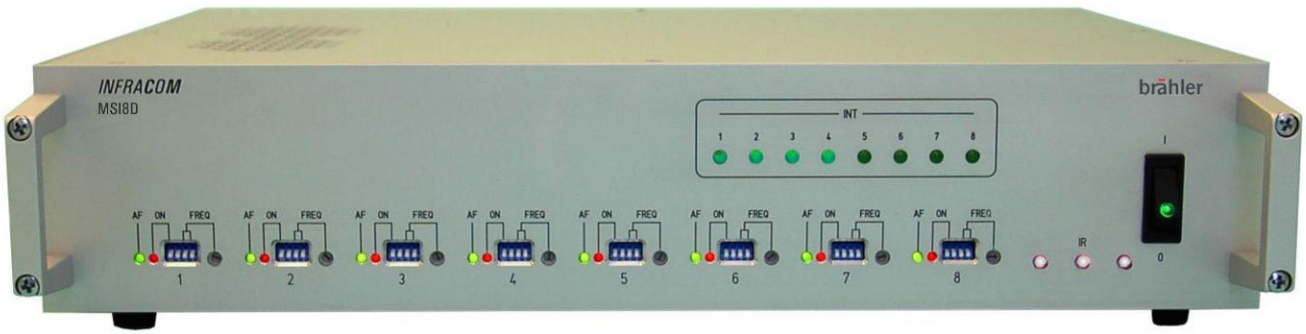
brähler

INFRACOM®

Infrared Transmitter MSI8D (band II)



Operating instructions

V 1.4

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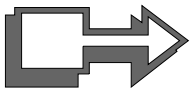
Operating instructions INFRACOM,

May-09

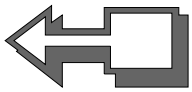


CAUTION

DANGER OF ELECTRIC SHOCK
DO NOT OPEN DEVICES

Do not open housing with mains cable connected.

Maintenance operations may only be executed by qualified personnel.



Our equipment and installations have been built and tested according to the latest state of the art. Under normal conditions, they do not require any special maintenance.

However, please be aware of the following:

- ☑ secure and stable position of the installation
- ☑ sufficient ventilation - never operate equipment near heat sources such as heating radiators etc.
- ☑ power connection - install all power cables to avoid damaging
- ☑ connecting cables - avoid trip-traps
- ☑ liquids - avoid penetration of liquids into the housing
- ☑ exclusively operate equipment via wall sockets that are connected to ground according to the relevant specifications and regulations

Warning: Never expose equipment to rain or humidity

Please be also aware of the fact that rough handling of the equipment, such as strong bumps or vibrations, may result in damages. Inappropriate handling and storage, i.e. handling and storage not in conformity with the operating instructions, may as well lead to equipment damages.

Content

1. About this manual

Symbols

The following symbols and fonts are used in this manual:

Indicates an important note, which has to be followed to guarantee that the functions of the unit, the security of any data or your health are not put at risk

Indicates additional information, remarks and tips

Describes activities that must be performed in the shown order

Words in bold letters require your special attention.

2. Important remarks

2.1 For customers in the EU and in the USA

Our equipment has been tested and complies with the requirement of the CE test. This guarantees the protection against harmful interferences, when the equipment is operating in a commercial environment. If the unit is not proper installed to this user manual it may causes radio interferences. Any changes or modifications not explicit approved in this manual could void your authority to operate this equipment.

2.2 For customers in the United Kingdom

The wires in the main lead are coloured in accordance to the following codes:

Green-and-yellow:	Earth
Blue:	Neutral
Brown	Live

If the colours of the wires in the mains lead of this unit are not corresponding with the coloured markings of the terminals in your plug, so please proceed as follows:

The green-and-yellow wire must be connected to the plug terminal marked with the letter E, with the safety earth symbol or with green-and-yellow colour. The blue wire must be connected to the terminal marked with the letter N or with black colour. The brown wire must be connected to the terminal marked with the letter L or with red colour.

The equipment must be connected to earth!

2.3 Safety

Check that the operating voltage of the unit is identical with the voltage of your local mains power. If a voltage conversion is required, consult your BRÄHLER ICS dealer or qualified personnel.

Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before it will be used again. Unplug the unit from the wall outlet or set the Main Power switch to OFF if it is not used for several days. To disconnect the cord, pull it out holding the plug. Never pull the cord itself.

2.4 Installation

Allow adequate air circulation to prevent internal heat accumulation. Do not place the unit on a surface (rugs, blankets, etc.) that may block the ventilation holes.

Do not install the unit in locations near heat sources such as radiators or air ducts, nor in places exposed to direct sunlight, excessive dust or humidity, mechanical vibration or shock.

To avoid condensation do not install the unit where the temperature may increase rapidly.

