

oratis

Intercom Solution

First Class Communication

The *oratis* Intercom System provides an ideal communication platform for TV production and theatre, including a fully summing audio matrix with up to 4096 inputs and outputs.

- + Scalable System
- + Universally applicable
- + Ready to use
- + Intuitive, network-enabled configuration software
- + Highest reliability
- + Scalable redundancy
- + Maximum cost efficiency
- + Secure long-term investment
- + Future-proof thanks to Audio over IP technology
- + Leading edge technology on the market
- + German quality product

The *oratis* digital platform

An extensive range of matrix cards is available for configuring an *oratis* intercom system – the application determines the choice.

The matrix frames offer high packing density. Each matrix frame is capable of summing up to 256 channels to each output. This allows for almost unlimited listening sums or large conferences.

Combining multiple matrix frames results in systems with up to 4096 ports that can all be active simultaneously. Networking of the matrix frames is achieved with fibre-optic cabling

using Gigabit Ethernet layer-2 protocol. This protocol allows for direct connections between matrix frames, whilst also enabling remote frames to be connected using managed Gigabit Ethernet switches.

The *oratis* R4000 network node connects individual *oratis* matrix frames to a star-shaped network. The R4000 allows full cross-linking of all communication and audio channels.

Within a production area each matrix frame can be seen as an autonomous system.

When networked with the R4000 router, this sub-segment can communicate with the frames of the other production islands. Thus, modern distributed systems can be designed, for both local and global use.



Matrix Frame MF4

Matrix Frame Features

- Fully summing audio matrix with 24 bit / 48 kHz audio quality
- 32-bit TDM bus for up to 256 signals
- Hot-swap capable matrix cards, matrix frames and power-supplies
- Expandable during operation
- Fully redundant clock distribution
- External word clock input
- Expandable by networking multiple matrix frames
- SNMP supported



Router R4000

Features Router

- 8 Segments for up to 4 matrix frames each
- Expandable by cascading - up to 4069 ports
- Routing capacity for 1024 fully summing ports
- Highest reliability thanks to master-slave redundancy



Name	Rack Units	max. Number of Slots	max. Number of Ports	Other
MF4	4	15	<ul style="list-style-type: none"> • Max. 256 Ports • 120 Ports for Subscriber Panels 	<ul style="list-style-type: none"> • 4 – 128 per Card Slot, • Digital Signal Processing • Redundant Power Supply
R4000	2	8 Segments	<ul style="list-style-type: none"> • 1 024 Ports • 4 096 Ports by Cascading four R4000 	<ul style="list-style-type: none"> • Digital Signal Processing • 128 Ports per Segment, non-blocking • Redundant Power Supply • Redundant Clock Distribution

Matrix Cards and GPIO32



Matrix Card

Matrix Cards Features

- Broadcast audio quality
- Sampling rate: 48 kHz with 24 bit word length
- Audio processing with flexible FPGA technology
- Matrix cards available supporting all relevant audio formats
- 4 to 128 ports per card (depending on the card type)
- Number of ports per card freely scalable
- Optional DSP for input and output channels



GPIO32

Features GPIO-Interface

- 16 opto-electronic inputs
- 16 relay switch contacts
- Connected via Ethernet
- +5 V / +24 V auxiliary power supply
- Up to 2 GPIO32 in 19- / 1 RU



Interface Cards

Name	Number of Ports max. Channels	Interface	Format	Other
IF 8A	8 / 8	RJ45	Analogue Audio Connection	Board for 4-wire connections and Subscriber Panels
IF 8DIG	8 / 16	RJ45	AES3	Board for 4-wire connections and Subscriber Panels
IF 8COAX	8 / 16	BNC	DELEC Coax with AES3	Board for Subscriber Panels
IF 8PL	8 / 8	D-SUB 25	Analogue Audio Connection	2-wire Board for eight mono or four two-channel belt pack connections
IF MADI1	1 / 64	LC (SFP-Module)	MADI-Interface	4-wire Board, 64 bidirectional Audio Channels
IF Dante™	1 / 64	RJ45	Dante™ (AVB Ready)	64 bidirectional Audio Channels, depending on the Dante™-Network Configuration
IF Link	1 / 128	LC (SFP-Module)	Gbit Ethernet Layer 2	Redundant Fibre Connection Board for System Interconnection
DSP 1	Depending on the Application – / 16	Plug on Module for all Matrix Cards	Various Algorithms on Request	SHARC DSP

GPIO Interface

Name	Rack Units	Inputs and Outputs	Other
GPIO32	1	<ul style="list-style-type: none"> • 16 Opto-electronical Inputs, • 16 Relay Switching Contacts 	<ul style="list-style-type: none"> • +5V und +24V Auxiliary Power Supply • Screw Terminal

The *oratis* Digital Subscriber Units

oratis compact can be combined with any of the subscriber units in the *oratis* range. Two basic variants are available both of which display the call destinations with up to 18 characters in plain text.

