Scheme

3 Levels of redundancy

Level 1:-
ST2110, 2022-7



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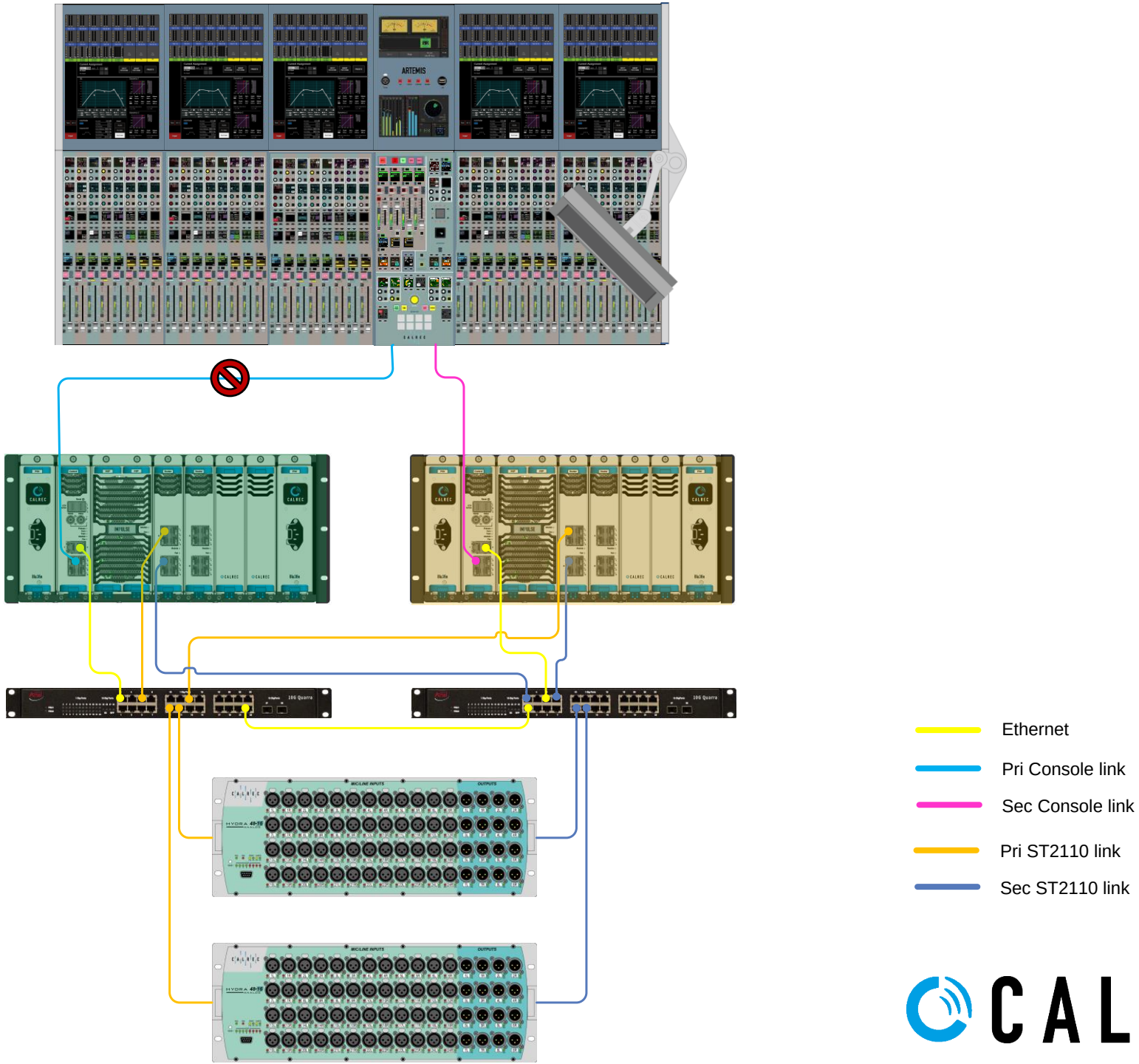
Artemis+ (ImPulse)
Redundancy Scheme