2.5 Cleaning

To keep the surface of the housing in a proper condition, periodically clean it with a soft cloth. Large staining may be removed with a cloth lightly dampened with a mild detergent. Never use organic solvents such as thinners or abrasive cleaners since these might damage the surface.

2.6 Repacking

Save the original shipping box and packing material. For maximum protection, re-pack the unit as originally packed from the factory.

If not supplied with the equipment, a complete transportation and storage box system is available from BRÄHLER ICS. We recommend using this system for long-term protection and care.

2.7 General

Please keep this manual together with the INFRACOM® Compact Transmitter MSI8D. If you hand on the units to third parties, please include this manual.

Please read the manual carefully, taking special care when you see this symbol as it indicates important information!

CE This product is conform to the rules of the following European directive:

89/336/EWG

Council directive to the alignment of the rules of rights of all member states about the electromagnetic compatibility, modified through RL 91/263/EWG, 92/31/EWG and 93/68/EWG of the council. Further information is available on request.

The warranty will expire, if you cause defectives through inappropriate use or handling of the unit.

2.8 Important information

The unit should not be used at the maximum volume setting. Adjust the volume to a more suitable level.

High sound pressure levels will damage your hearing!

3. Short description

INFRACOM is a system for the wireless transmission of sound using infrared light. By far the most important application is in simultaneous interpretation installations, where it is combined with interpreter consoles of model DOL7.

3.1 System function

The INFRACOM system consists of several components:

The central component is the Compact Transmitter MSI8D. The inputs are signals from several audio channels (for instance, several different language channels with simultaneous interpretation). It converts them into the appropriate FM signals for wireless transmission.

Infrared radiators transmit the information carried by the audio channels in the form of frequency-modulated infrared light.

Within the radiator's area, receivers are used to pick up the information transmitted in the form of infrared light signals. These receivers are about the size of a pack of cigarettes. Headphones are plugged in to listen to their audio output. Receivers can be moved at will anywhere within the area that is fully illuminated by the radiators. They can be switched to receive up to 32 channels.

Whenever the INFRACOM system is used as a simultaneous interpretation installation it is operating in combination with one or several interpreter consoles. The various languages are fed into the appropriate outgoing channels. The interpreter consoles also include a number of functions that are essential to ensure the uninterrupted transmission of simultaneous translation.

These consoles are installed inside sound-proofed interpreter booths.

Interpreters sit inside these booths and use headphones to listen to the original sound, which is normally called the floor channel. At the same time they speak their translation into an outgoing channel.

Wherever we have a combination of a Microphone system and DOL7 interpreter consoles it is INFRACOM’s job to transmit several audio channels wireless to the auditorium.

The purpose of the DOL7 interpreter console is to feed in the various languages (i.e. the interpreter’s voice output) onto the appropriate outgoing channel.

3.2 Use

In combination with a microphone management system (such as CDS200 II, AUTOMIC, DIGIMIC), the system can provide the best communication facilities for organized events that need several languages.

Each and every participant (a term often used is "delegate") can use the microphone system to speak, and what he or she says will be translated simultaneously so that other delegates will be able to listen to it in one of the languages. This technique permits direct communication in several languages even at very large scale events.

It is a simple matter to set up the INFRACOM system in such a way that it is protected against eavesdropping from outside. Since all information is transmitted in the form of light waves, it is possible to use opaque material as necessary to limit the area to which it is to be transmitted. Dark curtains drawn across windows, for instance, are enough to shield a room reliably from the outside world.

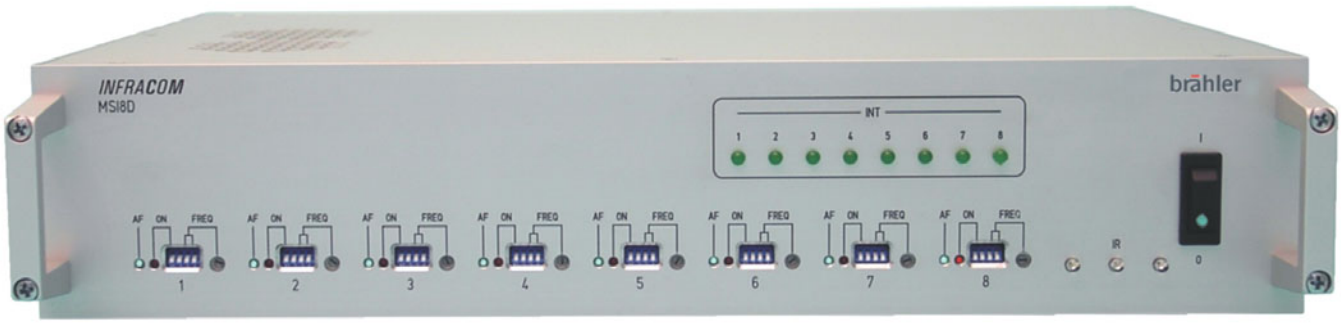
Although the INFRACOM system is most commonly used in combination with an interpretation system and microphone-management system, it is also possible to use it for other purposes.

