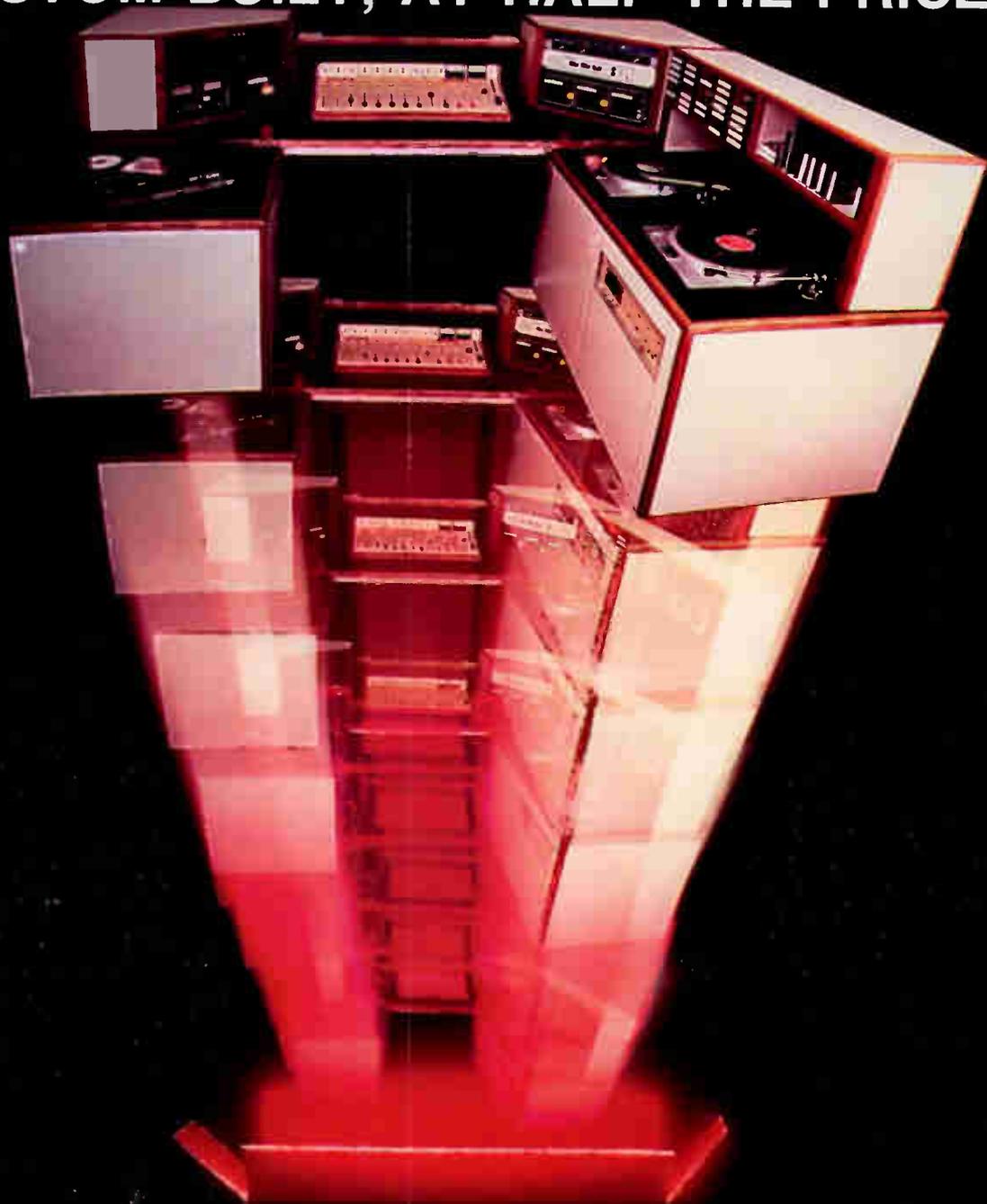


**ALLIED INTRODUCES YOUR NEXT STUDIO
MODULUX™ Cabinetry By ARRAKIS**
All The QUALITY, STYLE And DURABILITY OF
CUSTOM BUILT, AT HALF THE PRICE!



Delivered To You In DAYS,
Not WEEKS Or MONTHS



Via Fast, Low Cost U.P.S.
In Boxes Just Like This.

Here's Why We're Confident You'll Choose MODULUX Cabinetry For Your Next Studio.

MODULUX Is Better By Design.



Choose MODULUX by Arrakis for all the quality of custom cabinetry at *half the price*.

Until MODULUX studio cabinetry, you had to choose: You could pay high prices for strong and durable, well-finished custom-built cabinetry. Or you could pay less, and settle for considerably lower quality. Now there's a third choice, a better choice — MODULUX, built by Arrakis Systems exclusively for Allied Broadcast Equipment. MODULUX gives you all the quality of custom built cabinetry, at about half the price.

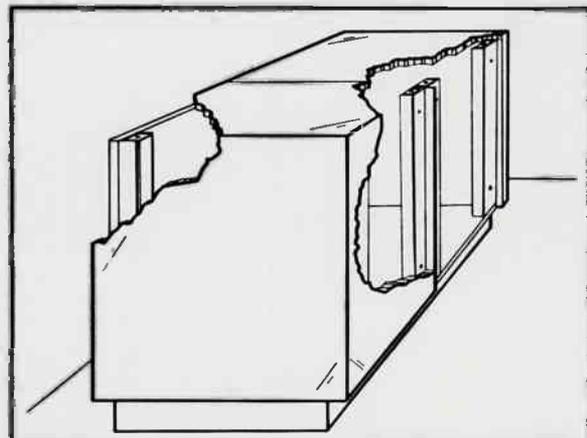
Why Quality Cabinetry Costs So Much (And Takes So Long To Get).

Most quality cabinets, even so-called modular units, are fabricated one-at-a-time. You tell the manufacturer what you want, and they make it up. It sounds like an expensive (and time-consuming) way to make a cabinet, and it is. (Just imagine how much a cart machine would

cost if *it* were made that way!) Finally, each fully assembled unit is boxed and trucked to you. But because the boxes are so large, they can't be sent by U.P.S. or express carriers. So you pay extra shipping charges, and delivery takes extra time.

How MODULUX Cuts The Price Of Custom Quality Cabinetry In Half.

There's no magic. Just common sense, plus a healthy dose of Arrakis ingenuity. You see, MODULUX cabinetry *is* custom quality but each cabinet *need not be* custom made. Arrakis has created a unique aluminum post internal frame and wood outer panel system for MODULUX. These standardized elements are produced in quantity and stocked in depth at the factory. From these basic elements, Arrakis can create most any cabinet configuration you desire. For example, you can specify any panel in any pedestal to be a fixed panel, access panel, or equipment rack panel, with standard EIA tapped mounting rails.



Cutaway view shows how Polybond wood panels bolt to rigid aluminum post internal frame.

MODULUX STANDARD

MODEL #	STUDIO CONFIGURATIONS	\$ LIST
ZX/PDT-30	PEDESTAL TABLE (left and right pedestals w connecting counter, without wire channel - 30" deep) -----	\$1,295
ZX/SHORT L	SHORT L -----	\$1,750
ZX/LONG L	LONG L -----	\$2,195
ZX/SHORT U	SHORT U -----	\$2,195
ZX/UNBALANCED U	UNBALANCED U -----	\$2,650
ZX/LONG U	LONG U -----	\$3,100

MODEL #	MODIFICATIONS TO STUDIO CONFIGURATION	\$ LIST
ZX/STNDUP	STANDUP HEIGHT UPGRADE- (from 30" to 34" high) -----	\$265
ZX/PDT-UP-36	TABLE DEPTH UPGRADE- (from 30" to 36" deep) -----	\$700
ZX/CC-1-45	TABLE KNEEWELL UPGRADE #1- (from 36" to 45" wide) -----	\$265
ZX/CC-2-77	TABLE KNEEWELL UPGRADE #2- (from 36" to 60" wide) -----	\$375

MODEL #	FREESTANDING PEDESTALS	\$ LIST
ZX/FP-1	SINGLE -----	\$450
ZX/FP-2	DOUBLE -----	\$900
ZX/FP-7	CUSTOM -----	\$450 per

MODEL #	OPTIONS	\$ LIST
ZX-WC-36	WIRE CHANNEL- (under 30"D x 36"W pedestal table) -----	standard
ZX/ERK-1	EQUIPMENT RACK KIT #1(place in pedestal SIDE panel-10RU)	\$125
ZX/ERK-2	EQUIPMENT RACK KIT #2 (place in pedestal END panel- 10RU)	\$250
ZX/ERK-3	EQUIPMENT RACK KIT #3 (under console rack-10RU) -----	\$250
ZX/CRT-1	CART RACK #1 (56 hole in any pedestal side panel) -----	\$149
ZX/CRT-2	CART RACK #2 (56 hole in any end panel) -----	\$149
ZX/DDU-1	DESK DRAWER UNIT #1- (3 drawer unit (1 file drawer) replaces a pedestal side panel and fills pedestal) -----	\$450
ZX/DDU-2	DESK DRAWER UNIT #2- (3 drawer unit (1 file drawer) replaces a pedestal end panel and fills pedestal) -----	\$450
ZX/DOR-1	DOOR #1 -(hinged with lock, 2 shelves, finished interior replaces any pedestal end panel and fills pedestal) -----	\$450

SHIPPING NOTE-

Average shipping weight and price per studio in the forty-eight contiguous United States is ...

Standard - 800 lb's avg
\$200-400

***NOTE 1-**

Tabletop Slope Equipment Racks' may not be used with 'Double Pedstal Bridges.'

***NOTE 2**

A series of 'Octagon' tables are available standard. Contact the factory for specific information.

ACCESSORIES

MODEL #	DESCRIPTION	\$ LIST
ZX/ERP-L-8RU	STANDARD TABLETOP EQUIPMENT RACK POD LEFT (14") --	\$349
ZX/ERP-R-8RU	STANDARD TABLETOP EQUIPMENT RACK POD RIGHT (14") --	\$349
ZX/ERP-L-12RU	STANDARD TABLETOP EQUIPMENT RACK POD LEFT (21") --	\$499
ZX/ERP-R-12RU	STANDARD TABLETOP EQUIPMENT RACK POD RIGHT (21") --	\$499
ZX/TT1	TURNTABLE ISOLATOR -----	\$199
ZX/TT2	TURNTABLE RECESS (Technics SL1200)-----	\$199
ZX/SLP	*TABLETOP SLOPE EQUIPMENT RACK (30 degrees, 21")-----	\$249
ZX/DPO-CT	STANDARD DOUBLE PEDESTAL BRIDGE (CART ONLY)-----	\$299
ZX/DPO-CT/CD	STANDARD DOUBLE PEDESTAL BRIDGE (SPLIT CART,CD's) --	\$349
ZX/DPO-CD	STANDARD DOUBLE PEDESTAL BRIDGE (CD's, Denon or other) --	\$349
ZX/BCS-36	BRIDGE W COPY STAND (36"wide) -----	\$225
ZX/BCS-47	BRIDGE W COPY STAND (47"wide) -----	\$295
ZX/BCS-51	BRIDGE W COPY STAND (51" wide) -----	\$325
ZX/BCS-60	BRIDGE W COPY STAND (60" wide) -----	\$349
ZX/TTDC-S	TURNTABLE DUSTCOVER (single) -----	\$449
ZX/TTDC-D	TURNTABLE DUSTCOVER (double) -----	\$750
ZX/INTV-12	INTERVIEW TABLE- 12" by 48" -----	\$299
ZX/INT-16	INTERVIEW TABLE- 16" by 72" -----	\$699
ZX/INT-26	INTERVIEW TABLE- 26" by 48" -----	\$549
ZX/INT-42	*INTERVIEW TABLE- 42" by 72" (6 sided, 3 person) -----	\$795
ZX/FER-72	FREESTANDING EQUIP RACK- 72" X 24" X 19" -----	\$995
ZX/FER-36	FREESTANDING SLOPE EQUIP RACK- 36" -----	\$695
ZX/4BYO-8RU	4 BAY EQUIPMENT RACK OVERBRIDGE (14" EA) -----	\$1,695

CUSTOM STUDIO FURNITURE

Over 1/3 of all Modulux studios are heavily or fully customized. Modulux post and panel construction is easily and inexpensively customized. Contact the factory for custom studio designs and quotations.

FURNITURE ORDERING INFORMATION

MODULUX TWO

SHIPPING NOTE-

Average shipping weight and price per studio in the forty-eight contiguous United States is ...

Modulux 2: 600 lb's avg,
\$125-225

MODULINK PREWIRE-

Modulux Two is a table workstation design using a multiple of 26" x 30" tables. Modulink Prewire is a version of Modulux Two using large free supported table surfaces. In Modulink Prewire, there are no leg obstructions anywhere under the table surface.

***NOTE 1-**

Tabletop Slope Equipment Racks may not be used with 'Double Pedstal Bridges.'

***NOTE 2**

A series of 'Octagon' tables are available standard. Contact the factory for specific information.

CUSTOM STUDIO FURNITURE

Over 1/3 of all Modulux studios are heavily or fully customized. Modulux post and panel construction is easily and inexpensively customized. Contact the factory for custom studio designs and quotations.

ACCESSORIES

MODEL #	STUDIO CONFIGURATIONS	\$ LIST
2/PDT-30	PEDESTAL TABLE (left and right pedestals w connecting counter, without wire channel - 30" deep) -----	\$550
2/SHORT L	SHORT L -----	\$750
2/LONG L	LONG L -----	\$950
2/SHORT U	SHORT U -----	\$950
2/UNBALANCED U	UNBALANCED U -----	\$1,200
2/LONG U	LONG U -----	\$1,500

MODEL #	MODIFICATIONS TO STUDIO CONFIGURATION	\$ LIST
2/STNDUP	STANDUP HEIGHT UPGRADE- (from 30" to 34" high) -----	\$120
2/PDT-UP-36	TABLE DEPTH UPGRADE- (from 30" to 36" deep) -----	\$500
2/CC-1-45	TABLE KNEEWELL UPGRADE #1- (from 36" to 45" wide) ---	\$225
2/CC-2-??	TABLE KNEEWELL UPGRADE #2- (from 36" to 60" wide) ---	\$325

MODEL #	FREESTANDING PEDESTALS	\$ LIST
2/FP-1	SINGLE -----	\$250
2/FP-2	DOUBLE -----	\$500
2/FP-?	CUSTOM -----	\$250 per

MODEL #	OPTIONS	\$ LIST
2/ERK-7	EQUIPMENT RACK KIT #7 (place in pedestal side panel, 17")	\$195
2/PED-C	PEDESTAL CONVERSION (converts table into enclosed ped.)	\$95
2/TLD-1	REAR PEDESTAL ACCESS DOOR (touch latch)	\$125

Modulux Two- Modulink Prewire

MODEL #	STUDIO CONFIGURATIONS	\$ LIST
2P/SHORT U	SHORT U -----	\$1,250
2P/UNBALANCED U	UNBALANCED U -----	\$1,500
2P/LONG U	LONG U -----	\$1,750

MODEL #	DESCRIPTION	\$ LIST
ZX/ERP-L-8RU	STANDARD TABLETOP EQUIPMENT RACK POD LEFT (14") --	\$349
ZX/ERP-R-8RU	STANDARD TABLETOP EQUIPMENT RACK POD RIGHT (14") --	\$349
ZX/ERP-L-12RU	STANDARD TABLETOP EQUIPMENT RACK POD LEFT (21") --	\$499
ZX/ERP-R-12RU	STANDARD TABLETOP EQUIPMENT RACK POD RIGHT (21") --	\$499
ZX/TT1	TURNTABLE ISOLATOR -----	\$199
ZX/TT2	TURNTABLE RECESS (Technics SL1200)-----	\$199
ZX/SLP	*TABLETOP SLOPE EQUIPMENT RACK (30 degrees ,21") ----	\$249
ZX/BCS-36	BRIDGE W COPY STAND (36"wide) -----	\$225
ZX/BCS-47	BRIDGE W COPY STAND (47"wide) -----	\$295
ZX/BCS-51	BRIDGE W COPY STAND (51" wide) -----	\$325
ZX/BCS-60	BRIDGE W COPY STAND (60" wide) -----	\$349
ZX/INTV-12	INTERVIEW TABLE- 12" by 48" -----	\$299
ZX/INT-16	INTERVIEW TABLE- 16" by 72" -----	\$699
ZX/INT-26	INTERVIEW TABLE- 26" by 48" -----	\$549
ZX/INT-42	*INTERVIEW TABLE- 42" by 72" (6 sided, 3 person) ----	\$795
ZX/FER-72	FREESTANDING EQUIP RACK- 72" X 24" X 18" -----	\$995
ZX/FER-36	FREESTANDING SLOPE EQUIP RACK- 36" -----	\$695
ZX/4BYO-8RU	4 BAY EQUIPMENT RACK OVERBRIDGE (14" EA) -----	\$1,695

MODULUX SUPREME

MODEL #	STUDIO CONFIGURATIONS	\$ LIST
S/PDT-36	PEDESTAL TABLE (left and right pedestals w connecting counter, with wire channel - 36" deep) -----	\$2,500
S/SHORT L	SHORT L -----	\$3,000
S/LONG L	LONG L -----	\$3,500
S/SHORT U	SHORT U -----	\$3,500
S/UNBALANCED U	UNBALANCED U -----	\$4,000
S/LONG U	LONG U -----	\$4,500

MODEL #	MODIFICATIONS TO STUDIO CONFIGURATION	\$ LIST
S/STNDUP	STANDUP HEIGHT UPGRADE- (from 30" to 34" high) -----	\$295
S/CC-4-??	TABLE KNEEWELL UPGRADE #4- (from 46" to 60" wide) ---	\$225

MODEL #	FREESTANDING PEDESTALS	\$ LIST
S/FP-1	SINGLE -----	\$550
S/FP-2	DOUBLE -----	\$1,100
S/FP-?	CUSTOM -----	\$500 per

MODEL #	OPTIONS	\$ LIST
S/ERK-4	EQUIPMENT RACK KIT #4(place in pedestal SIDE panel-10RU)	\$149
S/ERK-5	EQUIPMENT RACK KIT #5 (place in pedestal END panel- 10RU)	\$295
S/ERK-6	EQUIPMENT RACK KIT #6 (under console rack-10RU) -----	\$295
S/CRT-3	CART RACK #3 (56 hole in any pedestal side panel) -----	\$199
S/CRT-4	CART RACK #4 (56 hole in any end panel) -----	\$199
S/DDU-3	DESK DRAWER UNIT #3- (3 drawer unit (1 file drawer) replaces a pedestal side panel and fills pedestal) -----	\$499
S/DDU-4	DESK DRAWER UNIT #4- (3 drawer unit (1 file drawer) replaces a pedestal side panel and fills pedestal) -----	\$499
S/DOR-2	DOOR #2 -(hinged with lock, 2 shelves, finished interior replaces any pedestal end panel and fills pedestal) -----	\$499

SHIPPING NOTE-

Average shipping weight and price per studio in the forty-eight contiguous United States is ...