Talk 12X and Key 16X versions with LCD keys are especially convenient. Each key has a dedicated rotary encoder for rapid adjustment of crosspoint levels.

Compact subscriber units with their full-length displays permit higher packing density. In the standard version each subscriber unit has an internal audio matrix for routing signals to connected headphones, speakers, and other destinations. A Lite version is also available with a reduced number of audio ports presenting an interesting alternative for less complex applications.

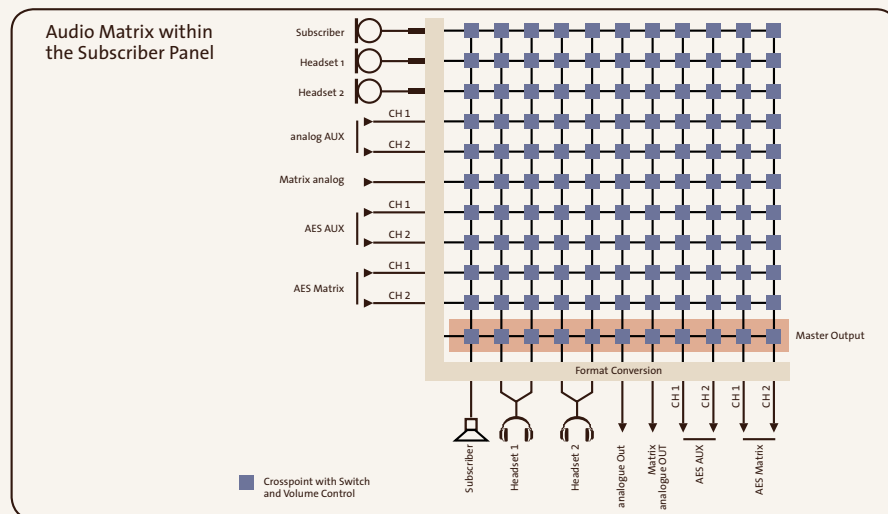
The level of each matrix input, output and crosspoint level can be controlled individually on the subscriber units.