During organized events, for instance, it is possible to use infrared light to transmit information to individual participants wearing receivers without disturbing anyone else present.

Another example might be museums applications. There it is possible to provide information on individual exhibits by means of infrared light radiated only to a limited area in front of the particular exhibit. Visitors listen to the information with receivers and headphones.

These particular operating instructions deal with the combination of INFRACOM systems and DOL7 (simultaneous interpretation installations).

3.3 Compact transmitter MSI8D



Front View

The INFRACOM® Compact Transmitter MSI8D is part of the INFRACOM® system, which serves the wireless language distribution by means of infrared light.

The sound signal is thereby converted into a frequency-modulated infrared signal and emitted via transmitting diodes. With special INFRACOM® receivers the signal is re-converted into a sound signal, which can be heard on a set of headphones. Up to 8 channels can be transmitted simultaneously with an FM narrow band modulation.

The INFRACOM® Compact Transmitter MSI8D is provided for modulating the sound signals on the different carrier frequencies and for signal amplification.

The Compact Transmitter consists of a 19" housing (2HU). Mounting brackets for rack assembly are also available.

Seven languages and the original (floor channel) can be transmitted.

On the front right-hand side of the Compact Transmitter MSI8D there is a green POWER ON showing the ON/OFF status. Next to this there are three infrared test diodes emitting the IR-signal. With the IR receiver you can listen to the outgoing channels even without IR-Radiator.

The operating elements of the eight infrared channels are also on the front side of the console.

With miniature-switches on the front panel the frequency band can be chosen and the channels can be switched ON or OFF. With a rotating switch it is possible to assign up to 32 transmission channels. Each channel can be set from OR - Ch31.

Eight green LED (“INT”) indicate the status of the corresponding interpreter channel: green LED means interpreter is “live”. This gives a quick overview about the occupied channels.

Rear view

The Compact Transmitter MSI8D contains the following sockets on the rear side:

- OR-IN: XLR socket for feeding in the original channel (CDS sound / DIGIMIC sound / a .o.). The input is balanced via AF transformer.
- OR-OUT: XLR socket for the output of the original sound. The output is also balanced via AF transformer.
- Trimming condenser for setting the volume of the original sound.
- LINE-OUT: eight sockets for transmitting interpreter channels.
- RF-LINK: BNC socket for cascading with other Compact Transmitter. Use BNC-T adaptor for more than two units.
- IR-LINE: BNC sockets 1 and 2 for connecting INFRACOM® radiators IRad or HLN82B. Up to 10 radiators can be connected directly at each output.
- INTERPRETER: Two connecting sockets A36 for the connection of the interpreter consoles.
- Mains power connector.

4. Installation and starting up

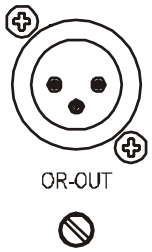
The Compact Transmitter has an ex-works mains voltage setting of 90 - 250 Volts by 50 – 60 Hz. If there is another voltage range you must not connect this equipment. In connecting the system, special attention is to be paid to ensure that all cables are installed in cable ducts or that they are fixed by cable clamps or adhesive tape in such a way that there is no danger of somebody tripping over them.

4.1 Connecting the OR-IN socket

XLR OR-IN connector (female): socket for feeding in the original channel (CDS sound/DIGIMIC sound). The level can be set via the trimming condenser.

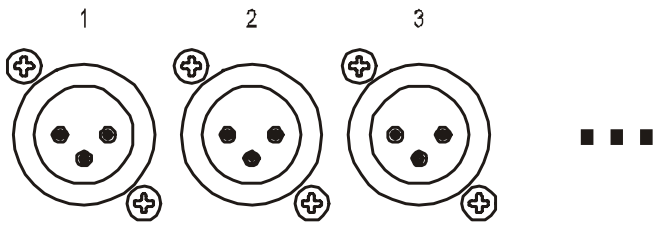
The input is balanced via AF transformer.

4.2 Connecting the OR-OUT socket



XLR OR-OUT connector (male): socket for the output of the original sound. The output is also balanced via AF transformer. The output level can be set via a trimming condenser – this is done in dependence with the input level.

4.3 Connecting LINE-OUT sockets

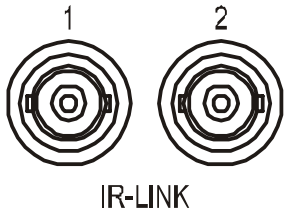


XLR LINE-OUT connector (male): All eight interpreter channels available for PA system or for recording purpose.