Supreme- 800 lb's avg
\$200-400

***NOTE 1-**

Tabletop Slope Equipment Racks' may not be used with 'Double Pedestal Bridges.'

***NOTE 2**

A series of 'Octagon' tables are available standard. Contact the factory for specific information.

ACCESSORIES

MODEL #	DESCRIPTION	\$ LIST
S/ERP-L-8RU	SUPREME TABLETOP EQUIPMENT RACK POD LEFT (14") --	\$349
S/ERP-R-8RU	SUPREME TABLETOP EQUIPMENT RACK POD RIGHT (14") --	\$349
S/ERP-L-12RU	SUPREME TABLETOP EQUIPMENT RACK POD LEFT (21") --	\$499
S/ERP-R-12RU	SUPREME TABLETOP EQUIPMENT RACK POD RIGHT (21") --	\$499
ZX/TT1	TURNTABLE ISOLATOR -----	\$199
ZX/TT2	TURNTABLE RECESS (Technics SL1200)-----	\$199
ZX/SLP	*TABLETOP SLOPE EQUIPMENT RACK (30 degrees ,21") -----	\$249
S/DPO-CT	SUPREME DOUBLE PEDESTAL BRIDGE (CART ONLY) -----	\$299
S/DPO-CTCD	SUPREME DOUBLE PEDESTAL BRIDGE (SPLIT CART,CD's) --	\$349
S/DPO-CD	SUPREME DOUBLE PEDESTAL BRIDGE (CD's, Denon or other)..	\$349
ZX/BCS-36	BRIDGE W COPY STAND (36"wide) -----	\$225
ZX/BCS-47	BRIDGE W COPY STAND (47"wide) -----	\$295
ZX/BCS-51	BRIDGE W COPY STAND (51" wide) -----	\$325
ZX/BCS-60	BRIDGE W COPY STAND (60" wide) -----	\$349
ZX/TTDC-S	TURNTABLE DUSTCOVER (single) -----	\$449
ZX/TTDC-D	TURNTABLE DUSTCOVER (double) -----	\$750
ZX/INTV-12	INTERVIEW TABLE- 12" by 48" -----	\$299
ZX/INT-16	INTERVIEW TABLE- 16" by 72" -----	\$699
ZX/INT-26	INTERVIEW TABLE- 26" by 48" -----	\$549
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ZX/FER-72	FREESTANDING EQUIP RACK- 72" X 24" X 19" -----	\$995
ZX/FER-36	FREESTANDING SLOPE EQUIP RACK- 36" -----	\$695
ZX/4BYO-8RU	4 BAY EQUIPMENT RACK OVERBRIDGE (14" EA) -----	\$1,695

CUSTOM STUDIO FURNITURE

Over 1/3 of all Modulux studios are heavily or fully customized. Modulux post and panel construction is easily and inexpensively customized. Contact the factory for custom studio designs and quotations.

CART/ RECORD/ TAPE AND CD STORAGE

Modulux storage systems are modular, interchangeable, stackable, and ship via fast and inexpensive United Parcel Service. All modules feature quality laminate exteriors with solid oak facings for durability and beauty. To configure a wall storage system, simply order the appropriate units below and stack them as you desire. Modules require attachment to a wall for stability and safety. Modulux storage systems are perfect as stand alone storage or as a complement to Modulux studio products.



MODEL	DESCRIPTION	PRICE
X/WCR-100	<u>WALL CART RACKS</u> (100 hole, 25"W x 4 3/4"D x 23 7/8"H) -----	\$129
X/WCR-250	<u>WALL CART RACKS</u> (250 hole, 25"W x 4 3/4"D x 57 3/4"H) ----- NOTE- These cart racks are modular, expand by multiples of 100 holes, and ship via UPS (except 250 hole-truck)	\$298
X/RCD-45-330	<u>RECORD STORAGE-</u> (330-45's, 25"W x 8 5/8"D x 28 1/2"H) -----	\$149
X/RCD-LP-250	<u>RECORD STORAGE-</u> (250-LP's, 25"W x 12 3/4"D x 27 3/4"H) ----	\$149
X/TP-7-100	<u>TAPE STORAGE-</u> (100-7"reels, 25"W x 8 5/8"D x 28 1/2"H) -----	\$149
X/TP-10-70	<u>TAPE STORAGE-</u> (70-10"reels, 25"W x 12 3/4"D x 27 3/4"H) ----	\$149
X/CD-16-	<u>CD STORAGE-</u> (160 CD's, 25"W x 64 3/4"D x 23 7/8"H) ----- NOTE- The record, tape and CD racks stack 3 high to build a 84" vertical wall unit or may be used individually. The individual units ship via UPS.	\$179

But Is The Quality Really There?

Absolutely. With MODULUX, your money goes for quality materials and construction, not for inefficient manufacturing methods. All panels are 3/4" wood polyboard, permanently laminated on both sides at the factory and guaranteed *not* to delaminate in the field. Access panels are securely attached, yet easily removed, with quarter-turn fasteners. MODULUX'S .125 inch thick aluminum post and solid wood panel construction provides superior durability. No other cabinet — not even the most expensive — is stronger. Plus, the clean, classic styling and natural solid oak trim of MODULUX cabinetry gives your studio a look visitors will admire and station personnel will appreciate.



Natural oak trim complements color-keyed laminate panels and tops for style and durability.

Designed With The Future In Mind.



MODULUX makes studio updates easy. Shown, a second turntable base being added alongside an existing base.

Another key advantage of the MODULUX system is flexibility. Since panels can be interchanged, the system can be reconfigured, or expanded as your needs change. For example, you can add an additional turntable base alongside an existing base cabinet, simply by unlocking and removing an end panel from the



Locking the existing and new bases together and adding an overbridge creates a single integrated unit.

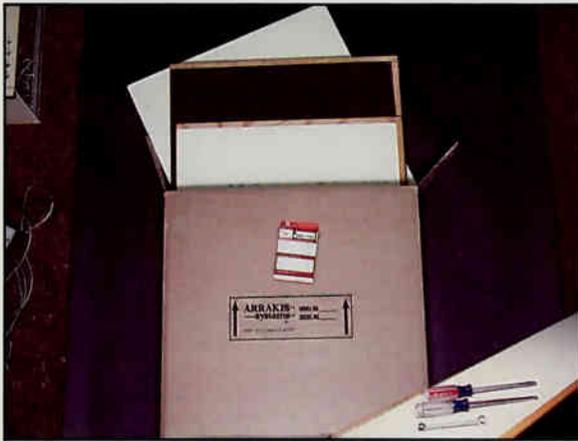
existing cabinet. Old and new base cabinets then lock together as one unit. Or perhaps next year you'll need to replace a fixed panel with an equipment rack panel. With many conventional designs, it's difficult or impossible. But it's easy with MODULUX.

The End Of The Endless Wait.

Not only do you pay much less for MODULUX quality, you wait much less too. Because Arrakis builds each MODULUX cabinet from in-stock, standardized elements — not from scratch, orders can be processed and shipped in a few days. Not weeks or months.

And MODULUX cabinets are shipped to you by fast, low cost United Parcel Service truck. If you're really in a hurry, units can even be shipped by overnight air express.

How We Fit Big, Strong, MODULUX Cabinets Into Compact, Strong, U.P.S.-able Boxes.



Each MODULUX cabinet is shipped knocked-down, via U.P.S. Assembles fast and easy with just a few hand tools.

The ingenious aluminum post and wood panel construction of MODULUX cabinetry also offers another advantage: It allows us to ship MODULUX units knocked-down, in flat-pack U.P.S. shippable boxes. This saves you money *two ways*. First, it reduces manufacturing and inventory storage costs. These savings are passed on to you. Second, it can save you hundreds in shipping costs. MODULUX has been designed from the ground up for quick, easy, "no headaches" installation. All outside panels, for example, are easily screwed into pre-drilled and threaded holes in the aluminum frame posts. The entire cabinetry system pictured here went from six sealed boxes to one complete studio, ready for component installation, in less than four hours.

MODULUX Is An Allied Exclusive.

Innovative answers to broadcasters' needs are what you expect from Allied Broadcast Equipment. So it's no surprise that Arrakis Systems chose Allied as the exclusive distributor for MODULUX cabinetry. All units are immediately available as shown, with cream color laminate side panels and dark brown "leather-look" laminate tops, all trimmed in natural oak. This color combination has been chosen to complement a wide variety of studio environments. Other colors and finishes can be ordered at a moderate up-charge. With MODULUX, there's no need to compromise on style, quality, delivery and especially — value. That's why we're confident that you'll choose MODULUX cabinetry. Your Allied sales engineer is ready to help you plan *your next studio*, right now. Just call your Allied office.



1-800-622-0022

ATLANTA

CHICAGO

DALLAS

LOS ANGELES

RICHMOND, IN

 **HARRIS
ALLIED**
BROADCAST EQUIPMENT

MODULINK FACTORY PREWIRED STUDIO SYSTEMS



Arrakis Modulink® Systems are sold
exclusively through Harris-Allied



arrakis
SYSTEMS, INC.

Modulink is a registered trademark of Arrakis Systems, Inc.

Modulink Prewire On Air System 12



MODULINK® FACTORY PREWIRED STUDIO SYSTEMS



The successful design, manufacture, and installation of a modern radio broadcast Air or Production studio is a complex task. It requires experience in a dozen different fields from carpentry and architecture, to grounding and AC power systems, to the wiring and control systems for the studio itself. The Modulink® Systems Division at Arrakis is designed to be a resource to your station whether you have a full time engineer or bring in outside engineering talent. We can provide any level of system support from a simple studio kit to be assembled on site to an entire studio that just plugs in.

FACTORY SUPPORT

Arrakis Systems is the #1 manufacturer in unit sales of audio consoles and studio furniture for radio in the U.S. When using Modulink® for your systems needs, you therefore receive the full support and backing of a major electronics and furniture systems manufacturer with all that entails. Design and technical drawings for your system are faster and more professional with our Macintosh based CAD computer systems and on staff design engineers. All or part of the studio system can be assembled and tested in our custom Systems Division facilities. This means that studio installation and setup time at the site are dramatically reduced which saves time, money, and headaches. During setup if your engineers encounter a problem, they have access to the full resources of our systems and customer service departments. That is also a very important resource to your station as the years go by and the studio requires modification or expansion. Factory direct support for your system is one of the most important features of Modulink® systems from Arrakis.

WHAT IS MODULINK®?

Factory prewire systems must be capable of being assembled and tested at the factory and then torn down to be shipped and reassembled at the site. To make that reassembly fast and efficient, Modulink uses connectorized plug-in cables for studio assembly and disassembly. An advantage of this feature is the ease of expansion or reconfiguration of the system at the site. To reconfigure a studio, cables need only be rerouted and plugged in. In the case of expansion, new cables and sources need only be added. This flexibility is one of the major features of Modulink® over traditional point to point punch block type studio systems.

Modulink Custom wiring bulkhead



MODULINK CUSTOM

To best serve studio systems needs, Arrakis has created two forms of Modulink®. The first is Modulink Custom introduced in 1988. This system was engineered to be assembled and tested at the factory. It is fully prewired for up to 48 sources. Metal bulkheads within the studio furniture are cabled and connectorized for the basic wire harness. Short extender cables then connect these bulkheads to the specific source such as a cart machine or CD player. Once assembled at the factory, the studio is tested and then broken down into 3 to 5 pedestals. These pedestals are shipped to site where the metal bulkheads are plugged in, the pedestals bolted together, and the system is up and running usually within 2 hours.

MODULINK PREWIRE *The System is FREE!*

To help speed studio design and construction time where local engineering is available, Arrakis introduced Modulink Prewire in late 1989. This system was designed from the ground up. A new console, the 12,000, was engineered along with a new furniture line and a new approach to system cabling. This studio can be assembled and tested in factory or sent to site as a kit for rapid installation. The integration of the console, furniture, and system cabling was so successful, that we can literally sell the system cabling for *FREE* when a complete system is ordered. See the back page for further information.

A SYSTEM FOR ALL MARKETS

Modulink studios are ideal for small, medium, and large markets--On Air, Production, and Newsrooms. With three furniture lines and the largest console line in the industry, Modulink truly fits any size job or application.

THE HARRIS-ALLIED CONNECTION

Arrakis Modulink® systems are sold exclusively through Harris-Allied. This means that the full resources of the Harris-Allied systems people are available if you need a turnkey facility or simply a single engineer on site for support. This also means that your bid is as close as the telephone and your local or worldwide Allied office.

Modulink Custom Studio System



FEATURES

TWO TYPES OF MODULINK

(1) Modulink Custom-

- Assembled and tested at the factory for shipment to site.
- Up to 48 sources.
Assembles in 2-4 hours.

(2) Modulink Prewire-

- Can be shipped in kit form or assembled and tested
- Basic Systems are easily laid out by nontechnical people
- 'Component Stereo' Cables- For every source or output there is a single specific cable that connects that source with audio and logic controls to the console. Just plug it in.
- The System is FREE!!!

BASIC FEATURES

Easy to Design a Studio- let Arrakis engineers help you with the technical questions.

Factory Assembled & Tested or Prewired & Assembled on Site whether you receive a Modulink Custom studio to simply plug in or your engineer assembles a Modulink Prewire studio at your station . . . you have the confidence of factory systems support, construction time is dramatically reduced, and money is saved.

Connectorized assembly- just plug it in! This makes your system easy to change and to expand in the future.

Three Furniture Lines- choose from 3 quality Modulux furniture lines

MODULINK PREWIRE

■ **A STUDIO IN A BOX!!!**

Ordering Modulink Prewire is as simple as ordering a console or cart machine. The studio is shipped to site in pretested sections and assembled in minutes or hours.

■ **THE SYSTEM IS FREE!!!**

The integration of the console, furniture, and system cabling is so successful, that we can literally sell the system cabling for free with a complete system. Why purchase the equipment and assemble the system at your own cost? Call now for a quote!

■ **FASTER AND EASIER WITH FACTORY SUPPORT!!!**

First- studio design is much easier. Nontechnical people can define the studio while Arrakis converts your vision into a functioning reality. **Second-** on-site assembly time of the studio with the associated construction mayhem is dramatically reduced. This saves both money and aggravation.

Third- you receive a factory tested and documented system with the full support of a major electronic manufacturer.

■ **'COMPONENT STEREO' STUDIO WIRING!!!**

Modulink Prewire uses a "Component Stereo" approach to studio wiring!!! For every source device (such as a cart machine for example), there is a factory prewired cable that plugs into the console at one end and the source device (cart machine for example) at the other end. This cable carries both audio and logic control signals so that the source may be remote started, stopped, feature ready status flashing lamps, etc. Cables are factory built to connect your monitor amps, distribution amps, speakers, telephone hybrids, etc. This approach makes it no more difficult to assemble or expand a studio than to plug in and assemble a sophisticated wall audio-video entertainment center.

■ **IS IT A KIT, OR CAN IT BE ASSEMBLED AND TESTED AT THE FACTORY?**

The answer is EITHER. The furniture, source equipment, audio console, and Modulink prewire cables can be shipped to your site ready for your assembly. Or--the entire studio can be assembled at the factory, tested, and then shipped by furniture mover to your site in 3 to 5 large pieces that plug together in minutes.

■ **DO I NEED AN ON SITE ENGINEER?**

YES-- A technical person is required for the studio assembly whether the studio is sent assembled or disassembled. The studio will require at the least a check of calibration and levels. The value of Modulink Prewire however is that technical support is reduced from weeks to hours.

■ **HOW DO I FIND OUT MORE?**

Call Arrakis Systems at (303) 224-2248 or your local Harris-Allied sales office for more information and a Modulink Prewire Manual.

Modulink Prewire audio and logic cable



Modulink Prewire On Air System 12



Modulink Prewire On Air System 12



Arrakis Modulink® systems are sold exclusively through *Harris-Allied*



arrakis
SYSTEMS, INC.

