INNOVATING THE FUTURE OF GLOBAL COMMUNICATIONS

RTS is the industry leader in professional intercom systems, providing solutions that combine forwardthinking functionality, real-world reliability and superior sound quality.

At the forefront of broadcast intercom technology for over forty years, we are the brand most-trusted by the biggest names in the business. Our family of digital matrices is the most complete and widely used line of intercoms in the world, proven in the most critical and demanding applications.

Today, our latest generation of advanced digital audio matrix and keypanel products is based upon the uniquely powerful and flexible OMNEO IP technology for media transmission and system control. OMNEO has been quickly adopted as the new performance standard by major network customers across the globe for coordinating broadcasts of the world's largest events via systems of unparalleled size and sophistication.

RTS systems are also scalable for a wide range of applications beyond broadcasting, including in-house production communications for houses of worship and live entertainment, and for failsafe communications in the nuclear power industry. A top priority for us is the backwards compatibility of our new products, so they can integrate seamlessly with legacy systems to extend the value of the initial investment. RTS offers the widest variety of matrix interfaces in the market: RVON (VoIP), MADI and OMNEO (Dante plus OCA, AES70), connecting via Ethernet CAT-5e/6, fiber and copper analog.

RTS helps professionals communicate clearly with ease and efficiency, so they can focus on content instead of hardware. Whether for applications large or small, we demonstrate our commitment to our users by Innovating the Future of Global Communications.

www.rtsintercoms.com

ODIN ORDERING INFORMATION

ODIN 16-ports	F.01U.329.396
ODIN 64-ports	F.01U.329.398
ODIN 32-ports	F.01U.329.397
ODIN 128-ports	F.01U.329.399
16-port upgrade	F.01U.329.401

ODIN SPECIFICATIONS

Physical Dimensions (mm)

-	
Width	439 (excl. rack ears)
	482.6 (incl. rack ears)
Height	43.65
Depth	346.34 (to back of unit)
-	17.51 (max front protrusion)
	11.78 (max rear protrusion)
Weight	5.2 (kg)
Voltage	100 - 240 (VAC)
Frequency	50-60 (Hz)
Power, Max	50 (W)
Operating Temp	0-+50(C)
Storage Temp	-40 – +70 (C)

Connectors

OMNEO	RJ-45 (x2), Provision for SFPs (x2)
Ethernet	Front and rear RJ-45s, 1 Gbit/s
AIO	RJ-45 (x16) for analog keypanels, USOC or 568B wiring
Wired Partyline	3-pin female XLRs (x2) for RTS, Audiocom,
	and Clear-Com formats
General	Locking terminal block connector w 24 pins, 4 relays and 4 optocoupled inputs
Word Clock	BNC-connector (x1) for Word Clock input
Inter-Frame Link	Two uplink, two downlink, SFP-type for 2 Gbit/s singlemode

Front panel

Vienlav	576 x 90 pixel TET display with full color
Jispiay	570 × 50 pixer 11 1 display with full color
Nenu Navigation	Two rotary encoders with push-button function
Keypad	Full numeric keypad
Power Switches	Two independent illuminated recessed switches
Cooling Fans	Side-to-side high reliability DC cooling fans with redundancy

Accessories



Rear rack-mount brackets included, recommended for high-vibration use cases





RTS





REVOLUTIONIZE YOUR INTERCOM ... IN ONE RACK UNIT

A new core product in the RTS portfolio, ODIN condenses decades of experience and the latest RTS innovations into a compact single rack unit package that offers state-of-the-art IP technology along with analog connectivity.

Where previous-generation digital matrix products were significantly larger and more costly to own and operate, ODIN's feature set and form factor are designed to make a professional matrix solution more accessible and easier to use than ever before, opening up the benefits of IP-based communications for wide range of new markets and users of all levels.

In keeping with the RTS principles of forward thinking and backwards compatibility, ODIN can seamlessly integrate into the most sophisticated, large-scale intercom operations, extending the value of the initial investment, while also providing a path for system expansion for smaller users who want to upgrade existing RTS systems to the latest technologies.

Whether the user wants to increase intercom functionality with an IP-based system at a regional theater or large house of worship, or whether the goal is to start streamlining a larger system's footprint and cost of operation in an OB van or broadcast control room—

ODIN stands apart as the most comprehensive intercom solution RTS has ever made.

♀ SCALABLE

Easily expand system as needed by adding licenses or more ODIN units: start with 16 ports, extend up to 128 ports, or connect eight units seamlessly for a 1024-port matrix. No competing product has this level of scalability.

♦ VERSATILE

Offers the broadest interoperability – supports Dantecompatible OMNEO IP technology; allows seamless connectivity between analog two-wire, four-wire and digital devices.