4.4 Connecting RF-LINK socket

BNC socket for cascading another Compact Transmitter MSI8D: To manage more In- and Outputs you can extend the INFRACOM system up to 16 line and more outputs.

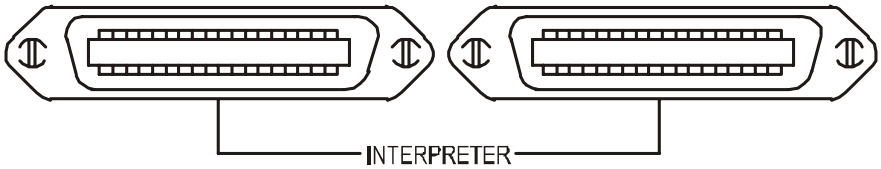
4.5 Connecting radiator sockets



BNC 1 and BNC 2: BNC sockets for connecting INFRACOM® radiators IRad or HLN82B. Up to 10 radiators can be connected directly to each socket.

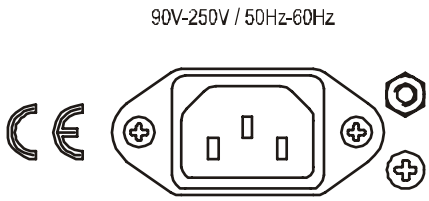
If there are more radiators needed we recommend the use of an active distributor.

4.6 Connecting A36 sockets



Two sockets A36 are provided for the connection to the interpreter consoles (i.e. DOL7/2). About seven units may be connected directly to the MSI. The total number depends on cable length. If you have any questions don't hesitate to ask. Our planning department will be glad to help you.

4.7 Connecting mains power



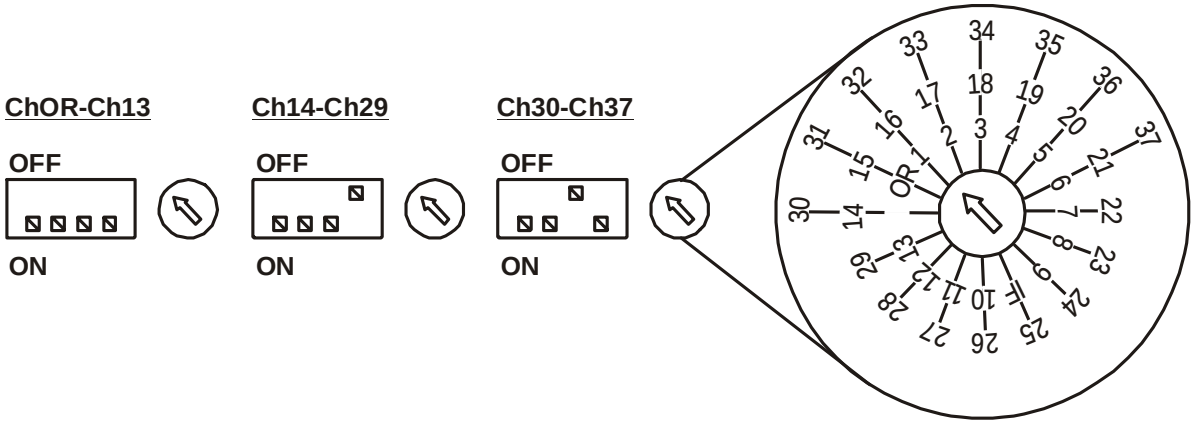
Connect the delivered cable with this socket to ensure the proper working of the Compact Transmitter.

5. Starting Up

The power supply is turned on via the power switch on the front side of the Compact Transmitter MSI8D.

When you use the Compact Transmitter the first time it is necessary to adjust the provided channels. This procedure will allocate the transmitter frequencies to the respective channels.

For adjusting this allocation refer to the following figure. The scheme is enclosed with the Compact Transmitter as a separate sticker which may be adhering to the front panel.



The following allocation is shown on the figure above:

First figure: Channel 1; second figure: Channel 16; third figure: Channel 32

The left DIP-switch will activate the corresponding channel. DIP switch to ON means channel is active.

5.1 Tuning input/output levels

Before starting a conference situation you should check the sound level in- and output to avoid level change between floor sound and interpreter sound. This is done by feed in a test signal to socket “OR-IN” and listening to the corresponding sound level.

Other controls are not necessary for a successful event.

6. OPERATION

Once the INFRACOM system has been properly started up and checked, there is usually no need for any further intervention from the operator.

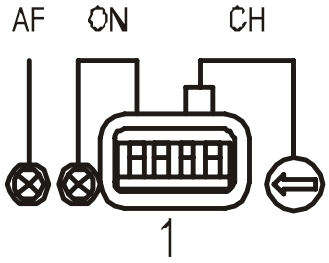
Any switching involving the interpreter's microphones and/or the language channels is done directly at the interpreter console DOL7.