2619 MIDPOINT DRIVE
FORT COLLINS, CO 80525
(303) 224-2248

Modulink® is a registered trademark of Arrakis Systems, Inc.

CONSOLE TURRETS PRICE LIST

EFFECTIVE OCTOBER 1, 1989

CONSOLE TURRET CABINET-

MODEL	DESCRIPTION	\$LIST
TR-6TT	SIX MODULE TABLETOP TURRET (5 1/4" H x 7 1/2" D x 11"W) -----	\$299
TR-6CO	SIX MODULE THRU-TABLE TURRET (5 1/4" H x 7 1/2" D x 11"W) -----	\$299
TR-11TT	ELEVEN MODULE TABLETOP TURRET (5 1/4" H x 7 1/2" D x 19"W) ----	\$349
TR-11CO	ELEVEN MODULE THRU-TABLE TURRET (5 1/4" H x 7 1/2" D x 19"W) ----	\$349
TR-DC1.5	TURRET POWER SUPPLY (optional) ----- (1.5 amp, 12 volt bipolar regulated power supply. Floor mount)	\$249

These turrest house six or eleven modules. If powered modules are used, they are powered from the console power supply unless an optional power supply is purchased. The TT suffix in the model # means tabletop. The CO suffix in the model # means thru-table.

CONSOLE TURRET MODULES- (1 1/2" x 5")

This is a listing of the standard turret modules used for the 10,000 and 12,000 series console lines. Select a module or blank panel to fill the chosen turret.

MODEL	DESCRIPTION	\$LIST
XMK1-T	MIC/COUGH CONTROL PANEL-(ON, OFF, Cough switches) -----	\$99
XMK2-T	MIC/ COUGH/ TALKBACK -(ON, OFF, Cough and Talkback switches) -----	\$119
XMV1-T	STUDIO MONITOR VOLUME CONTROL MODULE-(passive stereo fader for level control of audio before power amp driving studio monitor speakers) -	\$59
X7P1-T	7 POSITION REMOTE SELECTOR-(used as input select for Studio Monitor Volume Control Module) -----	\$195
XHP1-T	POWERED HEADPHONE CONTROL MODULE-(powered high-impedance headphone amplifier with level control and stereo headphone jack) -----	\$165
XHP2-T	PASSIVE HEADPHONE CONTROL MODULE-(passive stereo fader for level control of audio before power amp driving stereo headphones with stereo headphone jack) -----	\$74
XDT1-T	60 MINUTE ESE UP TIMER W CONTROLS (timer w start, stop, reset, and auto-manual controls, Requires 3 module positions) -----	\$495
XIC1-T	5 STATION WIRED INTERCOM -----	\$425
XBK2	BLANK PANEL -----	\$24

NOTE: The basic passive modules are wired to flying 9 pin Molex connectors and do not require a back panel motherboard. The Powered Headphone Module, 7 Position Remote Selector Switch module, Timer, and Intercom modules require back panel motherboards which are connectorized. These motherboard panels are provided with their respective modules and are built into the list price.

TR SERIES CONSOLE CONTROL TURRETS

Features

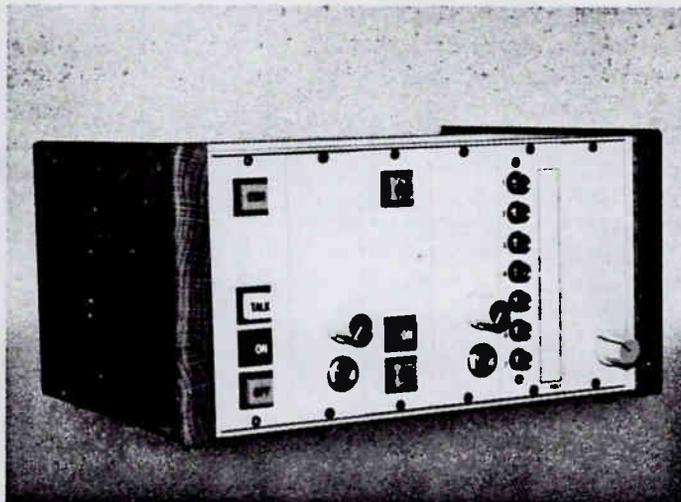
- Provides remote control of control room console mic's, headphones and monitors for a talent studio.
- Cabinets for 6 or 11 modules
- Tabletop or Thru-table mounting
- Wide variety of modules available
- Modular, regulated, power supply
- Molex Connector inputs and outputs
- Ultrareliable- two year warranty

Description

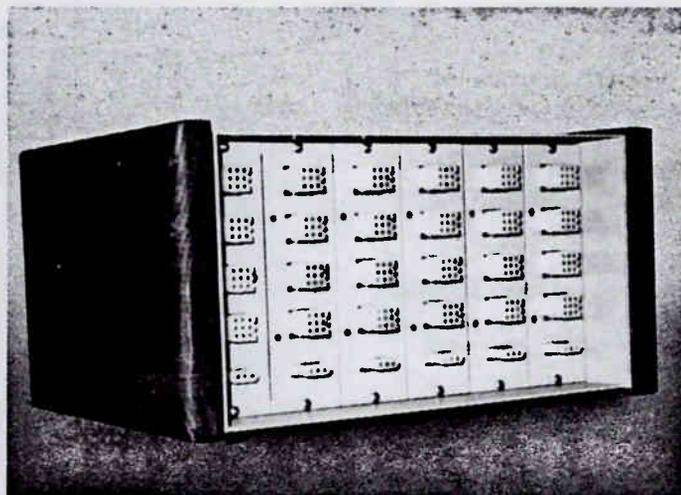
The TR series of console control turrets are a perfect complement for Arrakis 10,000 and 12,000 series audio consoles. These two console lines feature remote console module control and tally drivers for separate talent studios. By using a turret, it is possible to simplify operation of ON AIR newsrooms and interview rooms while saving on the price of a full console in those rooms.

Functionally, a turret provides control of ON, OFF and COUGH functions with a headphone level control and jack for each mic in the studio. A studio monitor speaker level control is also provided and, in some instances, a studio monitor input select switch is used. It is also of value on occasion to have a digital timer in the turret sync'd to the timer in the control room. While all of these functions are provided in the turret, all actual audio ON, OFF, cough functions are performed by remote control in the control room audio console.

Modules used in these turrets come in two basic classes. These are non-powered passive modules and powered modules. If powered modules are used, then a power supply is required. An optional 1.5 amp power supply (TR-DC1.5) is available.



Six Module Turret (tabletop mount)



Six Module Turret (rear view, filled with powered modules)

TURRET MODELS

- MODEL TR-6TT (6 module turret cabinet- tabletop mount)
- MODEL TR-6CO (6 module turret cabinet- thru table mount)
- MODEL TR-11TT (11 module turret cabinet- tabletop mount)
- MODEL TR-11CO (11 module turret cabinet- thru table mount)
- MODEL TR-DC1.5 (optional 1.5 amp, bipolar power supply)

Specifications

- Six Module Turret- Size- 11" x 7 1/2" x 5 1/4"
- Eleven Module Turret- Size- 19" x 7 1/2" x 5 1/4"

PASSIVE TURRET MODULES

These modules are entirely passive and do not require a power supply. They are a combination of two pole single throw switches; or stereo, linear taper, rotary faders.

These modules come wired to .062" Molex connectors. Mating connectors and pins are supplied with each module.

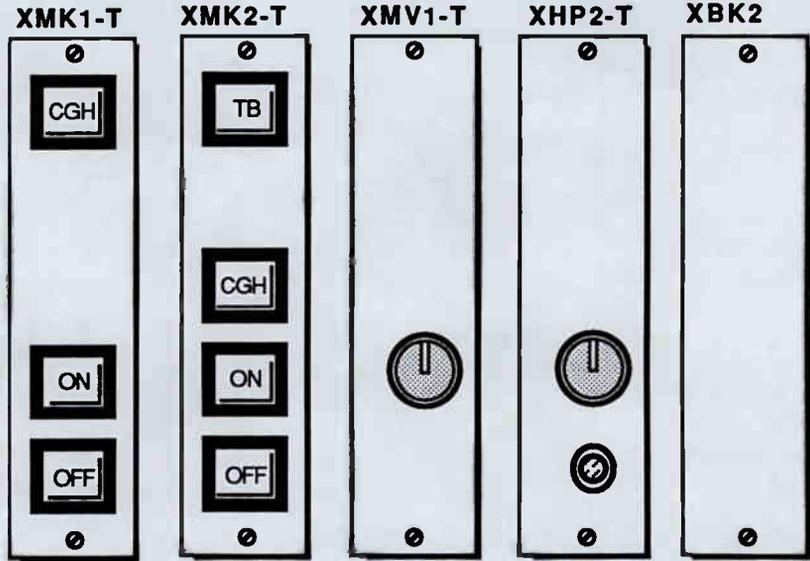
XMK1-T - Mic control panel

XMK2-T - Mic control panel with Talkback

XMV1-T - Stereo fader for studio monitor level control (pre-monitor power amp)

XHP2-T - Stereo fader with headphone jack for level control (pre-headphone power amp)

XBK2 - Blank module placed in unused position in the turret



ACTIVE TURRET MODULES

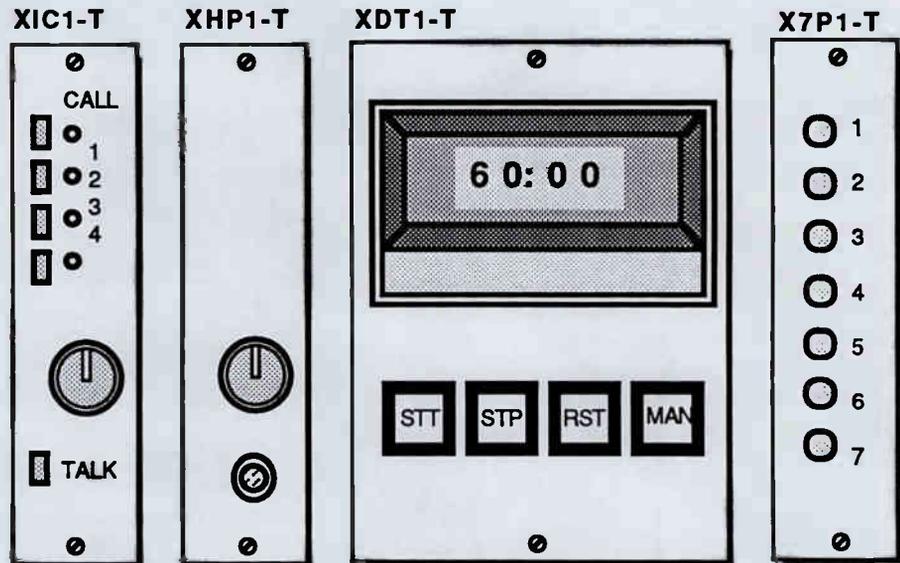
The XIC1 (intercom) and XHP1 (headphone amp) have printed circuit boards with active electronics. The X7P1 (switch) module has a PC board. The XDT1 (timer) has a timer module with AC power. They each require a 'Single module Motherboard' (XTR1) on the back of the turret associated with each such module used. An XTR1 is provided with each module in the standard price. The XTR1 has .062" Molex connectors. Mating connectors and pins are supplied with each module.

XIC1-T - 5 Station wired intercom

XHP1-T - Headphone amplifier for high impedance headphones.

XDT1-T - ESE 60 minute up timer with controls

X7P1-T - Passive 4PDT seven position interlocked switch mounted and bussed together on a PC board



Width is 3 modules wide

**ROUTING SWITCHER
PRICE LIST**

EFFECTIVE OCTOBER 1, 1989

RS SERIES AUDIO ROUTING SWITCHERS

MODEL	DESCRIPTION	\$ each
1100A-RSM	<u>16 INPUTS BY 4 OUTPUTS ROUTING SWITCHER</u> - thumbwheel control (MONO) -----	\$ 995
1100A-RSS	(STEREO) -----	\$ 1195
1100B-RSM	<u>16 INPUTS BY 8 OUTPUTS ROUTING SWITCHER</u> - thumbwheel control (MONO) -----	\$ 1195
1100B-RSS	(STEREO) -----	\$ 1695
16TH-1T	<u>SINGLE REMOTE CONTROL</u> - thumbwheel control, tabletop mounted ---	\$ 105

RS SERIES AUDIO ROUTING SWITCHERS

Features

- Rack mounted
- Remote Controllable
- Molex Connector inputs and outputs
- Ultrareliable- two year warranty
- Modular Regulated, computer grade power supply
- 1,000,000 operation thumbwheel switches
- All IC's are socketed
- Single motherboard design for ease of service

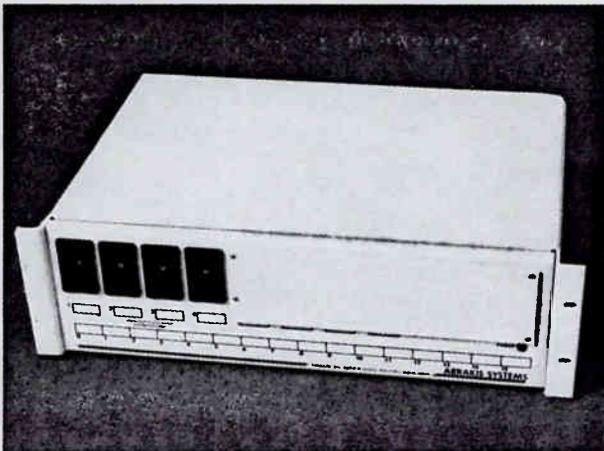
Description

The RS series audio routing switcher is the professional alternative to patch panels, mechanical switches, and distribution amps. Ultrareliable--- the power supply is regulated, protected and has a ten year mean time before failure. LSI integrated circuits reduce the parts count to a minimum. All IC's are socketed and accessible from the rear for immediate replacement. The thumbwheel controls are 1,000,000 operation. This level of attention to reliability means that this router can be used in the most critical sections of the audio chain with total confidence.

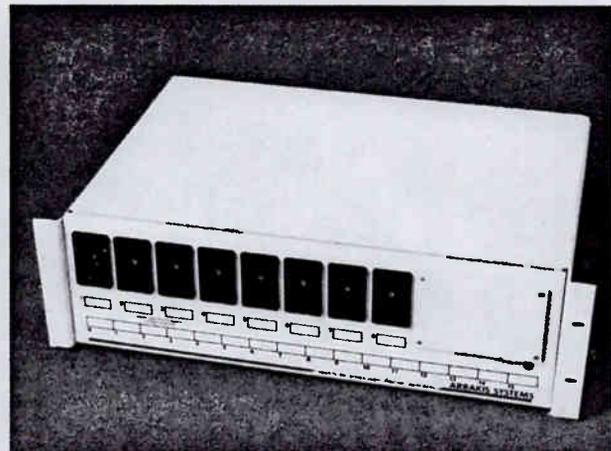
A motherboard on the back of the unit contains all audio electronics and input-output connectors. The front panel has all of the thumbwheel switches and is removeable to provide access to the power supply. The switcher need never be unwired or removed from the rack for service.

The switchers are entirely transparent to audio. Flat to within .1dB and with a typical distortion of under .02%, they will not color or distort your sound.

Routing switchers perform many applications that are difficult with other technologies. A single audio line with remote control can link a satellite system to a studio. This replaces several D.A.'s and a massive cable bundle. The switcher can provide studio selection to the transmitter, an audio preselector for reel to reel recorders, remote selector for audio console inputs, etc. The RS series of audio routing switchers are ideally suited for rugged , continuous duty audio broadcast applications.



MODEL 1100A-RSM 16 mono inputs, 4 mono outputs
MODEL 1100A-RSS 16 stereo inputs, 4 stereo outputs



MODEL 1100B-RSM 16 mono inputs, 8 mono outputs
MODEL 1100B-RSS 16 stereo inputs, 8 stereo outputs

Specifications

Gain- Unity, non-adjustable
Input Level- +24dBV max
Output Level- +24dBV max
Frequency Response- 20-20kHz (+) (-) .1dB
Noise- 80dB below +8dBV
THD- .02% typical at +8dBV output
Input Impedance- 100,000 ohms balanced

Output Impedance- 600 ohms balanced
Crosstalk- (-) 80dB typical at 15kHz
Buss Loading- .1dB max
Control- 4 bit binary
Size- 5 1/4" by 19" rack mount
Power- 110VAC (220VAC optional)
Shipping Weight- 20 lb's

**THE
SC-TURBO
SERIES
OF
AUDIO
MIXING
CONSOLES**



arrakis
SYSTEMS, INC.

Easy to Operate



2000 Series console displayed in Arrakis Modulux furniture.

THE SC-TURBO SERIES OF AUDIO MIXING CONSOLES



The SC SERIES family of audio consoles is the most popular line of consoles sold in America today. With six models from 6 to 12 channels, rotary or slide faders, the SC series superbly fits applications from 'ON AIR', to the newsroom, to production.

Easy to Use

This line of consoles was specifically designed for broadcast use. The front panel layout of faders and switches is spacious and clearly laid out. The console features remote starts. A built-in telephone mix minus bus interfaces to the telephone hybrid without requiring the operator to perform any special switching. He simply turns the phone channel on.

With 6 different models in the series, the entire radio station can use an SC Series console from 'ON AIR', to production, to News. This flexibility reduces training time, makes for fewer costly 'ON AIR' mistakes, speeds production, and dramatically smooths and improves overall station operation.