3 Levels of redundancy

Level 2:-
Surface connection

Failure does NOT trigger
Core hot-swap

Core redundancy is
retained



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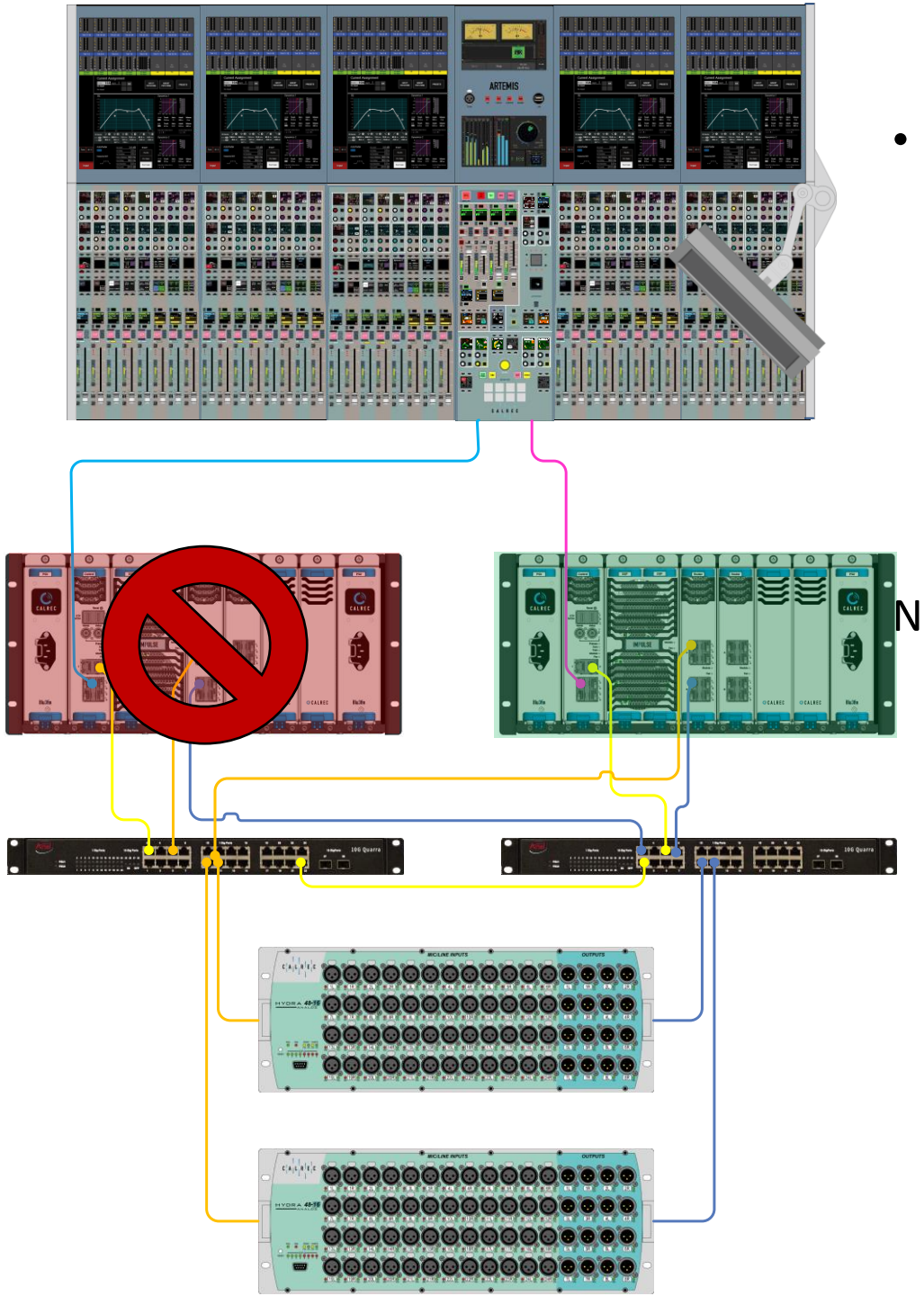

- Upon hot-swap:
  - Primary Core will be forced to stop transmitting streams
  - Secondary Core becomes active
  - Start sending the same streams to the same multi-cast addresses