Most of the work involved with audio distribution should have been completed during the preselection of channels and system start-up.

Some features in conjunction with the interpreter console are:

- Outgoing channel: During the actual event the toggle key can be used to move from one (preselected) console channel A, B or C to the other.
- Incoming channel (monitoring): For audio input the toggle switch is used to swap from the floor channel to the (preselected) relay channel and back again.
- The interpreter's microphone is operating with the microphone button. A lamp integrated in the switch indicates when "its" microphone is active.
- If ever a microphone needs to be deactivated only briefly, this is done by pressing the interrupt key. For as long as this key is pressed and held no audio signal is fed onto the interpretation channel. If a microphone is turned off with the microphone key, then the floor channel is automatically switched on to the corresponding interpretation channel.

6.1 LED AF and ON on front side



AF: This LED indicates a signal on this output (for example line 1).

ON: This LED represents the ON-status of the corresponding output channel.

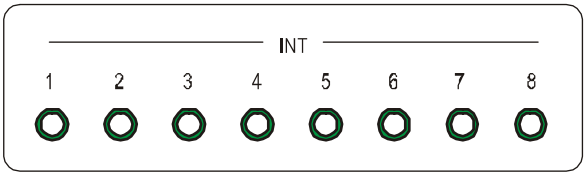
Remark: You should switch off not used channels to increase the IR power.

ON- and OFF-status is set with the left DIP-switch.

6.2 Infrared test diodes

Three transmitting test diodes allow testing the receivers at a maximum distance of 3 meters between the test-LEDs and the receiver.