Attractive and Rugged

The SC Series console line is as rugged and reliable as it is attractive. The console is constructed of heavy, hardened aluminum panels. Three large motherboards located in the bottom of the chassis contain all active audio electronics. This virtually eliminates handwiring. The power supply is external, rack mounted, and protected in all models except the 150SC where it is internal. Solid oak trim accents the clean lines and earthtone colors of this rugged and reliable console.

SC SERIES CONSOLE PRICE LIST

EFFECTIVE OCTOBER 1, 1989

SC SERIES AUDIO CONSOLES

MODEL	DESCRIPTION	\$ each
150SCT-6M 150SCT-6S	<u>150SC- SIX CHANNEL AUDIO CONSOLE</u> -18 inputs, program output, rotary faders	
	(MONO) -----	\$ 2395
	(STEREO) -----	\$ 2495
250SCT-6M 250SCT-6S	<u>250SC- SIX CHANNEL BACK MOUNTED AUDIO CONSOLE</u> - 18 inputs, program and audition outputs, rotary faders	
	(MONO) -----	\$ 2895
	(STEREO) -----	\$ 2995
500SCT-8M 500SCT-8S	<u>500SC- EIGHT CHANNEL AUDIO CONSOLE</u> - rotary faders,22 inputs, program and audition outputs,	
	(MONO) -----	\$ 3495
	(STEREO) -----	\$ 3595
1500SCT-8M 1500SCT-8S	<u>1500SC- EIGHT CHANNEL AUDIO CONSOLE</u> - Penny and Giles slide faders, 22 inputs, program and audition outputs	
	(MONO) -----	\$ 4395
	(STEREO) -----	\$ 4495
2000SCT-12M 2000SCT-12S	<u>2000SC- TWELVE CHANNEL AUDIO CONSOLE</u> - 24 inputs, program and audition outputs, Penny and Giles slide faders	
	(MONO) -----	\$ 4895
	(STEREO) -----	\$ 4995
2100SCT-12M 2100SCT-12S	<u>2100SC- TWELVE CHANNEL AUDIO CONSOLE</u> (with 2 inputs per channel) 34 inputs, program and audition outputs, Penny and Giles slide faders	
	(MONO) -----	\$ 5895
	(STEREO) -----	\$ 5995
CLK-1	<u>OPTION- DIGITAL CLOCK-ESE</u> - (Models 150,500, 2000SCT only) -----	\$ 349
TMR-1	<u>OPTION- DIGITAL UP-TIMER-ESE</u> - 60 minute (Models 150,500,2000 ONLY) -----	\$ 349

5000 SERIES AUDIO CONSOLE

MODEL	DESCRIPTION	\$ each
5000-MF	<u>5000 SERIES- SIXTEEN CHANNEL MODULAR AUDIO CONSOLE</u> MAINFRAME- -----	\$ 3499
PM1	PREAMP MODULE 1- -----	\$ 349
SM1	STUDIO MONITOR MODULE- -----	\$ 349
EQ1	EQUALIZATION MODULE- -----	\$ 349
RS1	REMOTE SELECTOR MODULE-(1100A routing switcher w controller) --	\$ 1195
BK5	BLANK MODULE- -----	\$ 25

NOTE- The 5000 series console is a modular version of the popular SC series console line. The 5000 modularizes the input channels while the output and monitor electronics retains the same OB1 output board as used on the SC series consoles.

TURBO-SC SERIES SLIDE FADER CONSOLES

1500SCT

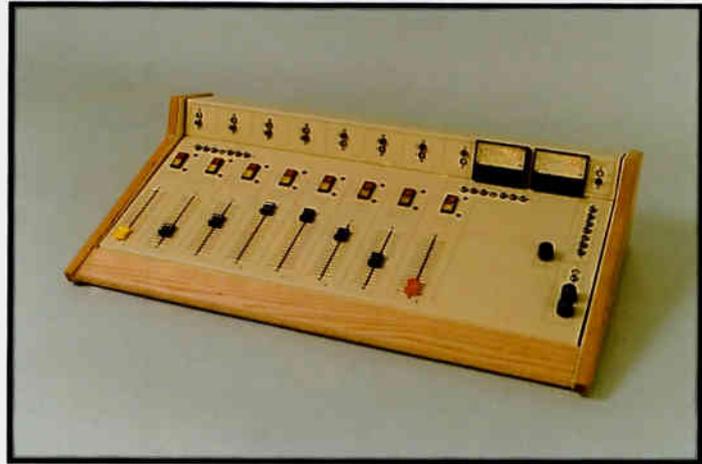
FEATURES-

- 8 Channels
- 2 Inputs per Channel
- 28 Inputs Total
- Program and Audition Outputs
- Mix-minus output for telephone interface
- Mono Mixdown output of Program and Audition
- Monitor, headphone, and cue amps built-in

A slide fader version of the popular 500SC, it is ideal for Newsrooms, production rooms, and 'On Air' applications.

- 1500SCT- 8M Mono version
- 1500SCT- 8S Stereo version

MODEL - 1500SCT



2000SCT

FEATURES-

- 12 Channels
- 1 Input per Channel
- 24 Inputs Total (w two 7 input remote selectors)
- Program and Audition Outputs
- Mix-minus output for telephone interface
- Mono Mixdown output of Program and Audition
- Monitor, headphone and cue amps built-in

With only a single input per channel, the 2000SC is perfect for major applications where simplified, error-free operation is important.

- 2000SCT- 12M Mono version
- 2000SCT- 12S Stereo version

MODEL - 2000SCT



2100SCT

FEATURES-

- 12 Channels
- 2 Inputs per Channel
- 34 Inputs Total
- Program and Audition Outputs
- Mix-minus output for telephone interface
- Mono Mixdown output of Program and Audition
- Monitor, headphone, and cue amps built-in

With a full 12 channels and a myriad of features, this console is designed specifically for major broadcast applications.

- 2100SCT- 12M Mono version
- 2100SCT- 12S Stereo version

MODEL - 2100SCT



Field Proven Reliability

For the ultimate in performance and reliability, the SC series console line is almost entirely DC controlled through the use of VCA's and electronic switching. There is no audio on any of the rotary pots, slide faders, or audio input and output switches. This dramatically improves reliability and eliminates the audible byproducts of scratchy pots and switches. Further, the SC series uses only premium grade parts throughout. Such names as ITT Schadow switches, Penny and Giles slide faders, and SIFAM VU

Functional and Attractive

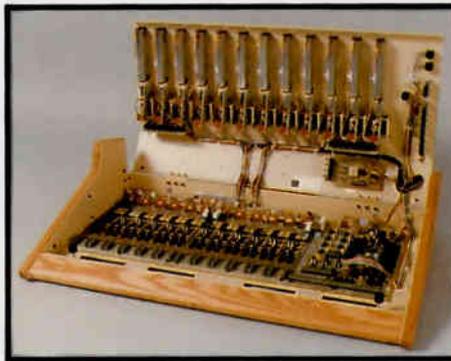


meters assure quality performance and long life. The SC series of audio consoles have been field proven to be reliable, RF resistant, and rugged after tens of thousands of hours of use throughout the nation and the world.

Easy to install and service

To ease installation and service, the console front panel hinges up and back to entirely expose the interior of the console. This reveals the three large motherboards, in the bottom of the console, which contain all active audio circuits and console input-output terminal strips. All IC's are socketed and easily accessed for replacement. Wiring is to Electrovert terminal strips that simply require you to strip the wire and insert it into a hole in the strip. A screwdriver then crimps the wire firmly into the connector. Replacement of a

Easy to Install and Service



motherboard takes only 6 captive screws and a few minutes. All PC board interconnections are gold plated. Attention to detail makes the SC series console flexible and friendly in a real broadcast environment.

Digital ready

The SC series console line is ready for ultra high performance digital audio sources today. The SC series has the remote control capability for digital source start-stop functions and the performance to make the digital source the weak link in the signal chain. With over 100dB of dynamic range, an SC console is transparent to even the best digital CD quality source.

The reasons that the SC Series is the most popular console sold today in radio are simplicity itself; simple to install—simple to use—simple to service. Added to the simplicity are rugged reliability, performance, features, and price. These factors add up to make the SC series unique among audio broadcast consoles today.



Rack Mounted Power Supply

FEATURES

- 6 MODELS
- Active balanced Inputs and Outputs for high performance
- VCA's remove audio from all pots
- DC Switching removes audio from switches
- Solid Oak end panels & armrests
- Mono mixdowns for Program and Audition standard
- Mix-minus bus for interface to phone hybrids standard
- 10 watt per channel monitor amp
- 2 watt per channel earphone and cue amps
- Stereo cue system
- VU Meters -taut band, buffered and adjustable
- Remote Start- (all models except 150SC)
- Muting- Jumper selectable for any 'A' input
- Muting Relay -3PDT built-in
- Prefader Patch jumpers on all 'A' inputs
- Rack mounted external power supply
- Undedicated mic preamp for customer options
- Digital clock and timer (optional for 150,500,2000)
- Remote select switches- connectorized for ease of install
- External monitor inputs- connectorized and buffered
- 500SC, 1500, 2100 mute on 'A' input only so that 'B' inputs can be line level
- All rotary fader boards feature conductive plastic faders with stainless steel shafts and bushings
- Hardened, two part epoxy paint
- Extensive manual documentation
- Turbo-ized performance
Ultra-low distortion
Ultra-low crosstalk

For detailed specifications and information on the SCT series of consoles, please call or write for-
SCT SERIES TECHNICAL
INSTALLATION MANUAL
Publication #-IM-SCT-89



2619 MIDPOINT DRIVE
FORT COLLINS, CO 80525
(303) 224-2248

*Inquire about other Arrakis
console lines or Modulux
furniture as shown at the right.*

SPECIFICATIONS

ELECTRICAL

Frequency Response- +/- .5dB
20Hz-20kHz

Noise

Mic- (-)70dB below +8dBV out with -50dBV
in, 150 ohms

Line- (-)85dB below +8dBV out with +8dBV
in, 600 ohms

Distortion- Total Harmonic .01% Typical
(+8dBV in-out, 30kHz filter)

Crosstalk- (-)70dB at 20kHz

Impedances

Inputs-

Mic- 2000 ohms balanced

Line- larger than 100,000 ohms
balanced

Outputs- 600 ohm balanced, +27dBV
max output level

Monitor- 10 watts per channel into 8 ohms

Earphone- 2 watts per channel into 8 ohms

Cue- 2 watts per channel into 8 ohms

Tests are performed as per factory approved test procedures and equipment. Specifications are typical and subject to change without notice as advances in technology are incorporated.

PHYSICAL

Dimensions- 30"W x 17"D x 8"H

Weight-Console- 38 lb's

Power supply-28 lb's

10,000 Series console



TURBO-SC SERIES ROTARY FADER CONSOLES

MODEL - 150SCT

150SCT

FEATURES-

- 6 Channels
- 2 Inputs per Channel
- 18 Inputs Total
- Program Output
- Mix-minus output for telephone interface
- Mono Mixdown output of Program
- Monitor, headphone, and cue amps built-in
- Totally self-contained w built-in power supply

Ideal for Newsrooms, production rooms, and small 'On AIR' applications.

- 150SCT-6M Mono version
- 150SCT-6S Stereo version



MODEL - 250SCT

250SCT

FEATURES-

- 6 Channels
- 2 Inputs per Channel
- 18 Inputs Total
- Program and Audition Outputs
- Mix-minus output for telephone interface
- Mono Mixdown output of Program and Audition
- Headphone and cue amps built-in
- Rack Mounted (3RU)

Perfect for rack mounted applications in Newsrooms, production rooms, small 'On AIR', and mobile applications.

- 250SCT-6M Mono version
- 250SCT-6S Stereo version



MODEL - 500SCT

500SCT

FEATURES-

- 8 Channels
- 2 Inputs per Channel
- 22 Inputs Total
- Program and Audition Outputs
- Mix-minus output for telephone interface
- Mono Mixdown output of Program and Audition
- Monitor, headphone, and cue amps built-in

Designed specifically for mid-sized broadcast applications requiring a full-featured 8 channel console.

- 500SCT-8M Mono version
- 500SCT-8S Stereo version



THE 12,000-TURBO SERIES AUDIO MIXING CONSOLE



Deluxe 12,000 series mainframe illustrated above



arrakis
SYSTEMS, INC.

THE 12,000 SERIES OF AUDIO MIXING CONSOLES



Standard 8 input channel mainframe illustrated above



Standard 18 input channel mainframe illustrated above

The 12,000 Series console represents the pinnacle of over a decade of dedication to audio broadcast console design by Arrakis Systems Inc.

This console combines the engineering and manufacturing excellence that has made Arrakis #1 in radio console unit sales in the United States.

A leap forward

The 12,000 is a unique synthesis of old and new technologies. It was designed for the specific purpose of creating a new console standard for the 1990's.

For ease of service, installation, and expansion, it was decided that the 12,000 should be entirely front panel modular. Damaged modules can simply be unplugged and replaced. New modules can be easily plugged in and connected for expansion.

For unparalleled flexibility, the 12,000 is a 'Universal bus' design. Every audio bus, logic bus, and audio output is supported in each module position in the mainframe. This enables any module to be placed in any position thereby removing the limitations to flexibility that fixed bus mainframes suffer from.

The 12,000 is a console for all markets. With 3 mainframe sizes of 8, 18 and 28 channels, the 12,000 fits any size application. The features and performance in this console are unmatched. The 12,000 is a dramatic leap forward in broadcast console technology for the 1990's.

12,000 SERIES AUDIO CONSOLE PRICE LIST

EFFECTIVE OCT 1, 1991

MAINFRAMES

All mainframes come with (1) TOB1 output module, (1) TCRM1 monitor module, (1) Power supply, (1) installation kit, manual, spare parts kit. Deluxe mainframes feature through table low profile design, 1/4" milled aluminum side rails, lighted VU meters, and choice of platinum or tan color. Standard mainframes are available in Arrakis tan color only.

MODEL	DESCRIPTION	\$ LIST	qty	EXTENSION
TMF-8A	8 Input Module Position Mainframe	\$2,195		
TMF-8D	8 Input Module Position Deluxe Mainframe	\$2,695		
TMF-18A	18 Input Module Position Mainframe	\$2,795		
TMF-18D	18 Input Module Position Deluxe Mainframe	\$3,295		
TMF-28A	28 Input Module Position Mainframe	\$4,495		
TMF-28D	28 Input Module Position Deluxe Mainframe	\$4,995		

INPUT MODULES Each mainframe MUST be filled in all input module positions with either an input module, blank module (XBK1), or an option module

MODEL	DESCRIPTION	\$ LIST	qty	EXTENSION
TPM1	Line level stereo input module -----	\$299		
TPM1-M	Mono mic level input module -----	\$299		
TPM2	Advanced mono mic level input module with Pan -----	\$375		
TPM3	Advanced stereo line level input module with Mode ---	\$425		

OPTION MODULES Each mainframe MUST be filled in all input module positions with either an input module, blank module (XBK1), or an option module

MODEL	DESCRIPTION	\$ LIST	qty	EXTENSION
TDA1	4 stereo output distribution amplifier module -----	\$295		
TRS1	1 by 5 stereo remote selector switch -----	\$149		
TBK1	Blank input module -----	\$35		
TRR1	Dual 5 button machine control module for reel machines	\$149		
TCT1	Dual 5 button machine control module for cart machines	\$149		

MODEL	ACCESSORIES	\$ LIST	qty	EXTENSION
TSC-????	Stock engraved OFF caps -----	\$5 per		
TCC-????	Custom engraved OFF caps -----	\$8 per		
TCF-????	Colored fader knobs (black knobs supplied standard)--	\$4 per		

MODEL	SPARE MODULES	\$ LIST	qty	EXTENSION
TCRM1	Control room monitor module -----	\$399		
TOB1	Output module -----	\$249		
TPS1	Power supply -----	\$595		

MODEL	DOCUMENTATION	\$ LIST	qty	EXTENSION
IM-12000-89	Technical Manual -----	\$35		
12,000 XSC	Enlarged schematic package ----- (same as in manual but 11" x 17")	\$49		

TOTAL LIST PRICE-

Turrets- The 12,000 features full turret support. Refer to the Turret price list for these support products.

12,000 SERIES CONSOLES

MODULES

The 12,000 console features four types of input modules as shown below. Custom and standard Off button engravings are available as well as your choice of colors for the slide fader knobs. All modules feature polycarbonate overlay front panels for total scratch resistance. The option modules feature remote selectors, distribution amps, and a dual machine control button interface.

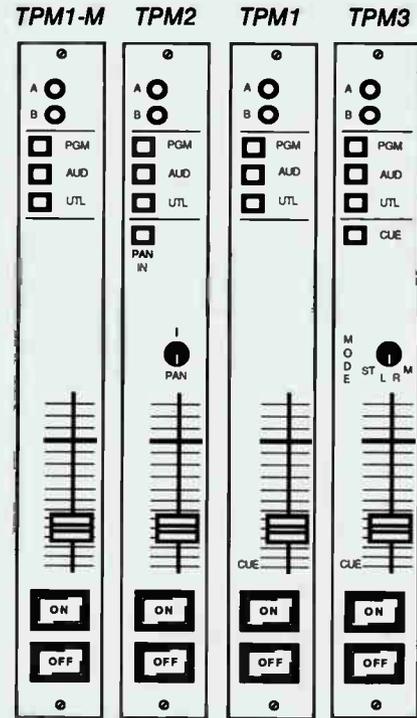
INPUT MODULES

TPM1- (Stereo Line Level module) features 2 stereo inputs, 3 stereo outputs, 2 internal mix-minus bus assignments, cue by detent, reed relay isolated remote start and stop of sources, ready status light of Off switch for cart machines.