USER-FRIENDLY

High-resolution icon-based front-panel color user interface for intuitive operation and immediate configuration directly from the unit.

EFFICIENT

Requires less power, less space and less cooling for lower environmental impact and lower total cost of ownership.

FLEXIBLE

Reallocate ports to any hardware type with no adapters or special boards required – future-proof for evolving a system with audio over IP technology; backward compatible with legacy products.

DECADES OF PROFESSIONAL INTERCOM ENGINEERING EXPERTISE, MULTIPLE INDUSTRY-LEADING RTS TECHNOLOGIES AND ALL THE SCALABILITY AND CONNECTIVITY YOU NEED TO EASILY ADD TO YOUR SYSTEM

ALL PACKED INTO A SLEEK, USER-FRIENDLY 1RU ENCLOSURE

ODIN COMBINES THE FUNCTIONALITY OF MULTIPLE RTS TECHNOLOGIES INTO ONE FUTURE-PROOF PACKAGE



OMI-64

The capacity of two OMI-64 cards (64-ports each) -- up to 128 channels of digital audio over IP in OMNEO format – fully compatible with Dante and AES67.



DSI-2008 Built-in connectors for analog two-wire partyline



Redundant power supply for an extra layer of protection against failure







<u>⊿Dante</u>

OPEN CONTROL ARCHITECTURE

OMNEO ONBOARD

The latest generation of RTS advanced digital audio matrix and keypanel products is based upon the uniquely powerful and flexible OMNEO IP technology for media transmission and system control. OMNEO is an architectural approach to connecting devices that need to exchange information such as audio content or device control.

Built upon multiple technologies, including IP and open public standards, OMNEO supports the technologies of today--such as Audinate's Dante--while adopting the standards of tomorrow. RTS uses OMNEO as our platform to embrace and employ open standards. OMNEO offers a professional-grade media networking solution that provides interoperability, unique features for easier installation, better performance, and greater scalability than any other IP offering on the market.

A NEW BENCHMARK FOR INTERACTION

With ODIN, all setup and configuration can be done externally by connecting a laptop; the most common operations can be handled directly on the front panel via the icon-driven advanced graphical user interface.

This intuitive GUI makes it easy to get an overview of channel status, or use the menus to quickly find the matrix setting you need to modify. Icons support the most common setup and configuration tasks and are displayed in vivid colors on a high-resolution TFT screen.

The AZedit and IPedit software applications have been updated to support ODIN for more complex configuration tasks.

KEY FEATURES AT A GLANCE

- As a user's capacity needs evolve, a single ODIN can grow from the basic 16 ports to a maximum of 128 ports, and a maximum of eight ODIN units can be interconnected via an optical Inter-Frame Link to create a single matrix with up to 1024 ports
- Compact 1RU form factor makes ODIN perfect for OB vans and other applications where space is at a premium
- Built-in Dante-enabled, AES67/AES70-compatible OMNEO technology makes the transition to IP easy
- With connectors for OMNEO, four wire and two wire, ODIN supports ROAMEO IP-based wireless technology, KP-Series keypanels and, as always, RTS legacy keypanels.
- Port expansion via software upgrade no additional hardware required

• Five cooling fans (two are redundant)

- Energy-efficient design uses less than 50 watts, minimizing operating costs
- Color display with intuitive graphical user interface based on icons
- Two XLR-connectors for wired partyline in one of three user-selectable formats



- 3 16 connectors for analog keypanels or bidirectional audio
- **4** Built-in connectors for analog party-line
- 5 General-purpose Input/output terminal block for four relay outputs and four optocoupled inputs



GET CONNECTED

- Whether you use two-wire, wireless, or matrix-based intercoms, ODIN can serve as the core of your RTS system
- Use ODIN as the base station for your ROAMEO wireless keypanel beltpack system
- ODIN is fully compatible with RTS Trunking technology, allowing ODIN to interoperate with other RTS matrix products including the popular ADAM and ADAM-M
- Dante-enabled OMNEO is standard on RJ-45 connectors or is available using optional optical fiber SFP connectors. Users can flexibly define ports to use any of the available connector types.



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Connectors for SFPs – hook up digital audio via optical fiber

SPECIFICATIONS COMPACT INTERCOM MATRIX

GENERAL REQUIREMENTS

PURPOSE

The matrix is the audio router at the heart of the intercom system. The purpose of the intercom system is to allow multiple users to coordinate real-time production by establishing bi-directional audio paths between users. Each edge device shall connect to the matrix on an available port.