Note: This is multicast streams

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Virtual Production

RP1

VP2

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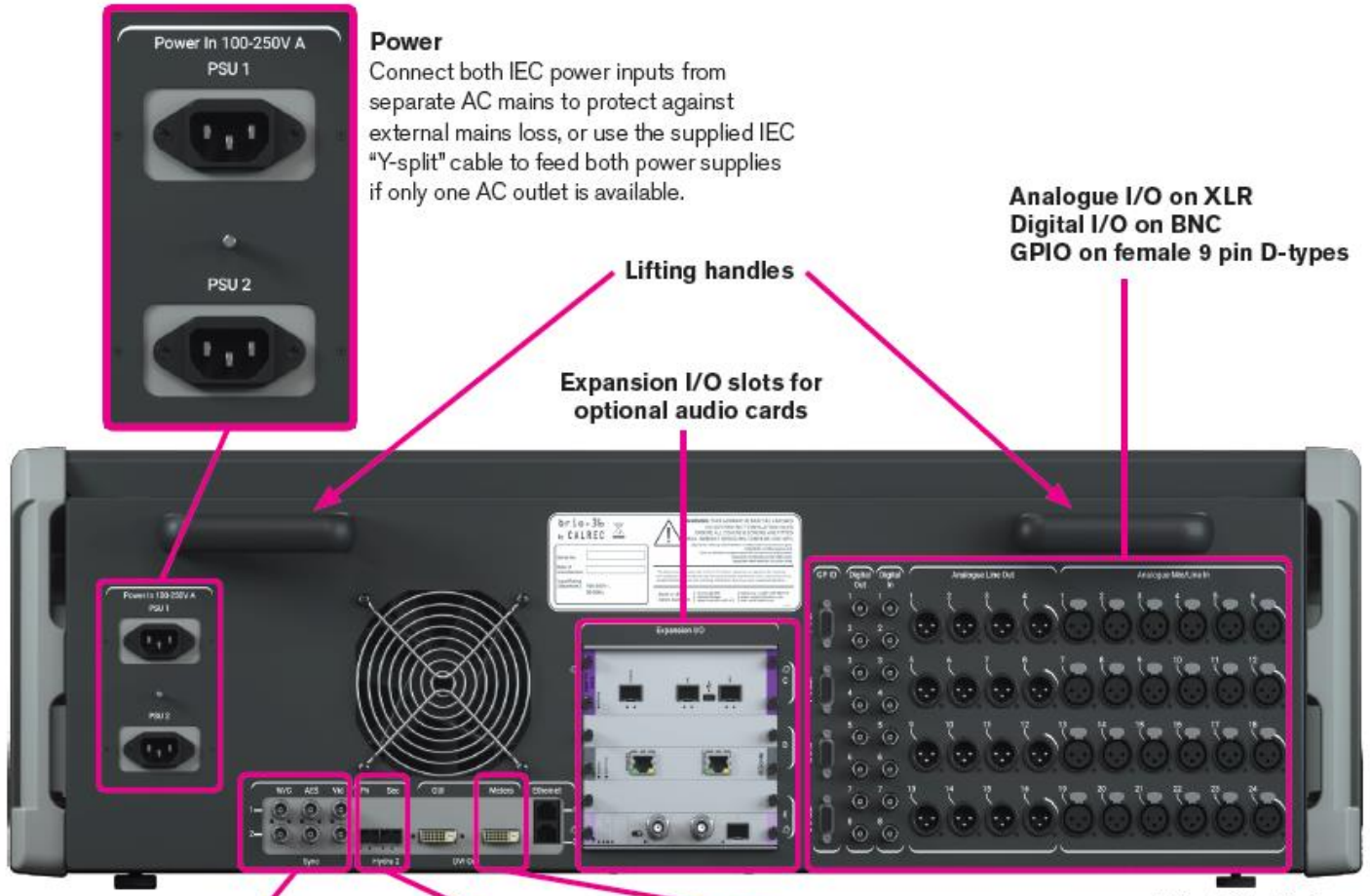
brio.36

CALREC

brio



Sync Inputs

Hydra2 connections for extra I/O

Meter Display

ALREC

brio.36 DSP paths

- **96** DSP channels assignable as mono, stereo or 5.1 **Input Channels**.
- **36** DSP channels assignable as mono, stereo, or 5.1 **Mains or Groups**.
- **24** DSP channels assignable as mono or stereo **Auxes**.
- **96** DSP channels assignable as **Direct**, or **Mix-Minus outputs**.
- **96** DSP channels assignable as **Inserts**.

Like other Calrec products, DSP allocations do not need to be decided during initial setup. Paths can easily be configured and changed during use. Additionally, DSP resources are not compromised between input channels and output busses.

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BRIO 12

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Type R – IP based console

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Type R

Radio / Small TV

- Native AES67 console
- Fully licensable product
  - Common hardware for several product
  - Fully upgradeable
- Multi-console core
  - One core can run three mix engines
- Surface via COTS POE+
- Fully configurable surface