Subscriber-Unit features*

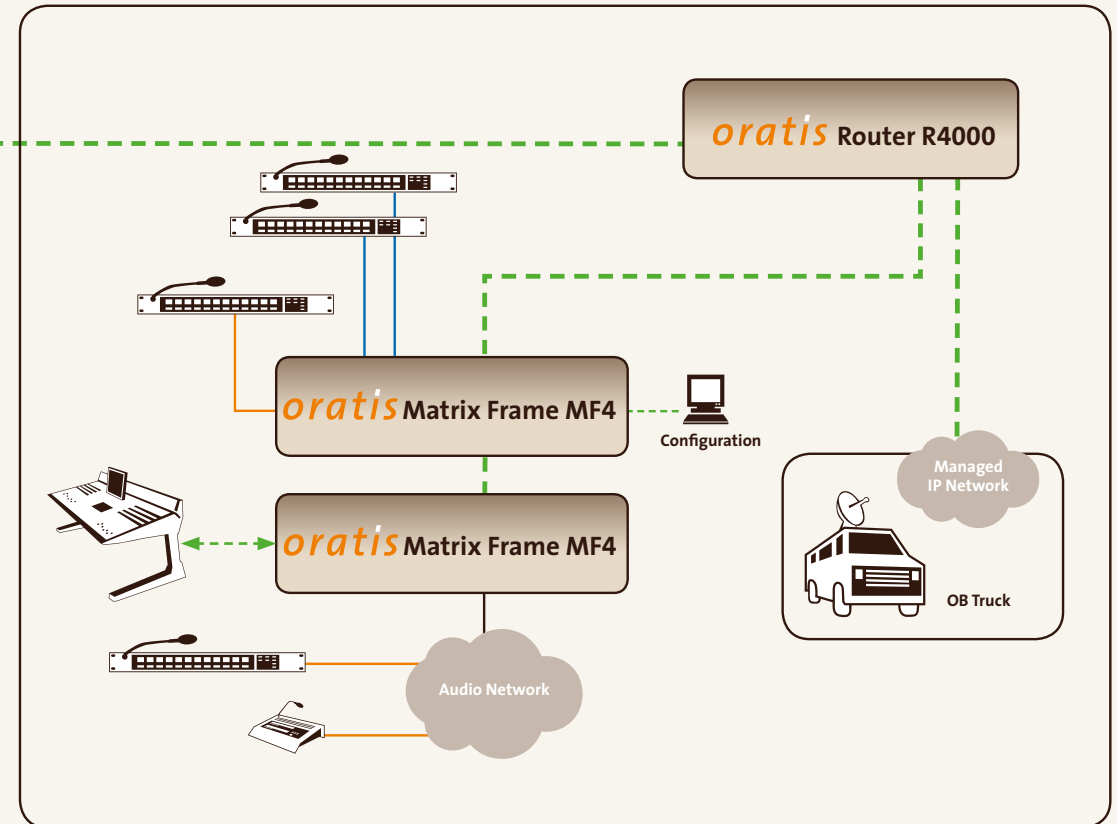
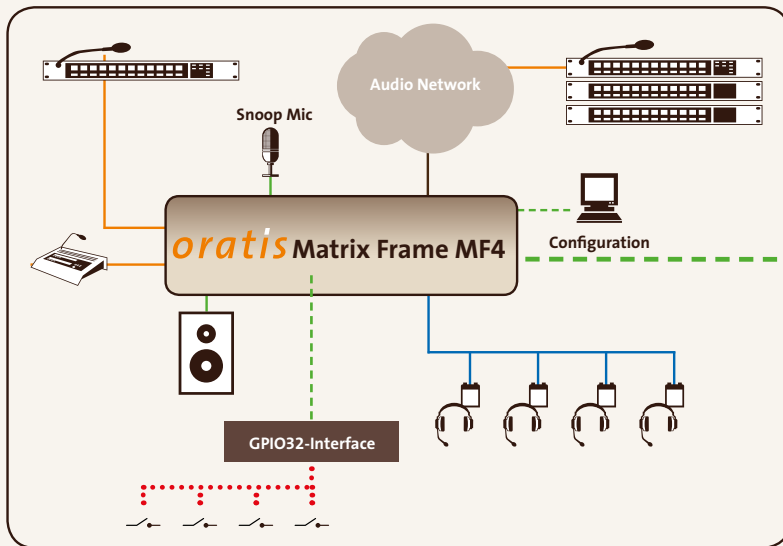
- Backlit colour displays
- 18 characters displayed per key
- Individual display and adjustment of crosspoint volume
- 2 high-quality microphone inputs with phantom power (Lite: 1 input)
- Output for external speaker (Lite: not available)
- 4 layers per key
- 7 keypads (max.) per subscriber unit
- 2 AES/EBU bi-directional audio channels to/from the matrix frame
- Detachable microphone
- Internal audio matrix (Lite: not available)

*Lite version differences are shown in brackets



Type	Size	Subscriber Buttons	Headset Interface	Auxiliary Analogue	Auxiliary AES3	Matrix-Interface	GPI
Talk 12X	19" / 1RU	12	2	2 Ch In 2 Ch Out	2 Ch In 2 Ch Out	AES3, Coax Analogue, RS232	3 In / 4 Out
Talk 12LX	19" / 1RU	12	1	-	-	AES3, Coax	3 In / 4 Out
Key 16X	19" / 1RU	16	-	-	-	-	-
Talk 16	19" / 1RU	16	2	2 Ch In 2 Ch Out	2 Ch In 2 Ch Out	AES3, Coax Analogue, RS232	3 In / 4 Out
Talk 16L	19" / 1RU	16	1	-	-	AES3, Coax	3 In / 4 Out
Key 16	19" / 1RU	16	-	-	-	-	-
Desk 16	Desktop Subscriber Panel	16	2	2 Ch In 2 Ch Out	2 Ch In 2 Ch Out	AES3, Coax Analogue, RS232	3 In / 4 Out
Desk 16L	Desktop Subscriber Panel	16	1	-	-	AES3, Coax	3 In / 4 Out

One System – Many Applications



- Audio analogue
- MADI
- AES3
- Ethernet
- GBit-Ethernet (redundant)
- ← → Dante™
- GPIO
- Intercom Subscriber Panel