CAPACITY

A single matrix shall be 128 inputs by 128 outputs, non-blocking. It must have the ability to create up to 96 partylines with up to 80 users each. Up to 16 IFBs must be supported (Interruptible Fold-Back).

SCALABILITY

A single matrix shall be scalable from 16 ports up to 128 ports in a single unit. It shall be possible to interconnect up to 8 units to create a single intercom matrix with 1024 ports. The method for interconnecting matrices is specified below.

FORM FACTOR

A compact intercom matrix is required to fit in a one rack unit form factor, which means it can be mounted in a standard 19 inch equipment rack, in which the vertical spacing is 1.75 inches. Depth as measured from the front of the racks shall not exceed 350 mm.

AMBIENT OPERATING TEMPERATURE

The matrix shall have built-in cooling based on forced air circulation from multiple fans, to allow it to operate at an ambient temperature up to 50 degrees Celsius (122 degrees Fahrenheit). Fans shall be orientated so as to pull air into the unit from one side.

MECHANICAL STRUCTURE

The matrix shall have a front-panel user interface featuring a color display capable of displaying information about the unit, two rotary encoders with push-function, a full numeric keypad with backlight, front RJ45 connector for laptop running configuration software, and power switches. The rear of the unit shall have a set of connectors specified below. A rear support bracket shall be available as an option, to provide mechanical support in applications where the device is subjected to vibrations.

FRONT PANEL FEATURES

FRONT PANEL DISPLAY PROPERTIES

The display shall have the active area of at least 120 mm x 19 mm. Resolution must be at least 4.7 pixels per mm (approximately 120 dpi), with the ability to reproduce a minimum of 65536 colors. The luminance of the display shall be user-adjustable up to the maximum rating, which shall be no less than 12,500 Candela per square meter of display, when all pixels are set to show white. The display technology shall be TFT. Display viewing angle shall be a minimum of 80 degrees, vertically and horizontally.

FRONT PANEL DISPLAY GUI

The features of the matrix shall be available through an icon-driven Graphical User Interface (GUI) where individual user-configurable functions are selectable from hierarchically organized menus. Up to seven icons may be displayed on any single menu. It must be possible for the user to navigate through the menus and select individual items using the rotary knobs and/or the keypad.

FRONT PANEL KEYPAD

The keypad shall have all the digits from 0 to 9 plus two extra keys for additional functions. The keypad shall have blue or white backlight, to be selectable by the user.

FRONT PANEL RJ45 CONNECTOR

A single RJ45 connector shall be available to connect an Ethernet enabled laptop, to run configuration or setup software.

FRONT PANEL POWER SWITCHES

Two independent power switches shall be available on the front of the unit. Switches shall be flush mount and recessed below the surface when activated to prevent accidental contact from turning off power to the unit. The switches shall have illumination to indicate when they are in the on position. Each switch shall control a separate power supply, internal to the unit. Each power supply should be able to independently power the device.

REAR FEATURES

POWER CONNECTORS

Two independent power inputs for 100-240 V AC shall be available on the rear. The connectors shall support locking power cables, to prevent them from falling out.

Analog Input Output (AIO) connectors

Unit must have a minimum of sixteen (16) AIO connectors for analog keypanels. The format for the analog keypanel audio and data is specified separately.

Two-wire connectors

Unit must have a minimum of two (2) connectors for analog two-wire partyline. The connectors shall be 3-pin female XLR. Single- and dual-channel two-wire shall be supported. The RTS, Clear-Com, and

Audiocom wiring formats shall be supported. The two-channel Clear-Com and Audiocom formats do not have to be supported. The two partyline ports shall operate independently, and be able to operate in different modes.

GENERAL PURPOSE INPUT/OUTPUT

The device shall feature a GPIO connector for four general-purpose inputs and four relays. The inputs shall be opto-coupled, for an external power source rated 5-18 V DC. The relays shall have common, normally-open, and normally-closed contacts capable of 1.0 Amp at 30 V DC.

RS-485 SERIAL DATA CONNECTOR

An RJ45 connector for RS-485 serial data shall be available for external devices that require this data protocol. Bit rate shall be 76,800 bits per second.

FRAME-TO-FRAME CONNECTION

An optical high-speed communications link shall allow multiple units to be interconnected, to work as one single matrix. The interconnection shall use SFPs for single or multi mode laser. Using the interconnection it shall be possible to connect the matrices in a logical ring. The user shall have the option of having a redundant connection between the units. The data rate on the matrix interconnection shall be sufficient to support 1024 concurrent channels of uncompressed audio.

CONTROL CONNECTOR

A rear RJ45 Ethernet connector shall be available for connection of an external laptop to run configuration and setup software.