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Type R

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Type R

Panels can be configured Horizontally

Or vertically

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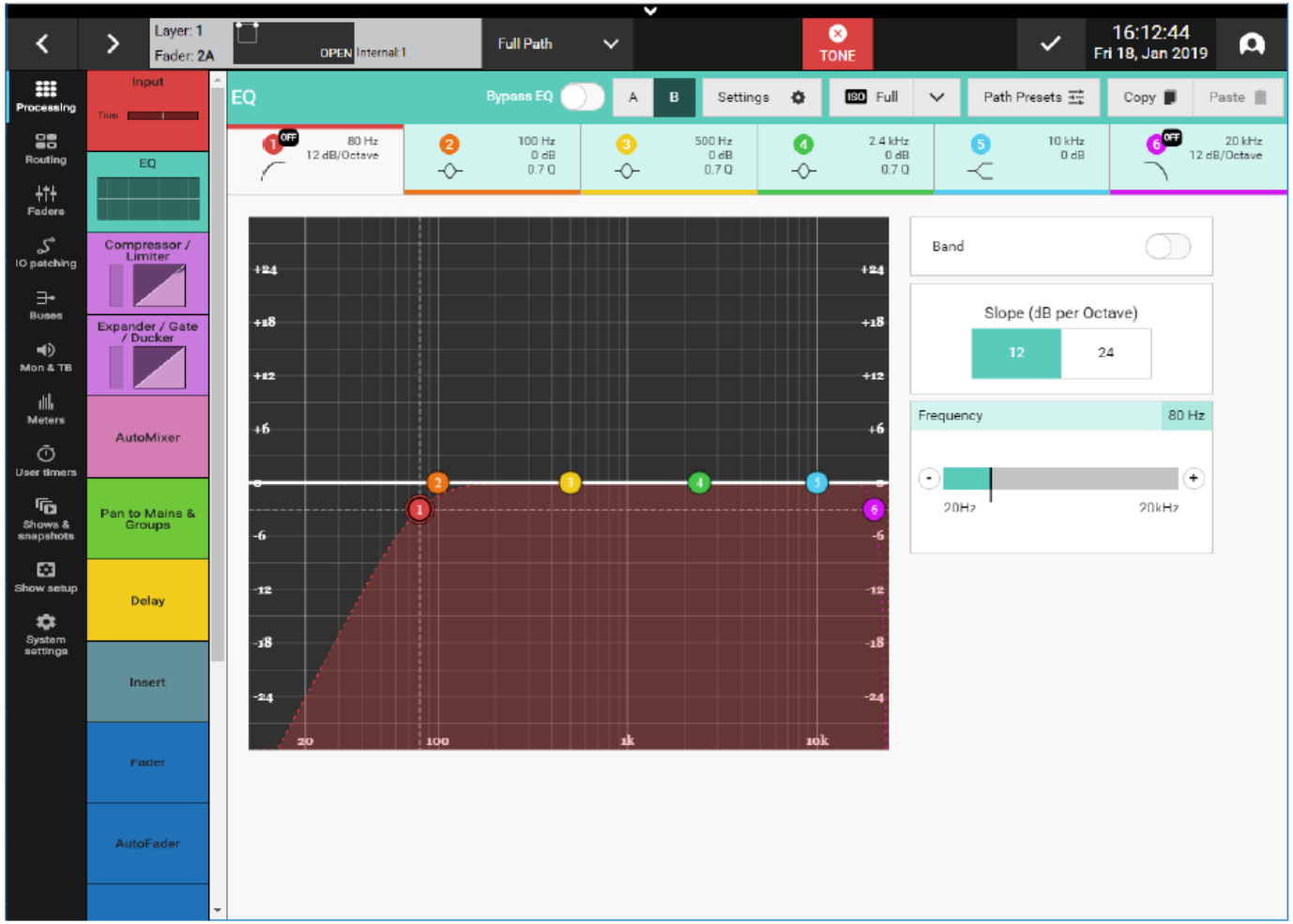
Calrec Assist – Expansive Processing Controls

- Processing tabs control
  - EQ
  - Dynamics
  - Auto Mix
  - Pan
  - Delay
  - Mix Minus & Direct Outputs
- Routing tab controls
  - Auxiliary routing
  - Group routing
  - Main Routing