TPM1-M- (Mono mic level module) features 2 mono mic level inputs; 3 stereo outputs; 2 internal mix-minus bus assignments; remote turret control of channel On, Off, tally lamp drivers, cough, and talkback to control room.

TPM2- (Mono mic level module w/Pan) features 2 mono mic level inputs; 3 stereo outputs; 2 internal mix-minus bus assignments; remote turret control of channel On, Off, tally lamp drivers, cough, and talkback to control room; and pan pot with in-out switch.

TPM3- (Stereo line level module w/Mode Select) features 2 stereo inputs; 3 stereo outputs; 2 internal mix-minus bus assignments; cue by detent and fader in place switch; reed relay isolated remote start and stop of sources; ready status light of Off switch for cart machines; Mode switch selects inputs for left to both sides, right to both sides, mono, or stereo.



OUTPUT MODULES

TCRM1- (Control Room monitor module) features monitor selector with 2 external inputs and monitor mono button for phase check. The timer controller has auto-manual switch. In manual mode the module start-stop-reset switches function. In auto mode, the individual modules can be DIP switch set to zero, reset, and start the up-timer. The module has muted and unmuted studio monitor outputs with talkback to support 2 studios other than the control room. The headphone pot controls headphone level and follows the monitor select switch. The monitor and headphone feature autocue.

Whenever any module is switched into cue, the monitor and earphones dim by an internally preset level and the cue feeds over the top of program material. Autocue can be internally defeated and a standard mono cue feed to an external cue speaker can be used.

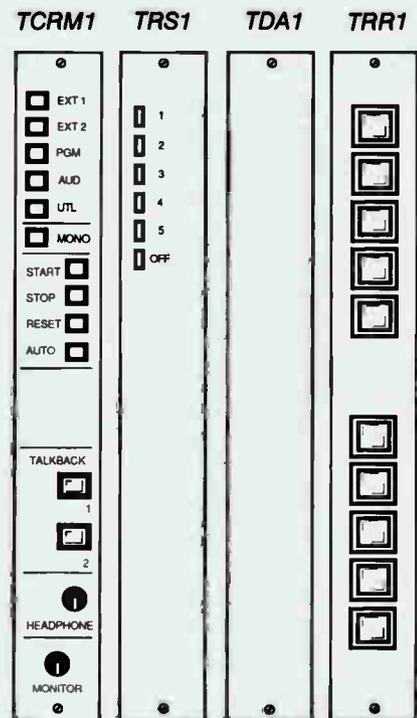
TOB1- (Summing amp, output driver, VU meter driver module) This module contains all bus summing amps and output drivers for the three stereo buses, and mix-minus buses. A mono mix of Program and Audition is also provided with balanced output. The VU driver buffers and trimmers are on this module also. The trimmers are located under the front panel. The front panel is blank.

OPTION MODULES

TRS1- (5 position remote selector switch w/Off module) interlocked 6 position 4PDT switch for input or output selection. Five selectable inputs with the sixth position off.

TDA1- (1 Stereo In, 4 stereo output Distribution amplifier) standard 1 in 4 out stereo D.A. The trimmers are located under the front panel.

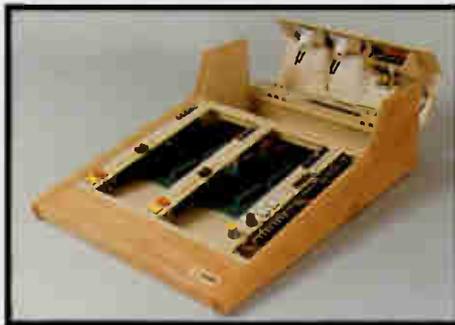
TRR1- (dual five button machine control module) to be customer wired.



Modularity

The 12,000 supports a large standard complement of modules. There are 4 types of input modules; 2 mic and 2 line. These modules have basic and advanced models. The advanced models feature 'Pan' for the mic modules and 'Mode' select for the line modules. All input modules support advanced logic control such as remote turrets, remote start and stop of sources, and ready status. The console supports the control room and two fully monitored studios plus talkback. All 3 stereo output buses are metered individually. Two internally assignable and

Functional and Attractive

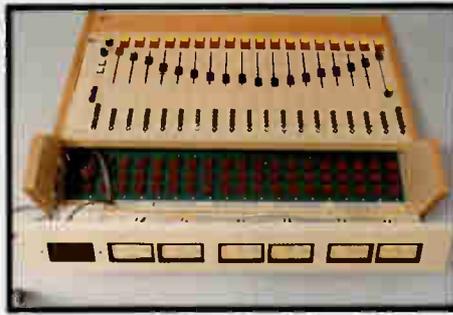


transparent mix-minus buses support the telephone without any front panel setup or operator assistance required. A ten minute up timer with panel controls and module reset capability is standard. A variety of option modules are also available such as a D.A. module, remote selector module, and turret modules.

Reliable performance

The input modules feature VCA control of audio to eliminate faders becoming noisy from time and wear. Only the finest quality components are used throughout the console— Penny and Giles slide faders, Custom conductive plastic rotary faders with

Easy to Install and Service



stainless steel shafts and bushings, ITT Schadow switches, heavy aluminum panels, and solid oak trim. Gold board connectors are used to interconnect the PC boards. All IC's are socketed. Modules are programmable via DIP switches. Attention to detail makes the 12,000 the most mechanically and electrically reliable console that can be built today.

A console for the '90s

The 12,000 series audio broadcast console brings new levels of features and performance to the mid-priced console market. Full front panel modularity, VCA control of audio, and sophisticated control electronics has never before been available in this price range. A universal bus design with a myriad of options creates unparalleled flexibility. The 12,000 is a truly remarkable console at any price.

Basic Modules



FEATURES

- Totally Modular Console-**
Input, Output, & Monitor modules
- Three Mainframe Sizes -8, 18, & 28 channels**
- High Quality Construction**
-P & G 3000 Series slide faders
-VCA's removed audio from pots
-ITT Schadow switches
-Gold connectors-IC's socketed-regulated power supply-heavy construction
- Easy Connectorized Install**
- VCA controlled faders**
- Universal Mainframe Bus-**
any module can be placed anywhere
- Comprehensive Logic**
-Start and stop sources by isolated internal reed relays
-Remote channel On and Off control with Tally lamps
-Flashing OFF switches for cart machine status
-Three muting buses for Control room and two studios
-Timer reset selectable on each module
-Monitor DIM function during cue and talkback
- ...and much more**
 - *Total Turret support
 - *External regulated Power Supply
 - *Mic Modules available w/Panning
 - *Line Modules available with Mode select
 - *Three Stereo output Buses
 - *Monitor System for Control Room and Two Studios
 - *Stereo Cue System
 - *Talkback to Two Studios
 - *Two User-transparent Telephone Mix-minus Buses-one for Program, one for Audition
 - *Four Stereo Output D.A. Module (optional)
 - *Remote Selector Module (optional)
 - *Built-in Digital Timer with controller (10 minute up timer)
 - *Two Year Warranty

12,000 SERIES CONSOLES

MAINFRAMES

The 12,000 Series console has three mainframe configurations. These are 8, 18, and 28 input channels. The mainframes are actually 10, 20, and 30 channels but a TOB1 output module and TCRM1 monitor module are required and use two mainframe positions. The mainframe is a 'Universal' bus design and any module can be placed in any position in the console. All module positions in the mainframe must be filled. To do this, an input module, option module, or blank module may be used. Standard color is Arrakis tan.

Deluxe Mainframes- a deluxe version of each mainframe may be purchased as illustrated on the brochure front page. Standard mainframes are tabletop mounted. The deluxe mainframe features thru-table mounting, 1/4" milled aluminum side panels, lighted VU meters, and deluxe oak trim system. The deluxe mainframe is available in *either* Arrakis platinum or tan colors.

I-O Connectors

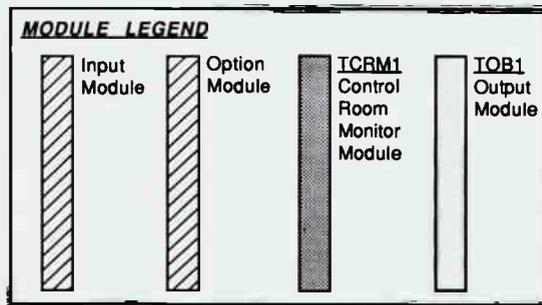
The VU meter housing hinges at the back to expose three internal connectors per module with the cabling exiting at the rear of the console. The connectors are AMP ML series, a major upgrade from Molex connectors common in the industry.

Construction

There is a motherboard for every 10 modules in the bottom of the console. This motherboard is passive. All active electronics are located on the front panel removable modules.

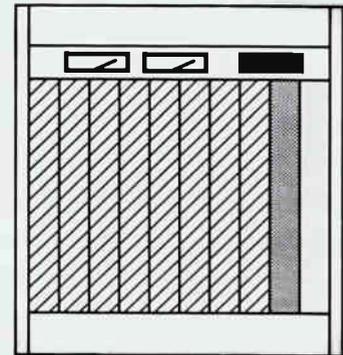
VU Meter Bridge

The Eight Channel has a single set of VU meters. These meters are selectable between the 3 stereo busses and two external inputs by the Monitor Selector switch on the TCRM1 module. The Eighteen and Twenty-Eight Channel mainframes have 3 sets of VU meters, one for each of the three stereo output busses. The Twenty-Eight Channel mainframe has a seventh meter for mono of Program. The third set of meters also follows the monitor select switch as in the Eight Channel console. All mainframes feature a 10 minute digital up timer. This timer can be reset by the individual modules when in the auto mode or manually controlled from the TCRM1 module.

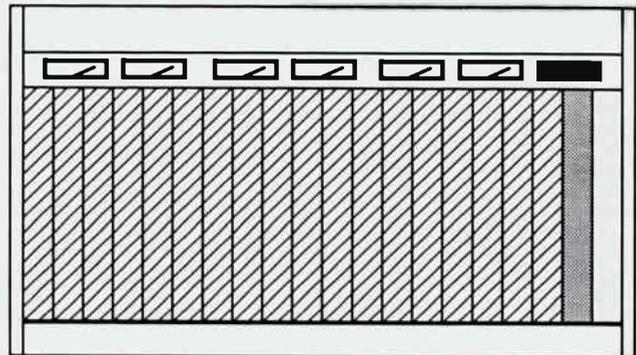


The basic systems come configured as shown at the right. Input modules can be used interchangeably with option modules. Modules can be placed in any position in the mainframe.

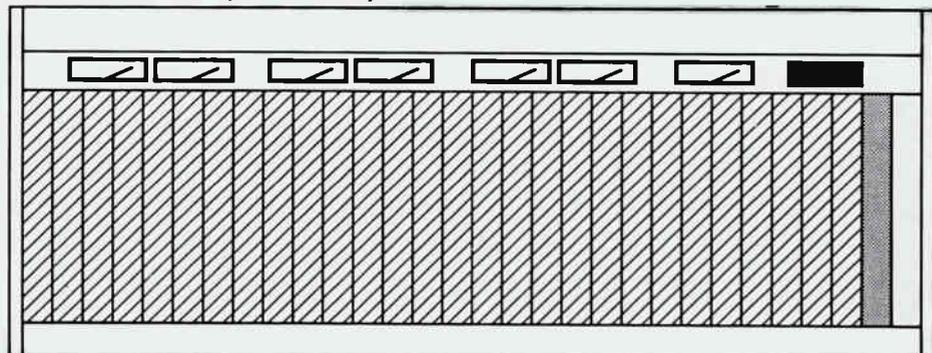
EIGHT CHANNEL (17" wide)

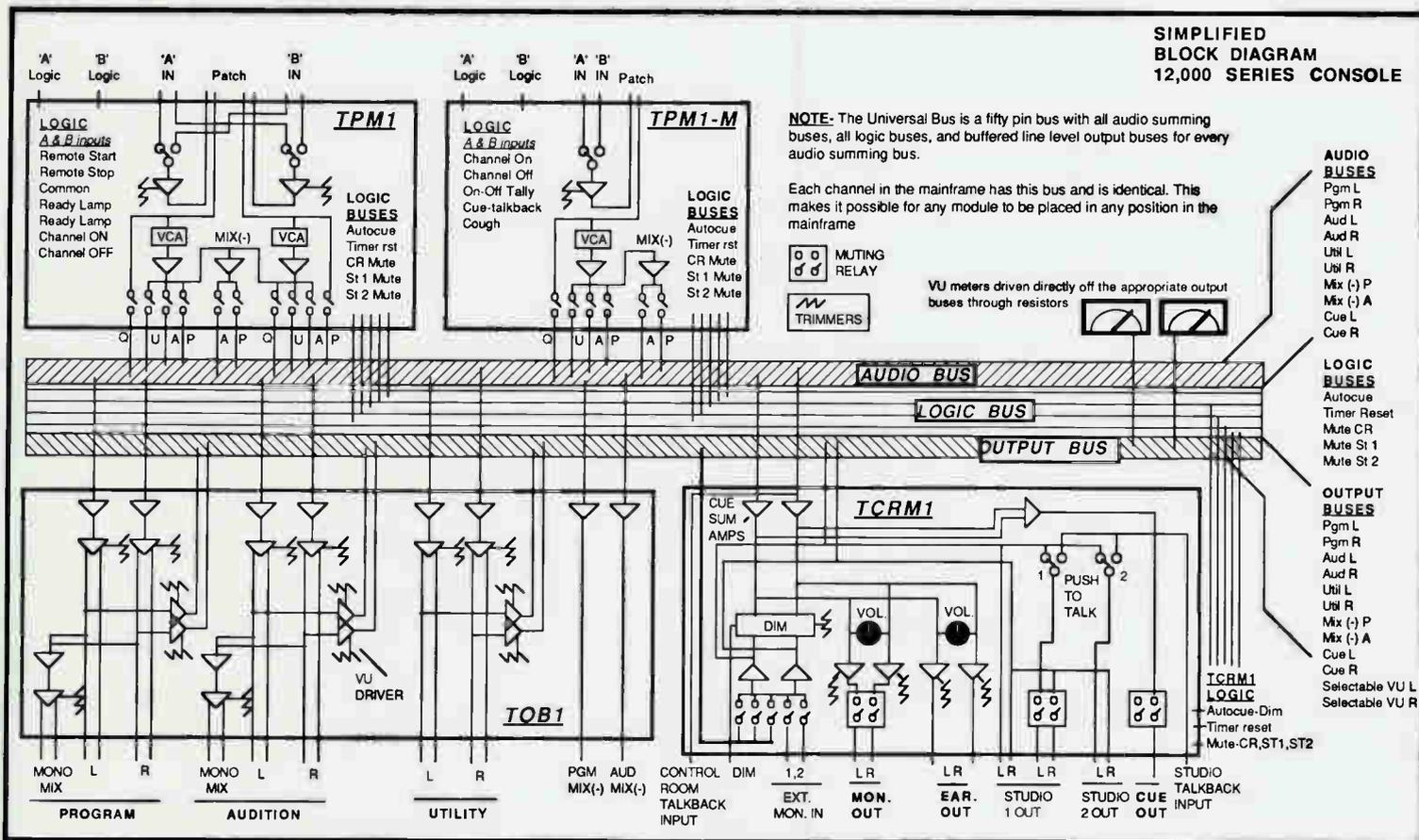


EIGHTEEN CHANNEL (32" wide)



TWENTY-EIGHT CHANNEL (47 1/4" wide)





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ELECTRICAL

Frequency Response- +/- .5dB
20Hz-20kHz

Noise

Mic- (-)75dB below +8dBV out with -50dBVin, 150 ohms
Line- (-)85dB below +8dBV out with +8dBVin, 600 ohms

Distortion- Total Harmonic-.01% Typical
(+8dBV in-out, 30kHz filter)

Crosstalk- (-)70dB at 20kHz

Impedances

Inputs-

Mic- 10,000 ohms balanced
Line- larger than 10,000 ohms, balanced

Outputs- 100 ohms balanced-unbalanced

Outputs

Program, Audition, Utility, Mono mix Pgm, Mono mix Aud. -balanced, +27dBV max output

Mix (-) Pgm, Mix (-) Aud-unbalanced, +27dBV max
Monitor-600 ohm unbalanced, +27dBV max output
Earphone-600 ohm unbalanced, +27dBV max
output into high-Z headphones

Cue-600 ohm unbalanced, +27dBV max output

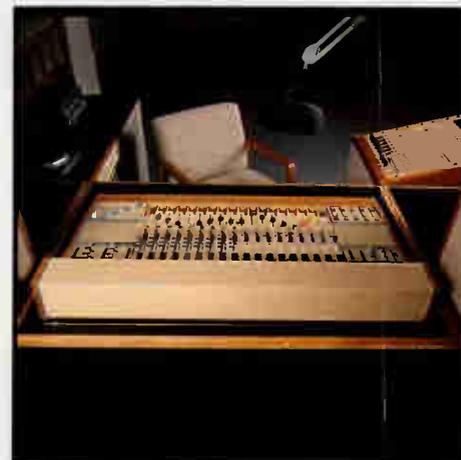
Tests are performed as per factory approved test procedures and equipment. Specifications are typical.

