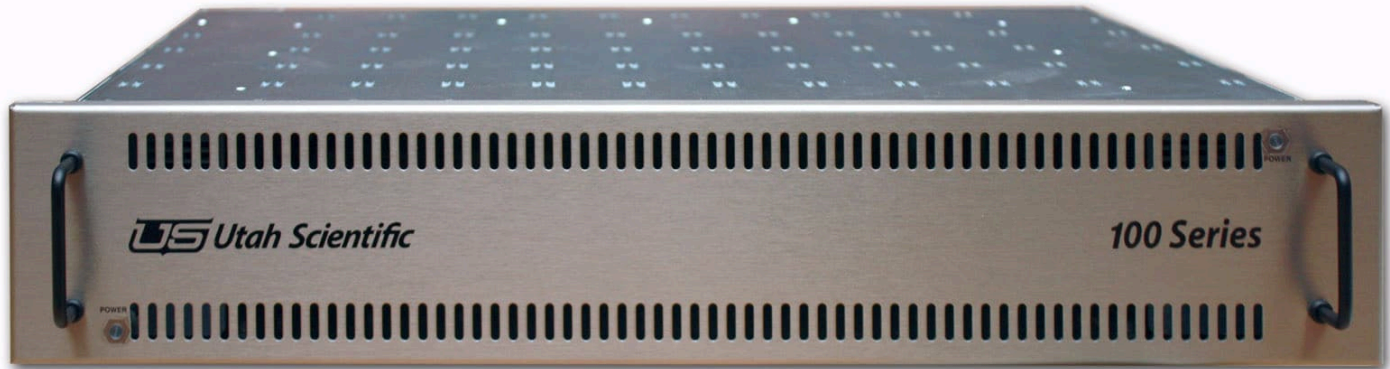




TECHNICAL GUIDE

UTAH-100/3 Modular Distribution Amplifiers

Reliable Signal Distribution for Analog and Digital Facilities

The UTAH-100/3 family of Distribution Amplifiers provides an economical and dependable means to create multiple copies of both analog and digital video signals. A 2RU frame with dual power supplies and up to ten hot-swappable modules scales to the exact configuration each facility requires.

PRODUCT OVERVIEW

UTAH-100/3 Modular DA Frame

Distribution amplifier frames are straightforward in concept but unforgiving in execution: when a frame loses power or a module fails mid-broadcast, every downstream destination tied to that signal goes dark. The UTAH-100/3 addresses that directly. Two independent power supplies occupy dedicated slots in the 2RU frame, so a single supply failure does not interrupt operation. Up to ten DA modules fill the remaining slots, each paired with a matched rear-panel assembly that aligns I/O connectors to the module's exact configuration.

Each power supply operates at +12V DC with an adjustable output and accepts 100–240VAC input, making the frame compatible with facility power worldwide. Onboard LED indicators flag Power, Temperature, and fan conditions, giving operations staff an at-a-glance status check without pulling the frame. Per-module power draw is 50mA, keeping total frame consumption well within standard rack power budgets even at full ten-module population.

The frame fits any standard 19-inch equipment rack. At 2RU and 13 inches deep, it leaves adequate rear clearance for cabling in typical broadcast rack depths. The operating temperature range of 32–104°F (0–40°C) covers control room, production truck, and technical operations center environments without requiring supplemental cooling.

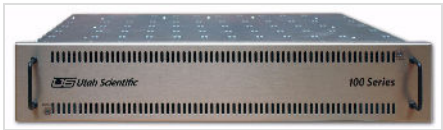


Fig. 1 — UTAH-100/3 2RU modular DA frame with dual power supplies and up to 10 module slots.

PHYSICAL & POWER SPECIFICATIONS

Parameter	Value
Width	19 in (48.26 cm)
Depth	13.045 in (33.13 cm)
Height	2RU — 3.47 in (8.81 cm)
AC Input	100–240VAC, 50/60Hz, 1.9A
DC Output (per supply)	+12V DC, 8.3A, 100W MAX
Per-Module Consumption	50 mA
Operating Temp.	32–104°F (0–40°C)

MODULE CONFIGURATIONS

The UTAH-100/3 frame accommodates up to ten modules simultaneously, and each module ships with a matching rear panel assembly. Three signal families cover the distribution needs of most mixed-signal broadcast and production environments. Every digital module includes cable equalization; reclocking is optional, allowing procurement to match the configuration precisely to the signal path requirement.