Calrec Assist Assist App

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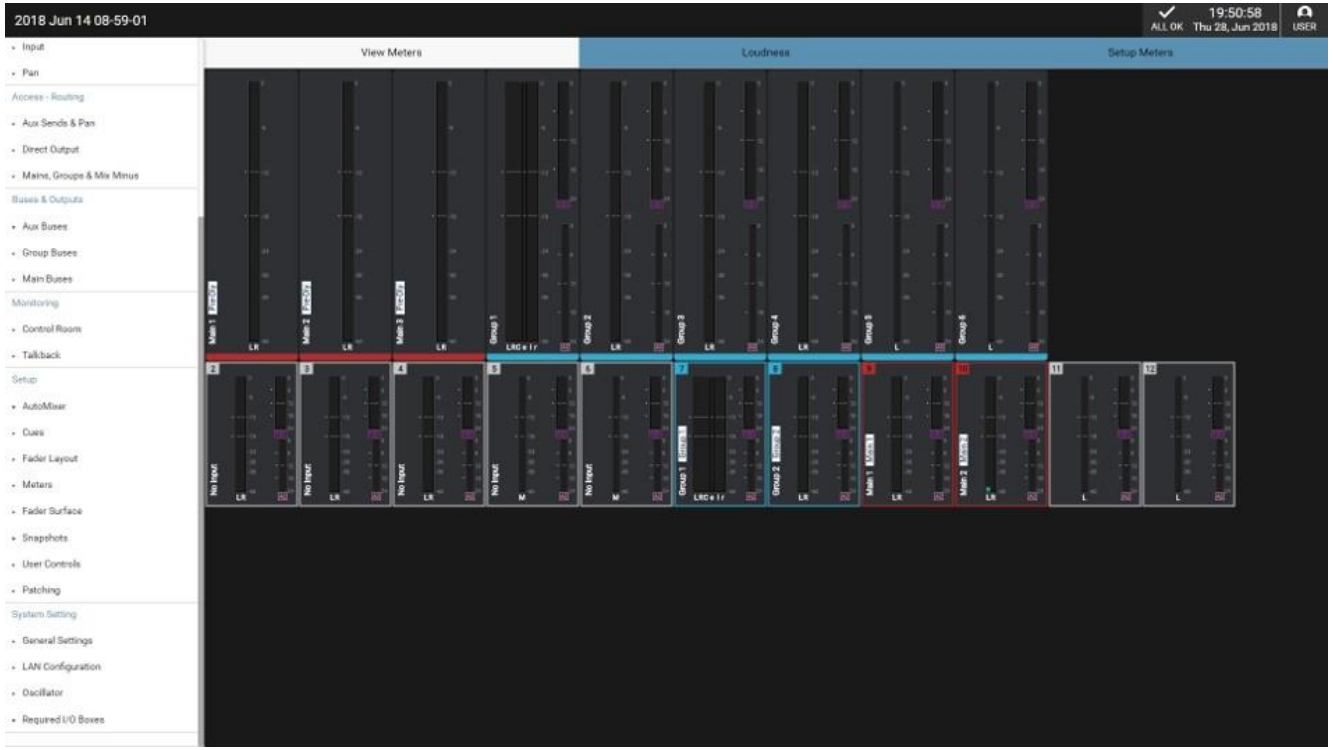
Calrec Assist - Metering

- Type R offers the ability to select and display any of the available sources and buses on a single screen
- Loudness metering is available, with start pause and reset
- The meter screen layout is user configurable



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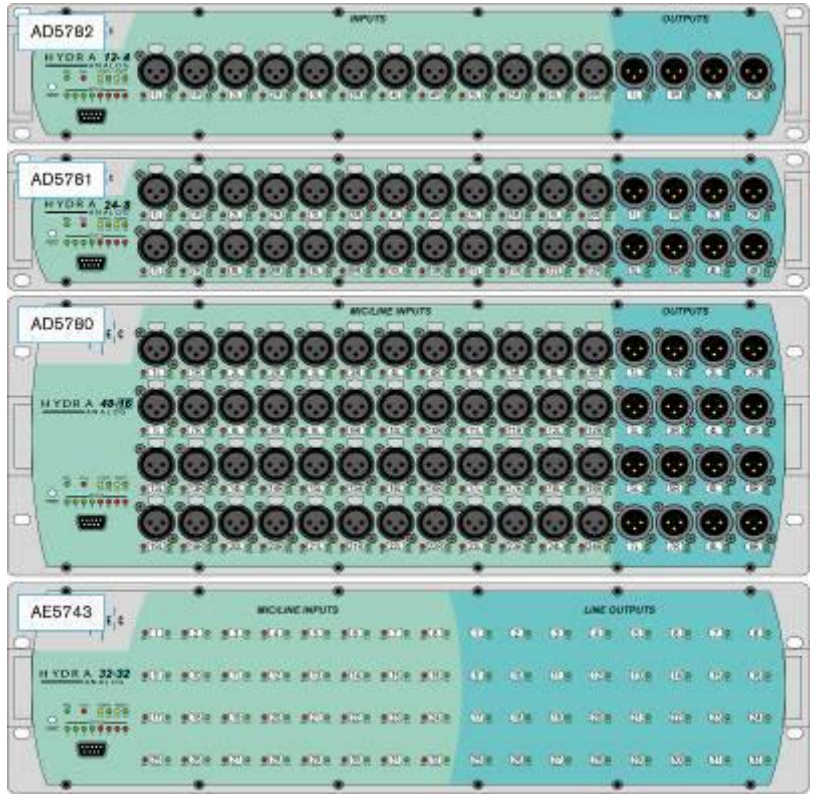
Analogue I/O Frames