6.3 Interpreter LED



8 LEDs indicating the status of the corresponding interpreter channel. Green LED means interpreter in „live".

6.4 Overview

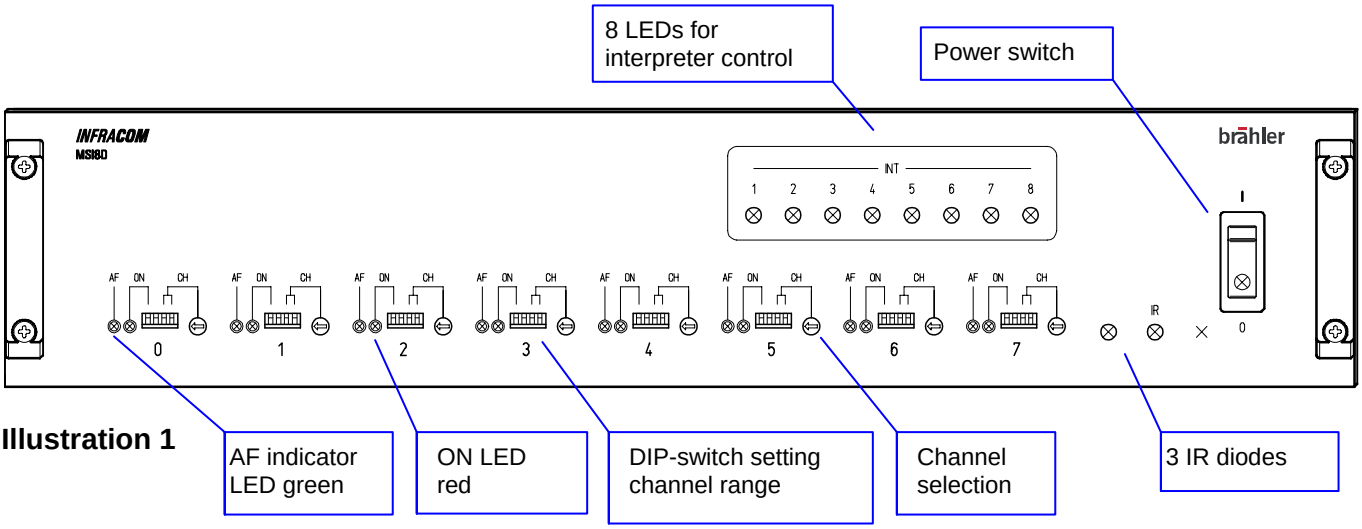


Illustration 1

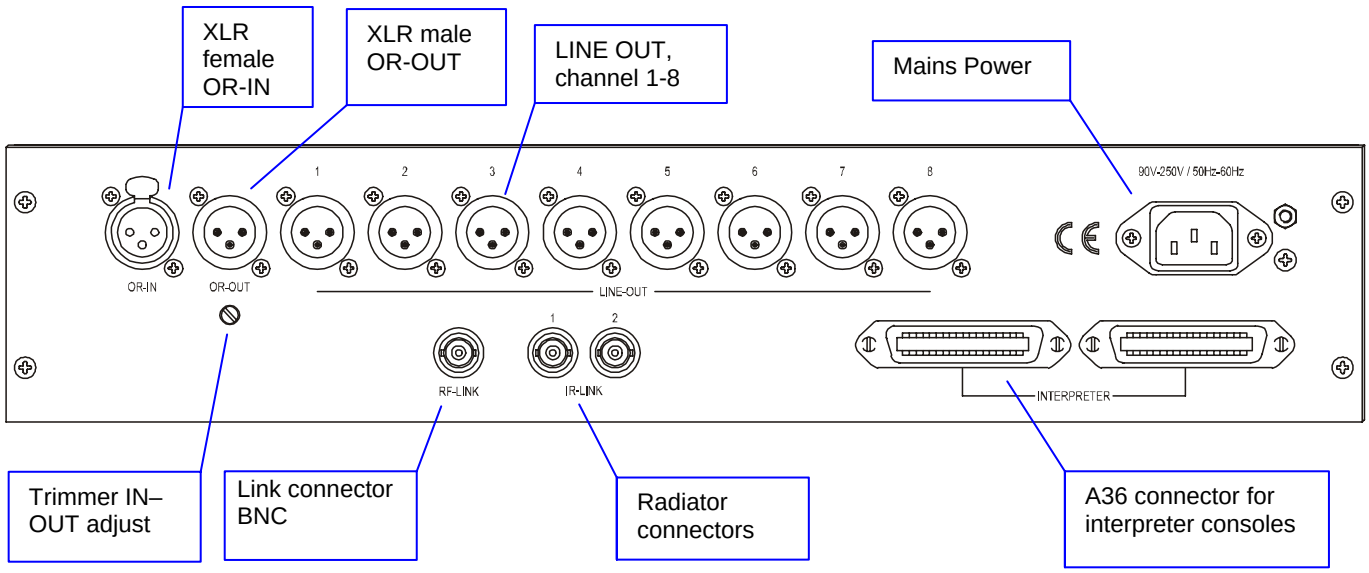


Illustration 2

6.5 Technical Data MSI8D

The unit is complying with the international standard IEC914.

Connections

- OR-IN (1 x XLR-socket)
  for input of the original language (OR)
- OR-OUT (1 x XLR-plug)
  for balanced output of the original language, adjustable (–14 ... +6) dBV/600Ohm
- LINE-OUT (8 x XLR-plug)
  AF outputs for audio recording
- IR-LINK (2 x BNC-socket)
  1: Connection for up to 10 INFRACOM Radiators IRad or HLN82B
  2: Connection of up to 10 further INFRACOM Radiators IRad or HLN82B
- RF-LINK (1 x BNC-socket)
  for cascading (RF) with further MSI8D
- INTERPRETER (2 x A36-socket) for connection of Interpreter Consoles DOL7

Features

- Green lighted mains switch for power ON indication
- Red LEDs for channel ON indication
- Green LEDs for audio available (AF)
- 8 LEDs for interpreter control

Transmission frequency

- 55kHz - 1335kHz (channel 31) in 40kHz steps

Intermediate frequency

- 455 kHz

Measurements

- Distortion: < 0.2%
- Signal-to-noise ratio: > 70dB
- Channel separation: > 60dB