CONNECTOR FOR VOIP

There must be a dedicated RJ45 connector for Voice over IP. The format of the VoIP audio is specified separately.

EXTERNAL WORD CLOCK

The unit must have a BNC-style connector for external word clock. The matrix must be able to synchronize to an external word clock.

HIGH-QUALITY AUDIO OVER IP, RJ45 AND SFP

There must be a total of two (2) RJ45 connectors and two (2) provisions for SFP, to send and receive high-quality audio over IP (specified separately).

PROVISIONS FOR FUTURE ENHANCEMENTS

GLITCH-FREE AUDIO

The matrix must come with MAC-addresses pre-programmed to allow firmware enhancements to support glitch-free audio.

VOIP CODECS

The unit shall have sufficient processor capacity for up to sixteen (16) simultaneous VoIP channels in G.711 and G.729 codecs.

UNIT-LEVEL REDUNDANCY

The fiber-based frame-to-frame connection shall be designed to allow one matrix to act as a backup for another. In the case of a failure of a matrix, all the ports except the AIO-ports shall switch over automatically to the backup unit.



Technical Data Sheet

Innovating the Future of Global Communications

ODIN OMNEO Digital Intercom



The ODIN Digital Intercom is a highly scalable intercom system in a 1RU (Rack Unit) package. As your capacity needs to evolve, a single ODIN can grow from 16 ports to a maximum of 128 ports. A maximum of eight ODIN units can be interconnected via an optical Inter-Frame Link creating a single matrix with up to 1024 ports. The total number of licensed ports may be allocated freely to any port hardware type supported by the unit.

The front panel has been designed to incorporate a User Interface as an alternative option to AZedit that supports the most common setup and configuration tasks. The AZedit and IPedit software applications have been updated to support ODIN.

Featuring connectors for AIO, OMNEO and two-wire technology, ODIN supports keypanel technology going forward and, as always, RTS legacy keypanels. OMNEO is standard on RJ-45 connectors or is available using optional Optical Fiber SFP connectors.

Features

- A robust digital matrix in a compact 1RU space
- Built-in OMNEO technology
- Redundant power supplies

- Front panel user interface gives easy access to the most common configuration tasks to allow quick modifications to the system
- · Energy-efficient design, uses less than 50W of power

Line Drawing





Specifications

Power Supply:

Туре	. Locking IE320 C14 style connector
	(2 connectors, fully redundant
	load-sharing power supplies)
AC Input	100VAC - 240VAC, 60/50Hz,
	0.5A / 0.35A
Maximum Power	
Consumption	
Noto: Lighted	nower buttons on front nanel control

_ighted power buttons on front panel control Note: DC voltage feed to internal circuitry; they do not disconnect AC from the internal power supplies. Power cords must be fully removed from unit to safely disengage internal power.

Environmental: norating

operating	
Temperature	32°F – 113°F (0°C – 45°C)
Storage	
Temperature4	4°F – 158°F (-20°C – 70°C)

Dimensions:

19" w/ rack ears (17.3" w/o rack ears) W x 1.7" H x 14.3" D (including connectors) (482.6 mm w/ rack ears [439 mm w/o rack ears] W x 43.7 mm H x 363.5 mm D [including connectors])

Weight:

ODIN Matrix	11.5lbs (5.2kg)
Optional Mounting Bracket0	.86lbs (390grams)

AIO 4-Wire Analog:

Connectors
Signal Format Differential RX/TX audio with
Wiring Scheme
A/D and D/A Resolution
Max Input Level (balanced)+20dBu w/o clipping
Digital Input Gain Programmable
(-2008 – +20 08)
Response+1dB/-3dB from 200Hz – 20kHz
THD+N (8dBu input,
unity gain)0.025% non-weighted@1kHz
 <0.075% non-weighted, 100Hz – 20KHz Nominal Input Impedance >22kO
Nominal Output Level
Digital Output Gain Programmable
(-20dB – 20dB)
Maximum Output
Output Frequency
Response+1dB / -3dB from 200Hz - 20kHz
Output Noise Floor
Crosstalk Isolation>80dB

2-Wire Party Line Analog:

ODIN128NOCORD

Connector tw	o 3-pin female XLR connectors
Modes/Port supported.	RTS CH1, RTS CH2
	Audiocom (1 channel)
	Clear-Com (1 channel)

Order Information

4W/2W Echo Return Loss>30dB

Inhalanced Operation (RTS/Clear-Com)