12 mic/line inputs, 4 line outputs, XLR

24 mic/line inputs, 8 line outputs, XLR

48 mic/line inputs, 16 line outputs, XLR

32 mic/line inputs, 32 line outputs, EDAC



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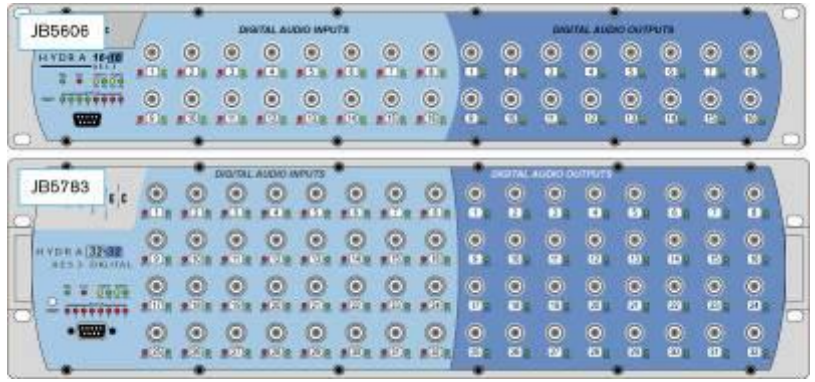
Digital I/O Frames

16 AES3 inputs, 16 AES3 outputs, BNC

32 AES3 inputs, 32 AES3 outputs, BNC

(rear connections also available)



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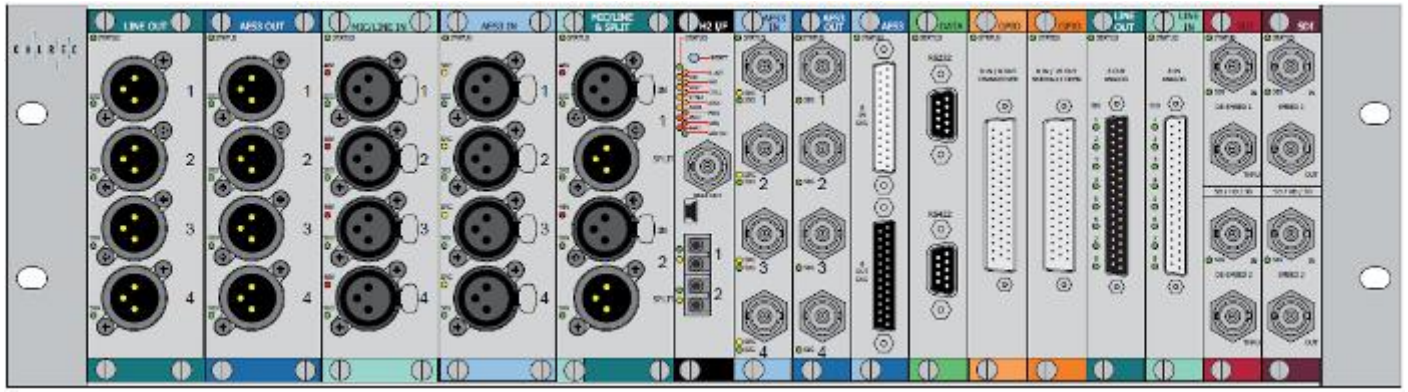
Modular Stage Box



Interface Cards available Q1 2018

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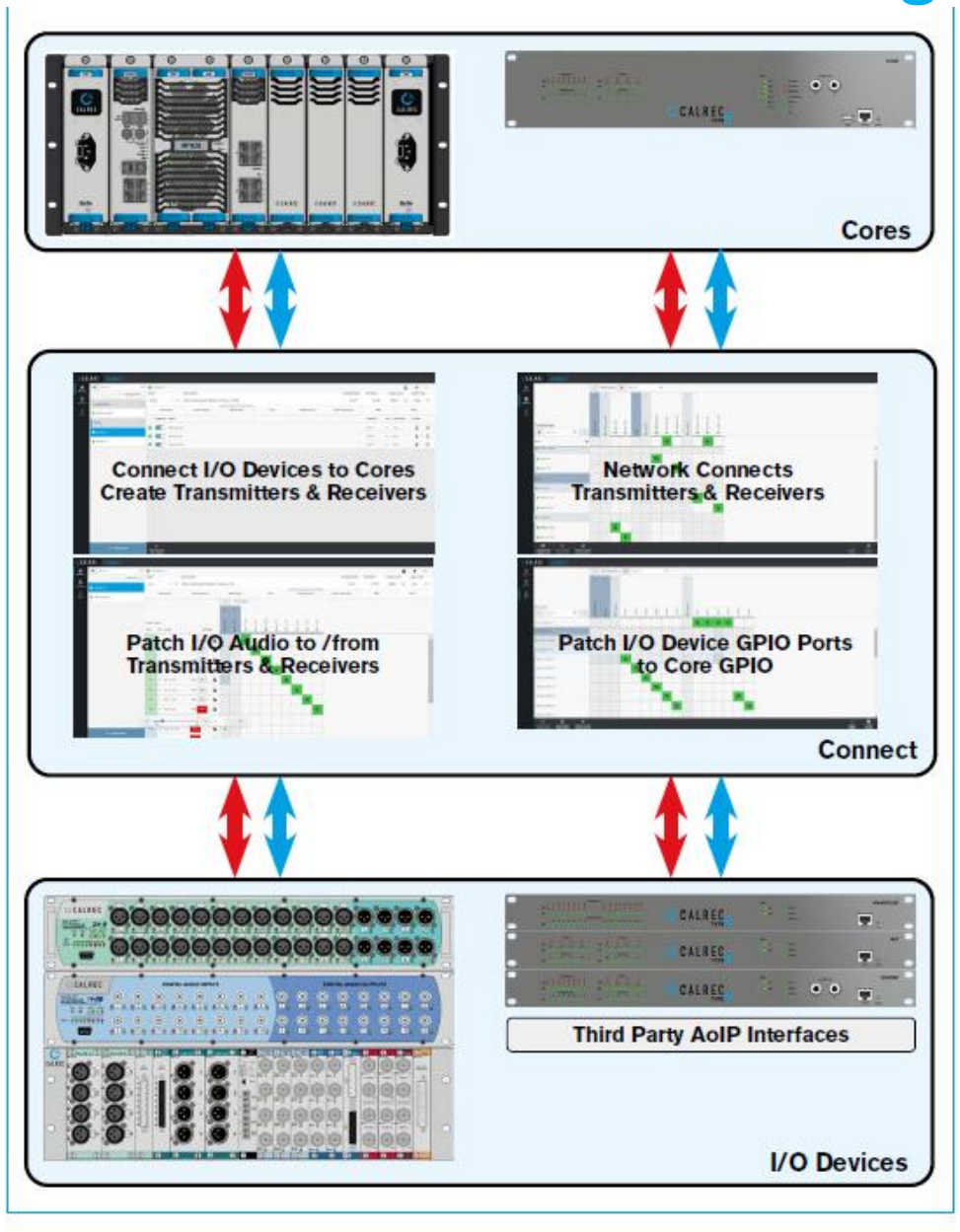
Calrec Connect Stream Manager