SIGNAL FAMILY	CONFIGURATION	I/O FORMAT	KEY FEATURE
SD Digital Video	Single	1×8	Equalization + Optional Reclocking
SD Digital Video	Dual	1×4 / 1×4	Equalization + Optional Reclocking
SD Digital Video	Triple	1×2 / 1×2 / 1×2	Equalization + Optional Reclocking
HD/3G Digital Video	Single	1×8	Equalization + Optional Reclocking
HD/3G Digital Video	Dual	1×4 / 1×4	Equalization + Optional Reclocking
HD/3G Digital Video	Triple	1×2 / 1×2 / 1×2	Equalization + Optional Reclocking
Analog Audio	Single	1×8	Balanced I/O
Analog Audio	Dual	1×4 / 1×4	Balanced I/O

OPERATIONAL BENEFITS

Why the UTAH-100/3 Works for Facility Managers and Operations Teams

Mixed-signal facilities routinely carry SD video, HD/3G video, and analog audio through the same infrastructure. Sourcing separate distribution products for each signal type fragments the vendor relationship, complicates spares management, and adds rack real estate that most operations budgets cannot absorb. The UTAH-100/3 addresses all three signal families within a single 2 RU frame, with module configurations chosen at the time of purchase.

VENDOR CONSOLIDATION

A single frame handles SD, HD/3G, and analog audio distribution. One vendor, one support relationship, one spare frame covers the full signal mix. That reduces procurement overhead and simplifies the annual maintenance conversation.

DUAL POWER SUPPLY REDUNDANCY

The 2 RU frame holds two independent power supplies. If one supply fails, distribution continues without interruption. This is not a software failover; it is hardware redundancy at the power level, eliminating the most common single point of failure in a DA frame.

MODULAR CAPITAL PLANNING

With capacity for up to ten modules per frame, procurement can populate the frame to match current requirements and add modules as signal counts grow. The chassis investment is protected; expansion is a module purchase, not a frame replacement.

LOW POWER, LOW THERMAL LOAD

At 50mA per module, the UTAH-100/3 draws minimal rack power. Lower power consumption reduces heat output, which directly reduces cooling demand. For dense rack environments, that difference shows up in energy costs and equipment longevity.



HD/3G: ONE CARD, JUMPER-CONFIGURABLE IN THE FIELD

The HD and 3G DA modules are the same physical card. Signal format is selected by a jumper on the card itself, which means a single spare module covers both HD and 3G positions in the frame. Operations teams carry fewer spare parts; transitioning a slot from HD to 3G as infrastructure evolves requires no new hardware purchase and no vendor call.

THE OPERATIONAL CASE

For facility managers weighing distribution infrastructure, the UTAH-100/3 reduces the number of product families to manage, lowers the risk of a power supply outage taking signals off-air, and keeps rack power budgets contained. The jumper-configurable HD/3G module further reduces spares inventory. Each of those outcomes corresponds to a line item in an operations review; the UTAH-100/3 addresses all of them within a single 2 RU chassis.

EXAMPLE FACILITY SETUPS

Three Deployments, One Frame

SCENARIO 1 — MUNICIPAL GOVERNMENT PRODUCTION FACILITY

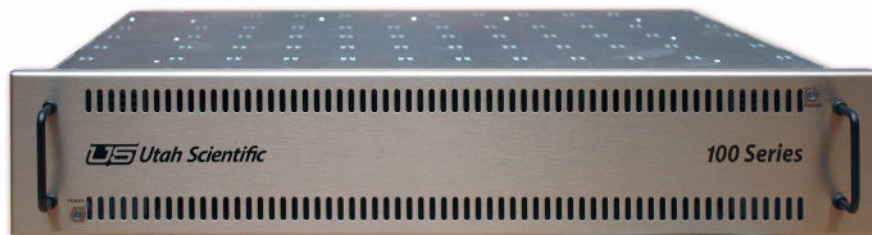
A city public-access facility produces live council meetings and recorded programming for distribution to a control room, a streaming encoder, and a local cable headend. Source signals are SD digital video from a small production switcher and balanced analog audio from a mixing console. The facility loads the UTAH-100/3 frame with two SD Digital Triple 1×2 modules (covering three discrete video sources, each split to two destinations) and one Analog Audio Dual 1×4 module (distributing left and right audio program buses to four destinations each). All nine destination feeds arrive at their endpoints without additional outboard hardware. Rack footprint stays at 2 RU.