PHYSICAL

Dimensions- 7" high by 23" deep
8 Channel Mainframe-17" wide
18 Channel Mainframe-32" wide
28 Channel Mainframe-47 1/2" wide

10,000 Series console

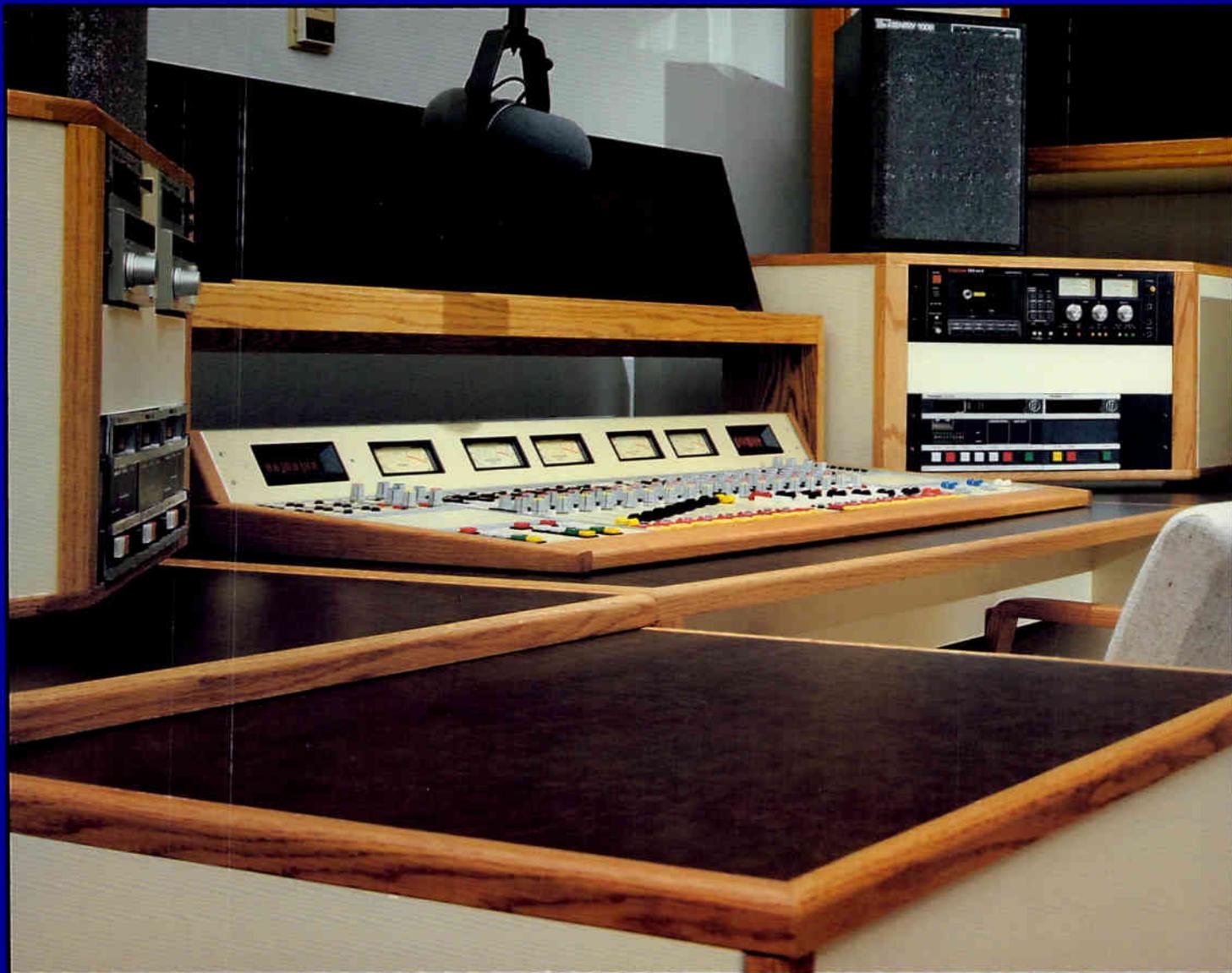
Inquire about other Arrakis console lines or Modulux furniture as shown at the right.



2619 MIDPOINT DRIVE
FORT COLLINS, CO 80525
(303) 224-2248

For detailed specifications and information on the 12,000 series of consoles, please call or write for-
12,000 SERIES TECHNICAL
INSTALLATION MANUAL
Publication #-IM-12,000-89

THE 10,000 SERIES AUDIO MIXING CONSOLE



arrakis
SYSTEMS, INC.

Easy to Operate



THE 10,000 SERIES AUDIO MIXING CONSOLE



The 10,000 SERIES audio mixing console is a total broadcast product. The 10,000 combines complete "ON AIR", Stereo production, and Multitrack production capability within a single product specifically designed for contemporary Radio and Television broadcasting.

Easy to Use

The 10,000 represents a leap forward in ergonomic console design. The console's module layout evolves from a simple ON AIR format by steps into a sophisticated multitrack production board. What was once a difficult to operate production console is now simply an evolved but familiar ON AIR board. The 10,000 can therefore be used throughout the station in every studio with dramatic results. This flexibility reduces training time, makes for fewer ON AIR mistakes, speeds production, simplifies service, reduces spare parts stock, and thereby dramatically smooths and improves station operation.

Attractive and rugged.

The 10,000 SERIES console is as rugged and reliable as it is attractive. The console is physically a combination of extruded aluminum rails, and heavy hardened aluminum panels. Motherboards beneath the modules interconnect the electronics with virtually no handwiring. The power supply is external, rack mounted, and protected. Solid oak trim accents the clean lines and earthtone colors of this rugged and reliable console.

10,000 SERIES AUDIO CONSOLE PRICE LIST

EFFECTIVE NOVEMBER 1, 1991

MAINFRAMES

ON AIR OR STEREO PRODUCTION MAINFRAMES

MODEL #	DESCRIPTION	\$ LIST
MF-12A	12 INPUT MODULE MAINFRAME - - - - -	\$ 4,999
MF-18A	18 INPUT MODULE MAINFRAME- - - - -	\$ 5,349
MF-24A	24 INPUT MODULE MAINFRAME- - - - -	\$ 5,999

NOTE- The mainframe comes complete with power supply, 4 Summing Amp Modules, 1 Monitor Selector Module with Control Room Monitor Module, 1 VU Meter Driver Module, 1 Timer controller module, and 1 Headset jack module. The customer must then fill the input module positions with either input modules (AIR 1,2,3 OR STEREO 1,2), or blank panels. If an Air 3, Stereo 1, or Stereo 2 module is purchased, then two XAX1 aux send -return modules must also be purchased

4-TRACK PRODUCTION MAINFRAMES

MODEL #	DESCRIPTION	\$ LIST
MF-12-4M	12 INPUT MODULE MAINFRAME - - - - -	\$ 7,795
MF-18-4M	18 INPUT MODULE MAINFRAME- - - - -	\$ 8,695
MF-24-4M	24 INPUT MODULE MAINFRAME- - - - -	\$ 9,595

NOTE- The mainframe comes complete with power supply, 2-Submaster modules, 1-Stereo Output Module, 2-Dual Slide Fader Controls, 1-Single Slidefader Control, 1-7 Position Remote Selector with Control Room Monitor Module, 2- aux send-return modules, and 1-VU meter Driver Module. The customer must then fill the input module positions with either input modules (Multitrack Four) or blank panels. An optional Multichannel monitor mix module (XMC1) and/or a Slate-oscillator module (XOS1) are two recommended mainframe option modules.

8-TRACK PRODUCTION MAINFRAMES

MODEL #	DESCRIPTION	\$ LIST
MF-18-8M	18 INPUT MODULE MAINFRAME- - - - -	\$ 9,695
MF-24-8M	24 INPUT MODULE MAINFRAME- - - - -	\$ 10,495

NOTE: The mainframe comes complete with power supply, 4-Submaster modules, 1-Stereo Output Module, 4-Dual Slider Fader Control Modules, 1-Single Slide Fader Control Module, 1-7 Position Remote Selector with Control Room Monitor Module, 2- aux send-return modules, and 1-VU Meter Driver Module. The customer must then fill the input module positions with either input modules (Multitrack Eight) or blank panels. An optional Multichannel monitor mix module (XMC1) and/or a Slate-oscillator module (XOS1) are two recommended mainframe option modules.

INPUT MODULES- (1 1/2" x 17")

MODEL #	DESCRIPTION	\$ LIST
XAR1	AIR ONE-(basic module) - - - - -	\$ 531
XAR2	AIR TWO-(Air One plus pan/balance) - - - - -	\$ 595
XAR3	AIR THREE-(Air Two plus two aux sends) - - - - -	\$ 628
XST1	STEREO ONE-(Air Three plus three band equalization) - - - - -	\$ 880
XST2	STEREO TWO-(Stereo One plus quasi parametric EQ) - - - - -	\$ 935
XMT4	MULTITRACK FOUR-(four track multitrack production module) - - - - -	\$ 880
XMT8	MULTITRACK EIGHT-(eight track multitrack production module) - - - - -	\$ 935
XBK1	BLANK INPUT MODULE-(fills any unused input module position) - - - - -	\$ 40

NOTE- On Air and Stereo Production mainframes come standard without aux send-return modules (XAX1). If an input module with aux sends is chosen such as an Air 3, Stereo 1, or Stereo 2, then two aux-send return modules *MUST* be purchased for the mainframe.

10,000 SERIES AUDIO CONSOLE PRICE LIST (cont.)

EFFECTIVE NOVEMBER 1, 1991

CONSOLE SUPPORT MODULES- (1 1/2" x 5")

This is a listing of the standard modules used in the 10,000 SERIES console line.

MODEL #	DESCRIPTION	\$LIST
XSM1	SUMMING AMP MODULE-(stereo summing amp with 600 ohm output driver) -----	\$215
XSB1	SUBMASTER MODULE-(summing amp output module for multitrack) -----	\$325
XMM1	STEREO OUTPUT MODULE-(stereo/mono output module for multitrack) -----	\$329
XSL1	7 POSITION MONITOR SELECTOR-(used as input select for CR Monitor Module) --	\$160
XCR1	CONTROL ROOM MONITOR MODULE-(monitor, earphone, and cue controls)-----	\$389
XVU1	VU METER DRIVER MODULE ON AIR-(drives up to 11 VU meters, trim adjust)-----	\$395
XVU2	VU METER DRIVER MODULE MULTITRACK -(drives up to 11 VU meters, trim adjust)	\$395
XAX1	AUX SEND/RETURN MODULE-(aux send and return with assign and solo) -----	\$395
XTM1	TIMER CONTROLLER MODULE-(timer start, stop, reset, manual-auto) -----	\$99

OPTION MODULES - (1 1/2" x 5")

This is a list of option modules that may be placed in the 10,000 mainframe. Refer to the manual for specific information.

MODEL #	DESCRIPTION	\$LIST
XSTM	STUDIO MONITOR MODULE-(monitor module with X7P1 selector switch for studio control) -----	\$389
XMC1	MULTICHANNEL MONITOR MIX-(4 into 2 submixer for multichannel monitoring)---	\$445
XOS1	SLATE/OSCILLATOR MODULE-(slating, plus test oscillator) -----	\$445
XTL1	TELCO MODULE-(create mix-minus for 4 hybrids)-----	\$325
XSF1	SINGLE SLIDE FADER CONTROL PANEL-(for Master fader applications)-----	\$145
XSF2	DUAL SLIDE FADER CONTROL PANEL-(for Master fader applications)-----	\$205
XEQ1	STEREO EQUALIZER-(three band quasi-parametric plus low pass filter)-----	\$380
XCP1	WIDEBAND STEREO COMPRESSOR / NOISE GATE -----	\$380
XIC1	FIVE STATION INTERCOM -----	\$380
X7P1	7 POSITION REMOTE SELECTOR #1-(used as remote input select) -----	\$160
X7P2	7 POSITION REMOTE SELECTOR #2-(connectorized- does not require a motherboard - used as remote input select)-----	\$160
XCT1	CART REMOTE CONTROL PANEL- (5 buttons unwired) -----	\$99
XRR1	REEL TO REEL CONTROL PANEL- (5 buttons unwired)-----	\$99
XDA1	DISTRIBUTION AMPLIFIER- (5 output stereo D.A.) -----	\$250
XHS1	HEADPHONE JACK MODULE- (panel with stereo headphone jack)-----	\$39
XRS1	ROUTING SWITCHER CONTROL MODULE (Two 16 position thumbwheels) -----	\$129
XBK2	5" ACCESSORY BLANK MODULE -----	\$24

POWER SUPPLIES

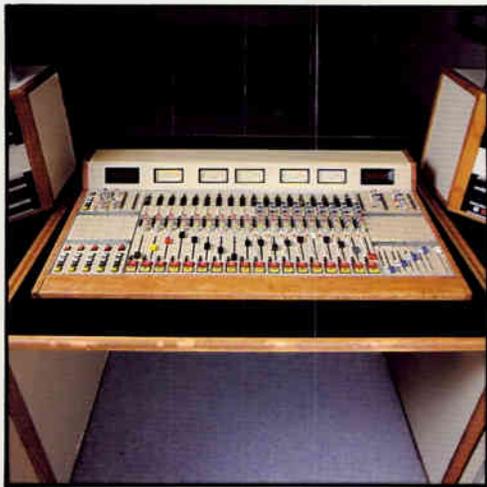
MODEL #	DESCRIPTION	\$LIST
XSCT	SC SERIES POWER SUPPLY (1.5 amp and 3.0 amp) -----	\$595
XPS3	3.0 AMP POWER SUPPLY -----	\$495
XPS5	5.0 AMP POWER SUPPLY -----	\$650
XPS48	48 VOLT PHANTOM POWER SUPPLY -----	\$350

TURRETS- The 10,000 SERIES console line is completely supported by an optional line of turrets. Refer to the turret price list for these support products.

Reliable performance

For performance and reliability, the 10,000 is almost entirely DC controlled through the use of VCA's and electronic switching. Even such audio sidepaths as the auxiliary sends use VCA's. This attention to detail has made the 10,000 totally transparent to audio. Further, the use of only the finest quality components throughout, Penny and Giles slide faders, ITT Schadow switches, and our VCA technology makes the 10,000 the most mechanically and electrically reliable console that can be built today.

Functional and Attractive



Easy to install and service

To ease installation and access to the interior of the console, the mainframe is hinged at the rear. The console then hinges up entirely out of the table with the assist of air springs. This reveals the strain relieved connectors installed on the bottom of the motherboards for all input/output wiring. The 10,000 can therefore be entirely installed and serviced from the front of the console. To further improve ease of service, the 10,000 is entirely modular in design with all electronics and even the motherboards capable of simple plug-in replacement. On the individual PC boards, all integrated circuits are socketed. All printed circuit board connectors are gold plated. Attention to detail makes the 10,000 flexible and friendly in a real broadcast environment.

Easy to Install and Service



Uniquely world-class

The 10,000 Series console is a uniquely qualified world class console. It is not simply a reshuffling of old ideas and technologies. Instead the 10,000 strikes out into new areas with the flexibility of its multifunction design. The use of DC controlled switching and VCA control brings previously unknown levels of function and reliability to the 10,000. Its rugged design and use of premium grade components makes it ideal for the rigorous professional broadcast environment and yet its appearance would accent the decor of the space shuttle. Timeless grace, classic engineering, and an unflinching commitment to excellence, makes the 10,000 series broadcast console the new standard of comparison.



FEATURES

- **"ON AIR"**
 - "4 or 8 Track" production, or "Stereo Production" all in one standard mainframe
- **Full multistudio support**
 - Turrets
 - Multistation intercom
 - Multistation monitor system
- **Full "On Air" Machine Control**
 - Independent control of starting and stopping of sources
 - Comprehensive remote control of module and console functions such as volume, On, Off, Ready, etc.
 - Three Muting Busses
- **Expansive Buss Structure**
 - Four stereo Output busses
 - Stereo Cue buss
 - Stereo Solo buss
 - Two stereo Aux send busses
 - Stereo mixdown buss
 - Mono mixdown buss
- **Internal Audio Processing**
 - Mono or stereo tracking equalizers on individual input modules
 - Pan/balance controls on mono and stereo input modules
 - Two stereo aux send busses for feeds and effects
 - Balanced patch points on all signal paths for insertion of console optional effects modules such as compressors, limiters, noise gates, equalizers, reverb controllers, etc.
- **Fifteen option module positions within the mainframe**

SPECIFICATIONS

ELECTRICAL

Frequency Response- +/- .5dB
20Hz to 20kHz

Noise-

Mic- -75dB below +8dBv output
with -50dBV input at 150 ohms
Line- -85dBV below +8dBV output
with +8dBV input at 600 ohms

Distortion- Total Harmonic
.01% (30kHz filter)

Interchannel Crosstalk- 75dB
at 20kHz

Impedances-

All inputs- larger than 10,000 ohms
balanced
Line Level Outputs- smaller than 50
ohms balanced

Output Levels-

Main outputs- line level, +27dBm
max into 600 ohms
Cue and Earphones- 2 Watts at 8
ohms per channel
Monitor output - line level- +27dBm
max into 600 ohms

Tests are performed as per factory
approved test procedures and
equipment. All specifications are
typical.