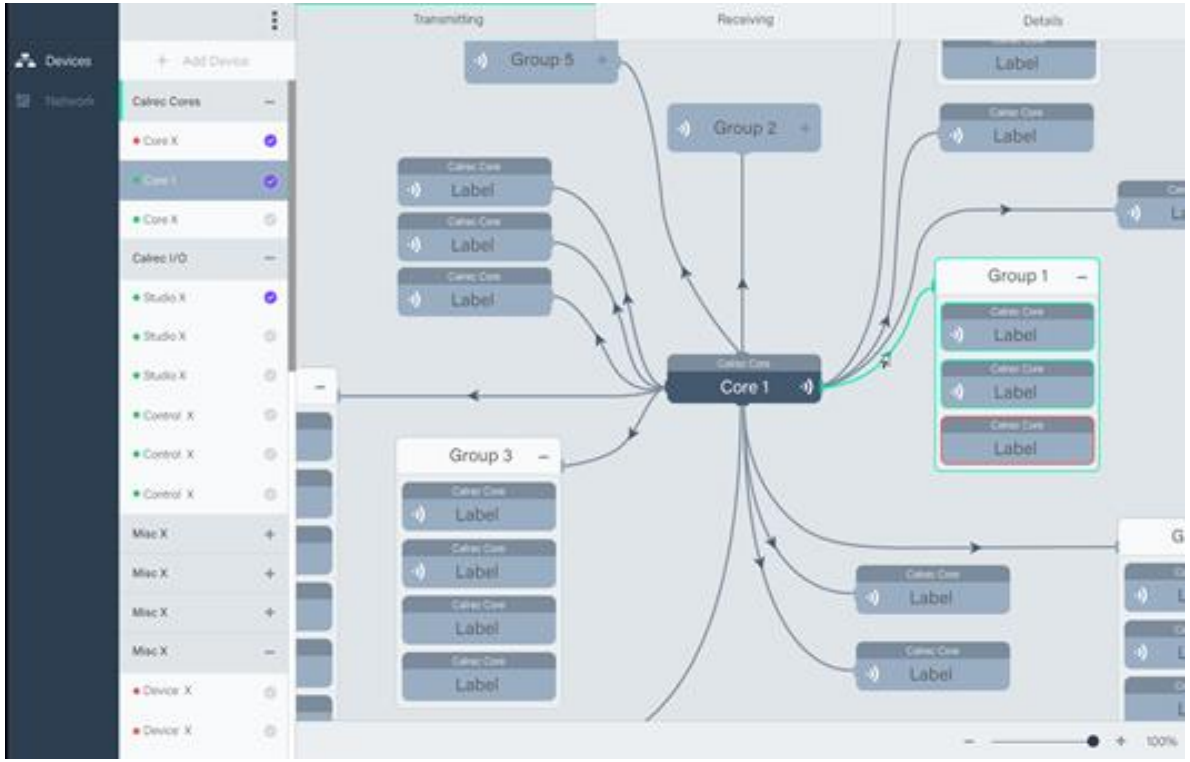
Calrec IP stream manager
Web based App
Configures Calrec and 3rd party IP streams
Simple user interface

Supports ImPulse, Type R and Gateway.