SCENARIO 2 — MID-SIZE BROADCAST FACILITY, CONTRIBUTION DISTRIBUTION

A regional broadcaster receives HD/3G contribution feeds from remote sports venues and needs to deliver them simultaneously to four edit suites, two on-air transmission paths, and a monitoring wall. Four HD/3G Digital Dual 1×4 modules cover four independent contribution signals, each fanned to four destinations. Equalization and optional reclocking on each module preserve signal integrity across the facility's cable runs. The dual power supplies in the frame maintain feed continuity; a single PSU fault does not interrupt any active distribution path.

SCENARIO 3 — HYBRID FACILITY DURING PHASED EQUIPMENT TRANSITION

A production facility mid-way through an HD upgrade still operates legacy SD cameras alongside new HD/3G sources. Rather than maintaining two separate distribution frames, the facility populates a single UTAH-100/3 chassis with a mix: three SD Digital Single 1×8 modules serving legacy monitoring and recording destinations, and two HD/3G Digital Single 1×8 modules serving new edit and playout infrastructure. As HD sources replace SD sources over time, SD modules are swapped out individually. The rear-panel assembly for each module slot is matched to the installed module, so reconfiguration requires no changes to rack wiring beyond the affected slot.



CONFIGURATION PLANNING

Planning Your UTAH-100/3 Configuration

Ordering the wrong module mix is the most common pre-deployment mistake with modular DA frames. The three planning areas below address the decisions that determine whether a configuration works on day one and accommodates growth without a chassis replacement.

SIGNAL PATH MAPPING

List every source and count how many destinations each signal must reach. Select a module configuration (1×8, 1×4, 1×2) where the output count meets or exceeds the destination count per source, with at least one output held in reserve.

POWER BUDGET

The dual power supplies deliver up to 100W maximum combined output at +12V DC, 8.3A per supply. Each module draws 50mA. Ten fully loaded modules consume 500mA total — well within the 8.3A ceiling — but confirm this against your actual module mix before finalizing the order.

REAR-PANEL ASSEMBLY MATCHING

Each module slot ships with a rear-panel assembly matched to that module's I/O configuration. If you anticipate swapping an SD module for an HD/3G module later, confirm with Utah Scientific whether the rear-panel assembly is interchangeable before installation — cable plant changes after the fact are a rack-wiring cost that rarely appears in initial project budgets.

CONFIGURATION PLANNING CHECKLIST

- ☐ List all active sources and signal types (SD digital, HD/3G digital, analog audio).
- ☐ Count destinations per source including monitoring, recording, and future expansion.
- ☐ Select module format (1×8 / 1×4 / 1×2) to match output requirements with reserve.
- ☐ Tally power consumption at 50mA per module against the 8.3A per-supply ceiling.
- ☐ Confirm reclocking requirement for each digital signal path.
- ☐ Verify rear-panel assembly compatibility for any planned future module swaps.
- ☐ Confirm total module count does not exceed ten slots per 2 RU chassis.
- ☐ Plan rack position to allow airflow; verify operating temp does not exceed 40°C.

[REQUEST A DEMO](#)

See the UTAH-100/3 Configured for Your Facility

Every facility routes signals differently. The UTAH-100/3's modular frame accommodates SD, HD/3G, and analog audio distribution in a single 2 RU chassis — and the right module mix depends on your specific signal inventory and distribution requirements.

Reach out to the Utah Scientific team to walk through your configuration options or arrange a hands-on demonstration. With 50 years of broadcast infrastructure experience behind every conversation, you'll speak directly with engineers who know the product.

Request a Demo — info@utahscientific.com

☎ +1 (801) 575-8801

✉ info@utahscientific.com

🌐 utahscientific.com

📍 Salt Lake City, Utah USA