Specifications are subject to change
without notice as advances in
technology are incorporated

PHYSICAL

Dimensions- 5¼" high x 27¾" deep
18 Channel Mainframe - 45¼" wide
24 Channel Mainframe - 54¼" wide
30 Channel Mainframe - 63¼" wide
36 Channel Mainframe - 72¼" wide

For detailed specifications and
information on the 10,000 Series
console, please call or write for -
10,000 SERIES SALES MANUAL
Publication #-SM-10,000-88



2619 MIDPOINT DRIVE
FORT COLLINS, CO 80525
(303) 224-2248



THE DIGILINK FAMILY OF DIGITAL AUDIO PRODUCTS FOR RADIO BROADCAST



The Digilink digital audio system

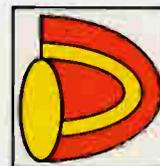




Digilink can be used Live ON AIR...

Digilink training studio
located above

THE DIGILINK FAMILY OF DIGITAL AUDIO PRODUCTS



The Digilink family of digital audio products for radio completely revolutionizes radio as we know it today. Digilink replaces cart machines, cassette recorders, reel to reel machines, and all other magnetic tape based record-play equipment in live or automated radio studios. It brings together the full quality of 16 bit CD digital recording, the flexibility of computer controlled automation, and the maintenance free nature of digital storage to create the ultimate record-play environment for radio. Even with all of these advantages, Digilink costs significantly less than the analog tape equipment it replaces.

CD Audio Quality

Digilink records full 16 bit CD quality audio. Digilink can optionally even work with digital audio in the AES-EBU format. The tremendous performance advantages of Digilink over tape based analog recordings are...

- (1) Distortion- *.008% THD typical*
- (2) Dynamic range- *over 85dB*
- (3) Stereo Phasing- *no stereo phase error*
- (4) Wow and flutter- *nonexisting*

These advantages of ultra low distortion, incredibly low noise, and ruler flat frequency response, combine to make Digilink performance far superior to any analog tape based recording technologies.

No Maintenance

Digilink records on hard disks, floppy disks, removable optical disks, or any other SCSI based digital storage medium. It does this exactly the way that you would store a business letter on your home computer. Because Digilink stores audio digitally, there is no tape or cartridge to wear out. Digilink hard disks have over 15 years of average projected life and require no maintenance. This means that there are no more tape head alignments to do daily or weekly. With over a decade of average life, no required maintenance, and no new cartridges to buy periodically..., Digilink is the perfect audio record-play product for radio.

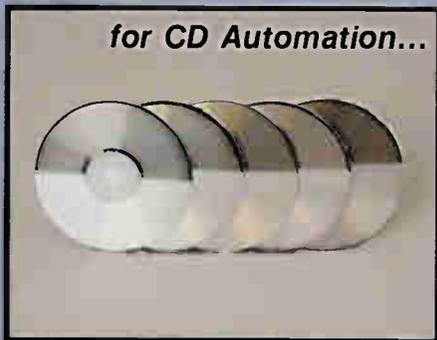
Live or Automated Play

Because it is a computer based system, Digilink can perform all four applications shown at the left from live play to full automation. Digilink is perfect for replacing cart machines for live On Air play because you can either simply select audio files manually or preload your files before you go On Air. Digilink interfaces for Satellite and tape automation right out of the box or can interface through an optional Digilink controller for CD automation.

for Satellite Automation...



for CD Automation...



or for Tape Automation...



DIGILINK ORDERING INFORMATION

April 1992

BASIC SYSTEMS

MODEL #	DESCRIPTION	\$ LIST
	DIGILINK TWO*	
DL2-360	6 HOUR SYSTEM (stereo, 4:1 compress, 32kHz sampling)	\$9,995
DL2-600	10 HOUR SYSTEM (stereo, 4:1 compress, 32kHz sampling)	\$11,995
DL2-AES	AES-EBU OPTION (provides AES-EBU digital audio interface)	preliminary
DL2-TWO	DUAL PLAY OPTION (second play for background automation)	preliminary

NOTE 1- all basic systems come complete with Digilink Controller, 14" VGA color monitor, keyboard, mouse, Digilink 5 input satellite mixing-routing switcher, full standard software package, manual, installation kit with connectors, and cables.

NOTE 2- record times are approximate. Mono doubles record time relative to stereo. 16kHz sampling rates for AM have double the storage of 32kHz sampling rates.

DIGILINK HARD DISK AUDIO STORAGE

MODEL #	DESCRIPTION	\$ LIST
DS-10	10 HOURS- (single drive in five drive cabinet, for added audio storage)	\$4,995
DS-20	20 HOURS- (two drives in five drive cabinet, for added audio storage)	\$7,995
DS-30	30 HOURS- (three drives in five drive cabinet, for added audio storage)	\$10,995
DS-40	40 HOURS- (four drives in five drive cabinet, for added audio storage)	\$13,995
DS-50	50 HOURS- (five drives in five drive cabinet, for added audio storage)	\$16,995

NOTE 3- all drives come fully formatted and tested with Digilink software. Third party drives may not be used. Double times for mono operation.

DIGILINK COMPUTER ACCESSORIES

MODEL #	DESCRIPTION	\$ LIST
DL-TK	TRACKBALL (serial interface)	\$179
DL-TC	TOUCH SCREEN MONITOR (14" VGA with software)	\$3,995
DL-2KY	KEYBOARD DOUBLER (extends keybd, mouse, and monitor up to 100')	\$1,395
DL-PR	PRINTER (9 pin dot matrix)	\$495
MOD1	MODEM (external serial)	\$445
NET1	NETWORK BOARD (Ethernet with Digilink software)	\$495

NOTE 4- keyboard doubler allows control of a Digilink system from one of two separate points.

NOTE 5- Modem is used to update system software directly from the factory or for factory diagnostics

NOTE 6- Network Board and software interconnect multiple Digilink systems via Lantastic.

HARDWARE OPTIONS

MODEL #	DESCRIPTION	\$ LIST
DL-SW-4EX	4 CHANNEL MIXING SWITCHER EXTENDER- (selects any combination of 4 inputs. Requires DL-PS-1 power supply)	\$295
DL-SW-7EX	7 CHANNEL ROUTING SWITCHER EXTENDER- (selects 1 of 7 inputs. Requires DL-PS-1 power supply)	\$295
DL-CN-5SC	5 CHANNEL RACK MOUNTED CONSOLE	\$1,495
DL-PS-1	POWER SUPPLY- (for 1 or 2 DL-SW-EX switcher extenders)	\$149
DL-CD	MULTIPLAY CD CONTROLLER- (controls up to 8 Pioneer PDM-400 series machines)	\$1,495

NOTE 7- the extended switchers may be added to the basic 5 channel switcher to increase total inputs.

The extended switcher may be added to either or both the satellite switcher and the record input.

NOTE 8- up to eight DL-CD controllers are supported by the system software.

SOFTWARE OPTIONS

MODEL #	DESCRIPTION	\$ LIST
DT-8MT	DIGITRAC SOFTWARE MODULE- (8 channel multitrack digital editing system)	\$1,995

NOTE 9- Digilink exports and imports Traffic and Music schedules in standard systems. Many 3rd party traffic, billing, and music scheduling systems have interfaced to Digilink. Call the factory for a list of compatible software vendors.

NOTE 10- Digitrak editing software will run on a Digilink Two machine.

*NOTE- a Digilink One System can be fully upgraded into a Digilink Two system for \$4,995 with exchange.

IMPORTANT- Only Arrakis Digilink hardware and software may be used with a Digilink system or the warranty can not be supported

For further information, call Arrakis Systems at (303) 224-2248 or FAX at (303) 493-1076

SYSTEM CONFIGURATIONS

BASIC SYSTEMS

MODEL #	DESCRIPTION
DL2-360	6 HOUR SYSTEM (stereo, 4:1 compression, 32kHz sampling)
DL2-600	10 HOUR SYSTEM (stereo, 4:1 compression, 32kHz sampling)
DL2-AES	AES-EBS OPTION (provides AES-EBU digital audio interface)
DL2-TWO	DUAL PLAY OPTION (second play for background automation)

NOTE 1- all basic systems come complete with Digilink Controller, 14" VGA color monitor, keyboard, mouse, Digilink 5 input satellite mixing-routing switcher, full standard software package, manual, installation kit with connectors, and cables.

NOTE 2- record times are approximate. Mono doubles record time relative to stereo. 16kHz sampling rates for 7.5KHZ AM have double the storage of 32kHz sampling rates. 10KHZ AM available

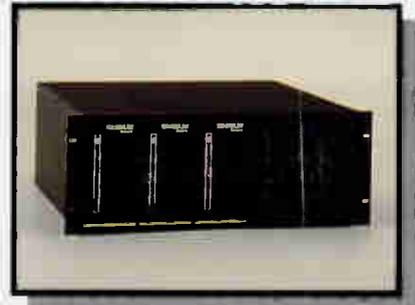
NOTE 3- AES-EBU OPTION- provides an AES-EBU digital input-output to the system.

NOTE 4- DUAL PLAY OPTION- a second DSP card added for background automation play.

Digilink rack mount Console



Hard disk storage



DIGILINK HARD DISK AUDIO STORAGE

MODEL #	DESCRIPTION
DS-10	10 HOURS- (single drive in five drive cabinet, for added audio storage)
DS-20	20 HOURS- (two drives in five drive cabinet, for added audio storage)
DS-30	30 HOURS- (three drives in five drive cabinet, for added audio storage)
DS-40	40 HOURS- (four drives in five drive cabinet, for added audio storage)
DS-50	50 HOURS- (five drive in five drive cabinet, for added audio storage)

NOTE 5- the hard disk storage cabinet provides added audio storage for the basic systems. All drives come fully formatted with Digilink software. Third party drives may not be used.

NOTE 6- all drives listed above are 1.2GB. Contact the factory for larger drive systems.

HARDWARE OPTIONS

MODEL #	DESCRIPTION
DL-SW-4EX	4 CHANNEL MIXING SWITCHER EXTENDER (selects any combination of 4 inputs)
DL-SW-7EX	7 CHANNEL ROUTING SWITCHER EXTENDER (selects 1 of 7 inputs)
DL-CN-5SC	5 CHANNEL RACK MOUNTED CONSOLE
DL-PS-1	POWER SUPPLY (for one or two DL-SW-EX switcher extenders)
DL-CD	MULTIPLAY CD CONTROLLER (controls up to 8 Pioneer PD machines)

NOTE 7- the extended switchers may be added to the basic 5 channel switcher to increase total inputs. The extended switchers may be added to either or both the satellite switcher and the record input.

NOTE 8- up to eight DL-CD controllers are supported by the system software.

CD Controller



DIGILINK COMPUTER ACCESSORIES

MODEL #	DESCRIPTION
DL-TK	TRACKBALL (serial interface)
DL-TC	TOUCH SCREEN MONITOR (14" VGA with software)
DL-2KY	KEYBOARD DOUBLER (extends keybd, mouse, and monitor up to 100')
DL-PR	PRINTER (9 pin dot matrix)
MOD1	MODEM (external serial)
NET1	NETWORK BOARD (Ethernet with Digilink software)

NOTE 9- keyboard doubler allows control of a Digilink system from one of two separate points.

NOTE 10- Modem is used to update system software directly from the factory or for factory diagnostics

NOTE 11- Network Board and software interconnect multiple Digilink systems via Lantastic network.

Extended switchers



2619 Midpoint Drive, Fort Collins, CO 80525
Voice (303) 224-2450 FAX (303) 493-1076

A Digilink demo disk is available.
DL-DEMO-2, Minimum system is a 286 PC compatible with VGA monitor

For detailed specifications and information on Digilink, please request
DIGILINK TECHNICAL
INSTALLATION MANUAL
Publication #-SM-DL-92

OPERATING DIGILINK

Digilink is the advanced radio oriented video user interface illustrated at the right. The operator never leaves this display whether he is On Air or performing sophisticated waveform editing. Simply select the 'Studio Mode' such as 'On Air' in the box on the left. Then select the function from the 'Operation' box below it such as 'Live Assist.' The next appropriate live assist stopset will then automatically appear based on the current time and date ready for play. Note the VU meter in the upper middle and the familiar recorder type controls at the bottom. Observe the time remaining clock at the left corner and the time of day clock in the right corner. Notice how the audio file directories are naturally divided into 12 radio oriented 'Categories' at the right. This simple and yet advanced video display may be controlled by keyboard, mouse, trackball, or even touch video screen.

Digilink supports several basic forms of operation...

In the **Stereo Production Mode**, Digilink emulates an analog recorder with user friendly standard tape controls such as Record, Rewind, Play, Fast F, Stop and Cue. This mode also combines the best of digital production with noise free multiple recordings. Digilink will even automatically begin recording when audio starts for tight production. 'Graphical Waveform Editing' of the audio for cut and splice production applications is much faster and easier to use than reel to reel machines. The fast, intuitive, Digilink audio production mode brings true CD quality recording to the radio studio.

In the **Manual Mode**, Digilink is simply used as an analog cart machine replacement. It does this 'Manually' as a build while you play sequence.

In the **Live Assist Mode**, the audio sequences are preprogrammed. All your commercials, station ID's, magic calls, etc. can be preprogrammed and automatically brought up while live on air. Even though preprogrammed, the sequence can still be modified before or during play.

In the **Satellite Automation Mode**, Digilink replaces the entire standard complement of cart machines, reel to reel machines, switchers, and controllers. Digilink contains the entire commercial library plus liners, ID's, jingles, promos, PSA's, sound effects, weather, news, or any other audio file that you may want. Digilink reduces hardware expense while improving sound, simplifying operation, and reducing maintenance. With Digilink, up to 7 days of walk away schedules may be created which automatically adjust for jock schedules and Network stopsets. With automatic error checking of inputted schedules, and past kill date commercials, Digilink dramatically improves the quality of satellite formatted radio station audio. Printed logs from Digilink will automatically track actual ON AIR play of commercials and network errors. With its capacity to be easily changed at any time, even during playback, Digilink is the perfect solution for satellite automation systems.

In the **Automation Mode**, Digilink can be a full automation system with unmatched flexibility. In this mode, Digilink may contain the complete commercial library and thousands of songs in instant access hard disk storage. Another alternative is where Digilink controls multiplay CD machines for the music while the hard disk supplies the commercials, ID's, liners, promo's, etc.

Play, Edit, and On Air Screens...

PLAY AN AUDIO FILE



To play a file, select a category from the 'Categories' box, scroll through selected directory, select a file, and then hit the 'Play' button.

EDITING AUDIO FILES



In the 'Production' mode, 'Edit' may be selected. Under edit, multitrack mixing and reel machine type cut and splice editing are featured.

MANUAL ON AIR PLAY



When the 'On Air' mode is selected, either 'Manual' operation or several forms of automation may be selected. Under 'Manual,' you may play individual files or build up a sequence of files that will play back to back.

SATELLITE AUTOMATION



In the 'Satellite' automation mode under 'On Air,' the system will display time to next scheduled spotset and will automatically play commercials, liners, station ID, etc.

Scheduling Screens...

Utility and Setup Screens...

Under the 'Schedule's button, automation scheduling may be set up. The 'Clock' shown at the right programs an hour for scheduled play of spotsets.

SETTING UP A CLOCK



Under the 'Air Schedule' button, the announcer and type of hour are chosen. Any of up to 40 announcers are available. Each hour may be selected for satellite, live assist, manual, or full automation operation.

SETTING UP AN AIR SCHEDULE



Once the type of hour is set up under 'Air Schedule', the actual audio files may be entered to play during that hour. In this screen, you select the specific stopset to fill.

SETTING UP A PLAY SCHEDULE



Once the specific stopset is selected, you can now enter the audio files to be scheduled. Note that it shows total time. It will not allow the stopset to be recorded if it is too long.

ENTERING A PLAY SCHEDULE



Digilink only leaves the main screen for 'Set up' or computer type 'Utility' operations. The screen at the right shows system information available under the 'Utility' button.

SYSTEM INFORMATION



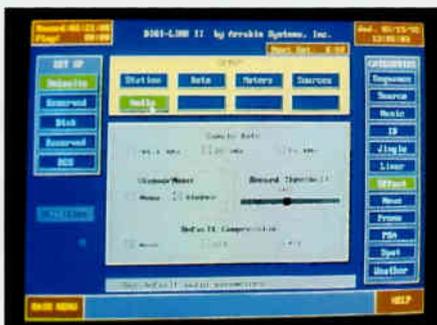
Under 'Utility,' a number of basic operations are available. File operations such as unerase are shown at the right.

FILE OPERATIONS



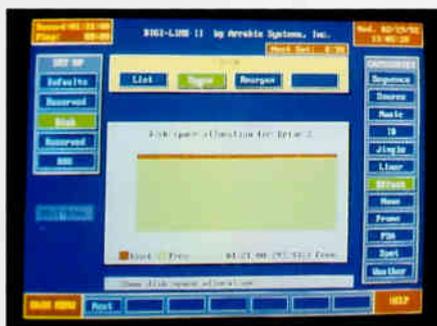
When the system is initially installed, a number of original 'Set up' type operations must be performed. The screen at the right illustrates basic setup defaults.

SETUP DEFAULTS



The screen at the right shows 'Disk' operations. This operation shows how the disk space is being currently used on the drive. Green is available space, Red is recorded space.