Calrec Connect Stream Manager

IP connection



- **Identifies streams & devices on a network**
  - **NMOS IS-04, IS-05, mDNS, AES70, SAP or Rest APIs**
- **Presents all devices on network to the user**
- **Displays complex information simply to eliminate the need for networking knowledge**
- **Make, break & change stream connections**
- **Provides network diagnostics**
  - **Bandwidth utilisation, dropped packets**
- **Creates GPIO style logic connections between devices**
- **Provides device level control**
  - **E.G. Mic pre-amp gain & 48V**

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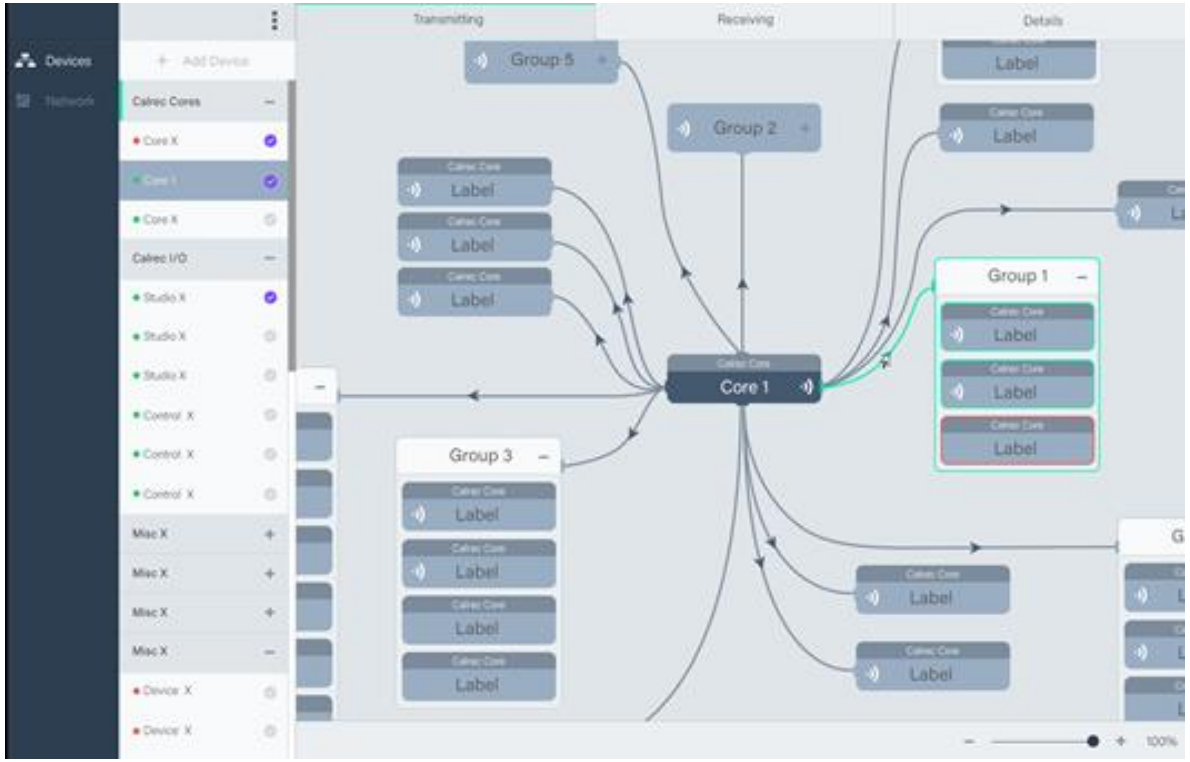
Calrec Connect Stream Manager

IP connection



- Can automatically assign multicast IP addresses.
- Paste in SDP from 3rd party transmitters
- Port – channel routing for streams.
- Does not require I.T. knowledge to use.
- Detailed stream information is hidden but can be accessed.

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BBC News (New Broadcasting House), UK

CALREC

Game Creek Video
USA
Game Creek
Game Creek
CALREC

Lyon Video USA

NEP USA
DENALI
DENALI
CALREC

TTC Ostankino, Apollo, Artemis (42)

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Installations – Antena Romania – 2 x Summa, 1 x Artemis, 1 x Brio

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TV2 Hungary 2 x Artemis, Summa, Brio

Gama, Croatia - Artemis

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Serbia – PRVA Artemis

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Al Jazeera Balkans, Artemis, Summa

CALREC

1+1 Media, 2 x Artemis

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Thank you!

- Michael.Reddick@calrec.com
- Felix Nevrela felix.nevrela@fint.cz

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