Output Level	0 dBu (nominal)
Expected Termination Impe	edance 200 Ω
Noise Contribution	< <-60 dBu
THD+N (w/ nominal input)	
Bridging Impedance	>10kΩ
CALL Signaling	
	12VDC (Clear-Com mode)
MIC KILL Signaling	24kHz (RTS mode)
Delenand Oneration (A)	(diacom)

Balanced Operation (Audiocom)

Ouput Level	0 dBu (nominal)
Expected Termination	
Impedance	
Noise Contribution	<-60 dBu
THD+N	
(with nominal input)	
Bridging Impedance	>10 kΩ
CALL Signaling	20kHz (Audiocom mode)
MIC KILL Signaling	24kHz (Audiocom mode)

General Purpose Input/Output Ports:

Relavs

Туре	SPDT
Contacts	Common (C)
	Normally Closed (NC)
	Normally Open (NO)
Contact Rating	1A @ 30 VDC

Inputs

Туре	Optically Coupled
Input Volta	age 5 VDC – 12 VDC on A+
Note:	A+ is internally pulled to +5 VDC. Connect k
	to chassis ground to activate.

PAP/LCP/GPIO Port:

Connector		RJ-45
Format	RS-485 control da	ata only (no audio)

Inter-Frame Link Port

(2 UPLIN	IK/2 DOWNLINK):
Note:	Supports expansion and connection of up to
	eight ODIN frames.
Fiber Conr	nector TypeSmall Form
	Factor Pluggable (SFP)
Multimode	Finisar FTLF8519P3BNL
	500m / 2.125Gbps
Single Mod	deFinisar FTLF1421P1BTL
	15km / 2.67Gbps
Speed	
LED Indica	ator Optical Signal Present
Note:	SFF-8472 fiber diagnostics supported

Control Port:

Connector	
Format	IEEE 802.3 compliant
Speed	
LEDs	Speed and Link/Activity

Sync Input Port:

Connector	BNC
Termination Impedance	
Input Frequency Range	
Input Level	5V TTL Compatible

OMNEO Port (primary and secondary):

Maximum Capacity	128 Full-duplex ports
Copper Connector Type	RJ-45
Format	IEEE 802.3 compliant
Copper Ethernet Speed	100/1000 Mbps
Fiber Connector Type	Small Form
	Factor Pluggable (SFP)
Multimode	. Finisar FTLF8519P3BNL
	500m / 2.125Gbps
Single Mode	Finisar FTLF1421P1BTL
	15km / 2.67Gbps
Fiber Speed	
LED Indicator	Optical Signal Present
Note: SFF-8472 fiber di	agnostics supported

TFT Display:

Active Area 120.10 mi	m (wide) x 18.77 mm (high)
Dot Resolution	
Color Resolution	16-bit (64K) RGB color
View Angle	80° (typical, all directions)
Protective Lens	Anti-Glare / Anti-Reflective

Front Panel Management Port:

Connector	RJ-45
Format	IEEE 802.3 compliant
Speed	
LEDs	Speed and Link/Activity

Agency Compliance:

- Emissions (Class A)
- EN 55032:2012/AC:2013
- KN32 w RRA Public Notification 2016-26 & RRA Announce 2016-79
- AS/NZS CISPR 32:2015
- VCCI-CISPR 32:2016
- ICES-003, Issue 6:2016, Updated April 2017
- FCC Part 15 Subpart B
- Chinese National Standard 13438 (2008)

Immunity

- EN55024:2010
- KN32 w RRA Public Notification 2016-26 & RRA Announce 2016-79

Safety

- UL 60950-1 and CAN/CSA C22.2 No.60950-1-07
- UL 62368-1
- · Japanese PSE compliance

Order No. Description ODIN16NOCORD ODIN 16 no cord ODIN32NOCORD ODIN 32 no cord ODIN64NOCORD ODIN 64 no cord

Order No.	Description
ODIN16PORTUPG	ODIN 16 port upgrade
OM-SM SFP ODIN	Fiber module single mode ODIN
OM-MM FIBER	Multimode Fiber Module

The specification information is subject to change without notification. Brand names mentioned are the property of their respective companies.

ODIN 128 no cord



OMNEO DIGITAL INTERCOM

REVOLUTIONIZE YOUR INTERCOM ... IN ONE RACK UNIT

Dante OCA

OMNEO

onboard

TIE

Next-generation intercom matrix provides an unprecedented combination of flexibility, scalability and full-IP performance – all in a compact single rack unit package

) Easy system expansion as your business needs require – up to eight units can be interconnected for a total of 1024 ports

Offers the broadest interoperability with future, current and legacy RTS products – supports Dante-compatible OMNEO IP technology; allows seamless connectivity between analog two-wire, four wire and digital devices

Learn more at rtsintercoms.com/odin















Configuration: System