DISK OPERATIONS



Simultaneous record-play capability

Digital audio systems have the unique capability of multiple simultaneous operations. A single Digilink workstation can simultaneously play, record, and transfer over a network at the same time. This makes it possible for Digilink to be playing to Air *and* recording a new commercial spot simultaneously. With the 'Dual Play' option, Digilink can be playing unobtrusively in the background for automation while you play-record-edit-and network transfer a new production.

Digital Editing for Production

Digilink features two types of digital editing. The first is cut and splice, reel to reel type editing eliminating tape and razor blade. The second is multitrack editing and mixing. Either mode makes noise free multiple generations and is quick and easy to use with actual display of the waveform as it is edited.

Network multiple Digilink workstations

Digilink workstations may be digitally networked to transfer audio and scheduling information between studios. Because the audio never goes to analog, there is not loss of audio quality as it is transferred across the network. Non-Digilink computers may be placed on the network for traffic or music scheduling. If a network is not used, audio and scheduling may be transferred between studios on floppy disks.

Music and Traffic scheduling

Digilink is designed to import and export music and traffic schedules from third party software systems. This enables you to quickly and easily assemble your log on your favorite program and then simply transfer the log into the Digilink schedule by floppy or over the network.

Digilink is manufactured by our DL Division

Digilink uses a DL division designed and built DSP card, SCSI interface card, I-O card, audio routing switcher, rack mount cabinet systems, and cables. Most competitive digital systems simply purchase third party hardware and add their own software. With Digilink, the hardware is broadcast quality. Manufacture by our DL division assures long term customer service where competitive systems may no longer have access to the digital PC boards. Digilink even has a processor direct slot for future system updates as digital processing power increases.

Installation, Training, and Service

The factory provides telephone support for local installation or on site installation may be arranged. Training on the system is available either at the factory or in the field at your station. The factory has a complete training studio with live, satellite, and CD automation capabilities. For service, Digilink has an extensive factory diagnostic test program that may be accessed by the factory and stepped through over the phone.

Digital radio is here now and makes money...

It is impossible to cover, in a single brochure, all of the revolutionary features and capabilities that Digilink brings to broadcast radio. For decades, radio studios have changed little from an analog console with tape based audio sources. With the advent of Digilink, a studio need only be a mic..Digilink... monitor amp... and speakers. Connect several Digilink studios by network and you create a complete digital station. Place the total station music library on hard disk on the network. A small edit studio can be used to transfer analog records, tape, or carts into the hard disk music library. All production is performed digitally with the Digilink multitrack editor feature. Any studio can operate live or perform hard disk automation to air. Because the cost of hard disk storage is now actually less expensive than analog, the digital radio station of tomorrow is here today. With Digilink, the promise of creative, competitive, *profitable* radio has arrived.

FEATURES

- full 16 bit CD quality
- Record and play at the same time
- Dual play with record option
- AES-EBU digital audio options

- full Satellite automation
- full CD automation
- full Tape automation
- full Hard disk automation

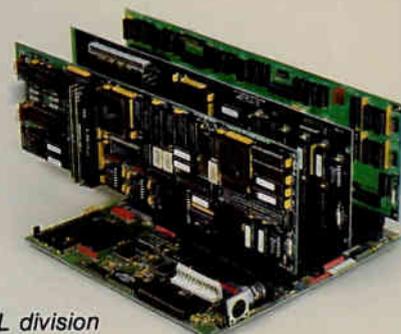
- use Digilink Multitrack Editing for Production
- use digital Networks to link systems
- use 3rd party traffic and music scheduling

- Multiple compression ratios- 1:1, 2:1, 4:1
- Supports mono *and* stereo files
- Random access- instant cueing
- No maintenance- 15 year average life

Basic Digilink controller



Rear view of Basic Digilink controller



DL division
DSP, SCSI, and digital I-O cards

3 June 1992



**DIGILINK
SALE
PRICES !**

NOTICE

***NAB '92
SALE PRICES
EXTENDED !***

**WE ARE PLEASED TO ANNOUNCE THAT,
DUE TO THE OVERWHELMING SUCCESS OF
THE NAB DIGILINK PROMOTION,
THIS SALE WILL BE EXTENDED TEMPORARILY.**

PLEASE REFER TO THE CURRENT DIGILINK PRICE SHEET, (APRIL 1992)

SALE PRICES ARE AS NOTED BELOW:

DL2-360 DIGILINK 6 HOUR SYSTEM \$7,995

DL2-600 DIGILINK 10 HOUR SYSTEM \$9,995

**PLEASE CHECK WITH YOUR HARRIS-ALLIED SALES REPRESENTATIVE TO
VERIFY SALE EXTENSION DATE**



2619 MIDPOINT DRIVE
FT. COLLINS, CO 80525

THE 10,000 SERIES ARRAKIS CONSOLES

by Dennis Ciapura



The industry best knows Arrakis for its line of mixing consoles for radio broadcast applications. Since 1979, the company has worked hard to forge a product image based on value and simplicity of design. It recently produced a new series of consoles designed to broaden its product line and meet the needs of stations looking for more versatility. To successfully break into the competitive premium console market calls for top performance and quality construction at an attractive price.

Performance at a glance

- Frequency response: $\pm 0.5\text{dB}$ 20Hz to 20kHz
- Noise, mic: -75dB below $+8\text{dBv}$; line: -85dB below $+8\text{dBv}$
- Distortion: 0.01% (30kHz filter)
- Four output buses
- Stereo cue bus
- Two stereo aux send buses
- Mono or stereo-tracking EQ on individual modules
- Pan/balance controls on stereo and mono inputs
- Balanced patch points
- dc control of audio functions
- 15 optional module positions within mainframe

Basic features

The Arrakis 10,000 series of consoles ranges from a basic 12-channel mixer to a 30-input/8-output production device. This model contains almost every type of feature a station might need: EQ, a slate tone, gated compressor/limiter, aux send/return, 5-station intercom, telco module with mix-minus for four hybrids, nine VU meters, a clock and a timer. An array of master, sub-master and summing modules also is available. The company also can provide custom mainframes in multiples of six channels.

We were anxious to see just how good the new console was. At our request, Allied Broadcast Equipment arranged to have a sample 10,000 detoured to our lab for a few days of extensive testing and quality evaluation.

Internal design

Every console is a reflection of the designer's philosophy about such things as passive or VCA mixing or active or transformer coupling. There are good and bad examples of each approach with about an equal sprinkling of each among the best-selling models. Those who advocate the audio on the pots and switches feel strongly about the relative ease of troubleshooting. Proponents of VCA attenuation and FET switching are attracted to the audio isolation and options for logic control that active circuitry affords. A block diagram of a broadcast configuration is shown in Figure 1.

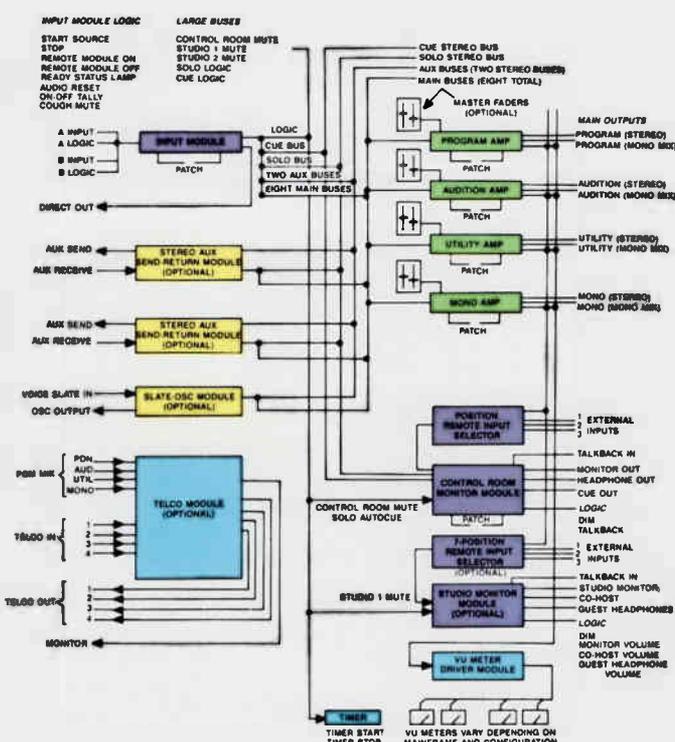


Figure 1. Basic block diagram of a typical broadcast-configured console. The versatile design provides for configurations that can adapt to any need, up to a 30x8 model.

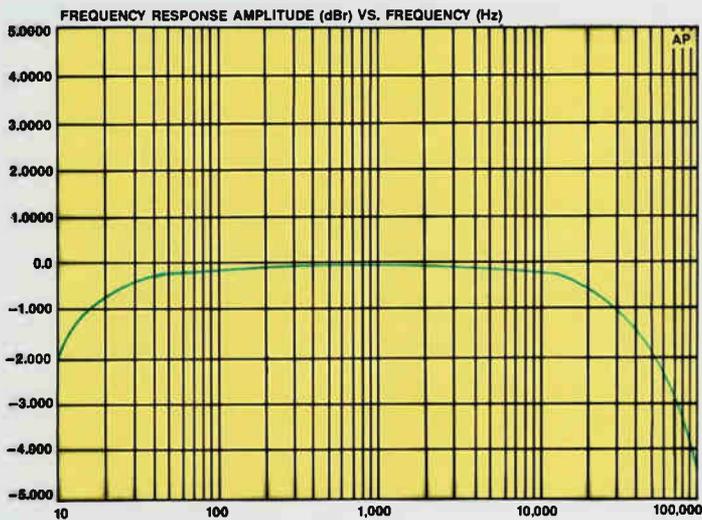


Figure 2. Frequency response measured at +8dBm using a line-level input.

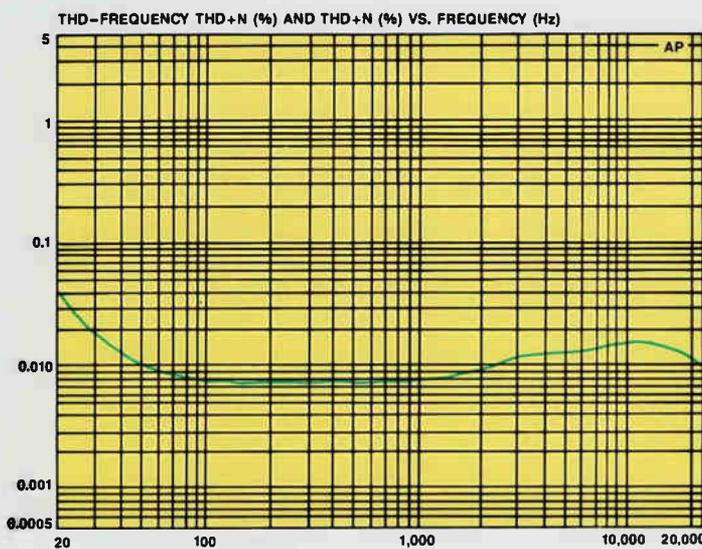
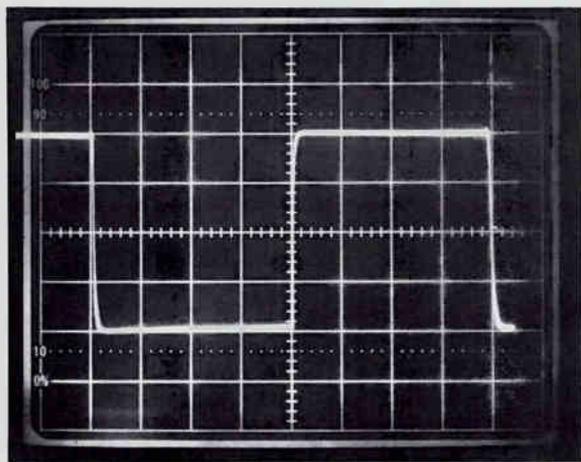


Figure 3. Measured THD through line inputs at +8dBm. Distortion dropped as low as 0.008% at approximately 200Hz.



The 2kHz square-wave response measured at +8dBm.

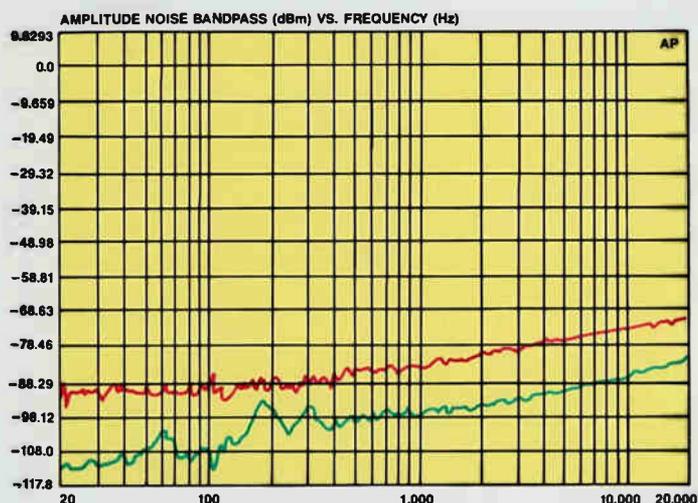


Figure 4. Noise vs. frequency. The upper curve represents a microphone input; the lower curve represents the performance of a line input.

There was a time when the use of VCAs was simply a way to get around expensive audio attenuators, and active coupling was seen as a way to eliminate expensive transformers. But that's not necessarily true today. The 10,000 uses the same Penny & Giles 4000 series slide attenuators as the finest "audio on the pot" boards. The difference here is that the pots handle control voltages for the VCAs, not audio.

The console uses ITT Schadow switches and Allen-Bradley conductive plastic element pots along with active-balanced inputs and outputs. Clearly, the design is targeted at broadcasters who are shopping for a high-performance board. The console also should meet the needs of those who prefer an active-coupled, VCA-based console.

The mechanical construction of the 10,000 is well-planned. The console opens up like a clamshell, with the top part containing all the electronics. The top is supported by piston-and-strut air springs so that it stays in the open position for installation wiring or service. Once it is open, there is unrestricted access to the motherboard assembly. The status of the four supply rails for the audio and logic circuitry is indicated by LEDs.

All input/output connections are made through large AMP-style, 6-pin and 9-pin ML connectors on the motherboard. If you prefer, other types of connection schemes can be installed at the factory. All modules pull out from the top in the usual manner, and PCB guides are provided to ensure correct mating with the motherboard. Two external rack-mounted power supplies complete the installation.

One of the advantages of a VCA-controlled and FET-switched console design is that the active attenuators and switches can be located near the audio circuits while the long cable runs to the mechanical pots and switches use dc. Arrakis makes good use of this feature, and the audio runs in the 10,000 are kept short. This, along with the shielding provided by the bottom half of the clamshell enclosure, should serve the console well in high-RF environments.

Measured performance

Satisfied that the 10,000 was mechanically tough enough to last at least twice as long as the accountant's depreciation schedule, we hooked it up to our automated test equipment to explore the performance envelope. We live in a wonderful age of monolithic technology, in which signal-to-noise ratios near the theoretical levels are attainable if the overall system design is right. The console's performance is close to those limits.

The frequency response measured through the line inputs at operating level is shown in Figure 2. The response was down 0.5dB at 20Hz and 0.3dB at 20,000Hz. The 3dB point occurred at 65kHz. Because the console is an active-balanced input/output design, the rolloff frequencies are a function of coupling and feedback parameters and, therefore, quite controllable. The console's response is typical of the current broadcast practice of rolling the response an octave or two above the audio band to reduce RF sensitivity while continuing to provide transient response faster than any source or transmission system.

The THD at operating level, shown in Figure 3, was typically about 0.01% over most of the audible range and dipped to 0.008% in the lower mid-range. The 20kHz bandpass unweighted noise floor is approximately -85dB (0.006%). No spectrum analysis was performed to accurately discriminate the distortion components from the noise because both levels were negligible for broadcast applications. The SMPTE IMD was 0.018% at operating level.

Noise in the 20Hz-20,000Hz band measured 85dB below the +8dBm operating level through the line inputs. The S/N ratio measured through the microphone input was 77dB (referenced to 50dB gain), producing an equivalent input noise of -127dBm. This is within 1dB of the manufacturer's specification and within about 3dB of the theoretical limit of 150.

Figure 4 shows the noise distribution vs. frequency for both microphone and line inputs. Program-to-program and program-to-auxiliary crosstalk was -80dB. There were no artifacts of the VCA action present in the output.

The compressor/limiter and equalizer modules worked exactly as advertised, and we found the board easy to use, with no poorly placed controls or switches. (In fact, in an effort to find something to criticize, we decided that the lettering on the channel on/off switches was too large, but Arrakis tells us that it's being changed.)

Most broadcasters probably would want to order the 10,000 series console configured for +4dBm rather than +8dBm to maintain 20dB of headroom. Because the overall S/N for the board is set by the VCA S/N, the lower operating level has negligible impact on the output S/N. We repeated the S/N tests at +4dBm and found only 1dB of degradation for a 4dB increase in headroom. The console is available in any gain structure you desire.

By the way, ever wonder where the name Arrakis originated? No, it's not a Greek word for loud. Mike Palmer, the founder, reveals that the company is named after the planet in author Frank Herbert's "Dune" trilogy.

Overall, the Arrakis 10,000 series appears to have the potential to compete effectively with the top contenders in the marketplace. It's well-designed and built and is priced to provide excellent value.

Dennis Ciapura is vice president of technical operations for Noble Broadcast Group and president of TEKNIMAX Telecommunications, a San Diego-based technical management consulting firm.

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If a world-class console is in your future, let's talk about the 10,000.

303/224-2248