Power Supply

- Mains power: (90 ... 250)VAC, (50 ... 60)Hz
- Power consumption: 40VA max

Housing

- 19”, 2 HE, Aluminium, “silver” anodized
- W x H x D: (433 x 88 x 305)mm

Weight

- 4.6kg

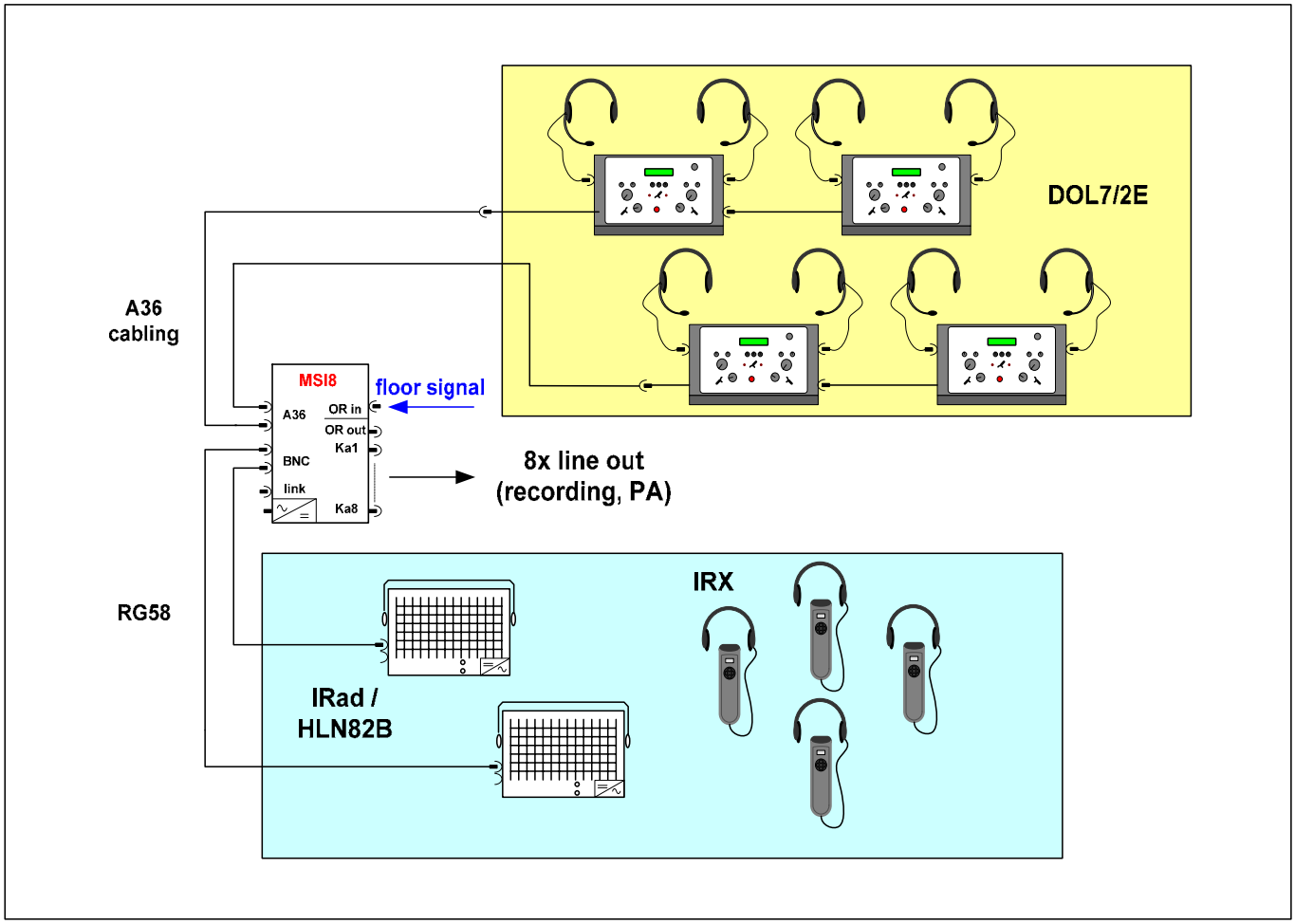
6.6 Optional accessories

(not included in delivery)

- INFRACOM Radiator IRad or HLN82B
- INFRACOM Receiver IRX
- INFRACOM Interpreter Unit DOL7/2
- BNC cable (50 Ohm) different length available

7. Applications

In the following you see some examples in form of a block diagram:



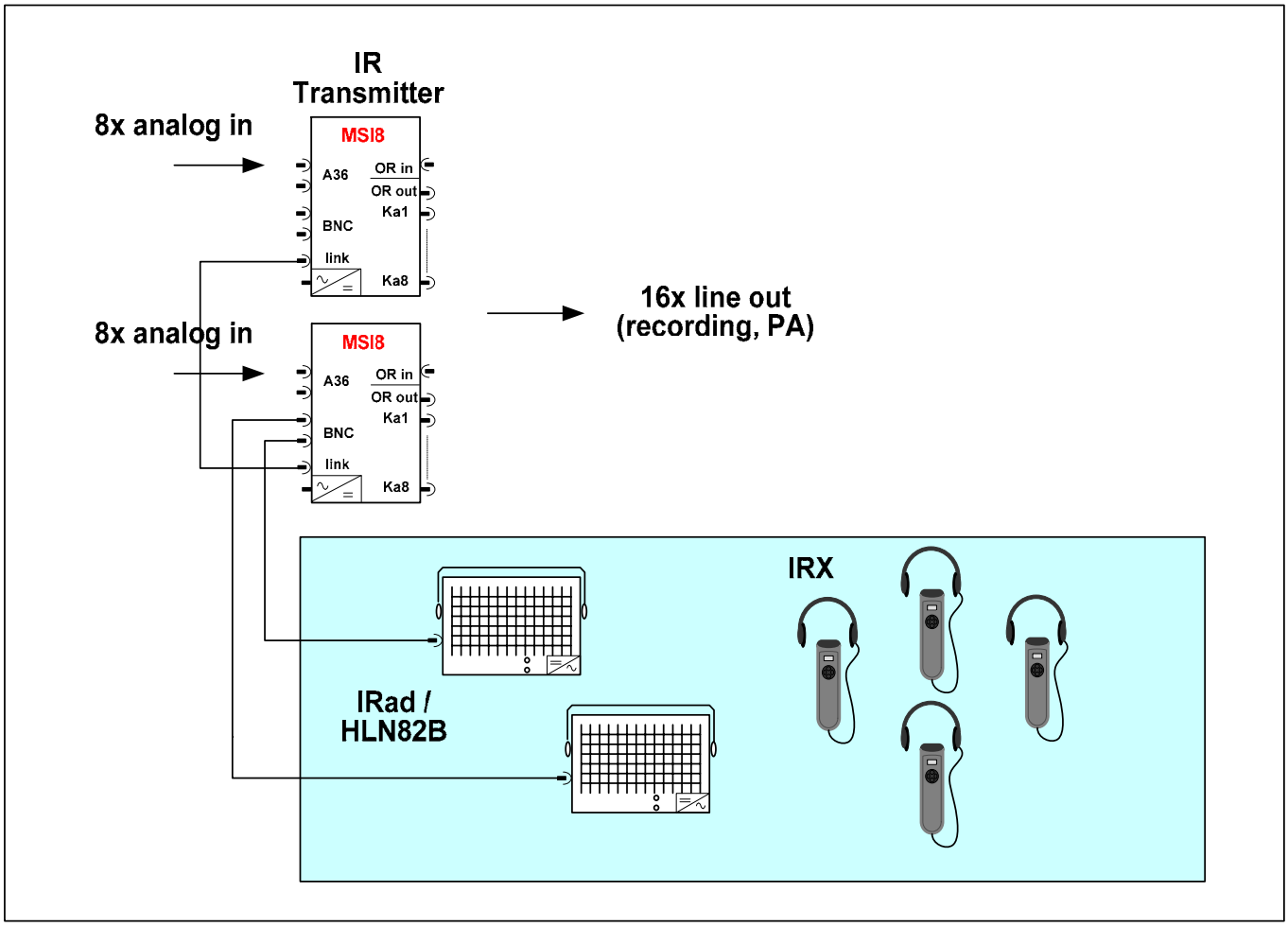
Application 1

This diagram shows a complete application for a seven channel (OR + 6) interpreter system. Monitoring part is the Receiver IRX together with the IR-Radiator IRad or HLN82B.

INFRACOM System Components

- MSI8D: Compact Transmitter
- DOL7/2: Interpreter console for 2 interpreters (7 channels)
- IRad / HLN82B: High Power Radiator
- IRX: Receiver for up to 32 channels

The next diagram (Application 2) shows the extension to a 16 channel system:



Application 2

Two of the Compact Transmitters “MSI8D” are linked to one system. The monitoring part consists of the Receiver IRX together with the IR-Radiator IRad or HLN82B.

INFRACOM System Components

- MSI8D: Compact Transmitter
- IRad / HLN82B: High Power Radiator
- IRX: Receiver for up to 32 channels

Troubleshooting

Error description	Error cause	Error solution
Switching on the system produces no POWER ON condition (green LAMP does not light up).	The main cable connector is not properly connected to the corresponding socket of the unit. Connection cable possibly defective. The power switch is not in the correct position.	Check if there is no connection to the mains power. Replace a new mains cable. Turn on the POWER ON switch.
No clear IR signal at the IRX receiver	2 or more channels switched to the same frequency	Check frequency setting on front panel and control signal using the test diodes
No audio: green LED does not light up	No INT (Interpreter) signal from the interpreter console	Check the DOL7 setting

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Fault description:	
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Delivery note no.:	Invoice no.:
Company, customer:	
Person to contact:	Telephone no.: E-mail:
Comments:	
Date, company seal, signature of customer:	

Dear Customer,

Please always include this service form, fully completed, with any complaint or repair wish you may have. Please note that only returns with the proper and complete paperwork can be dealt with in time. Please contact us before you return equipment for repair in order to find the most efficient way of sending. A detailed fault description will reduce cost and period of repair.

Transport damages have to be reported immediately to the responsible forwarding agent.

Remarks for Non-EU customers:

Please add to each return a delivery note or a proforma invoice, addressed to Brähler ICS AG, Königswinter, with following statements:

- Reason for return (repair or credit note), exact declaration of the goods, exact no. of pieces, article no. / model, serial no.
- Price which has been invoiced by us, better our invoice no. with date

Return shipments from Non-EU countries have to be sent always by air freight to Cologne airport, to the attention of:

Calenberg Oversea Logistics
Mr. Meregalli / Mr. Meininghaus
Welser Str. 8
D-51449 Köln
Phone: +49 (0)2203 3592-838

Please do **not** ship with FedEx, UPS, DHL, TNT, Post, etc., because those services do not process returns, but only imports!
Any return shipments by a.m. courier services will be rejected by Brähler ICS

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