










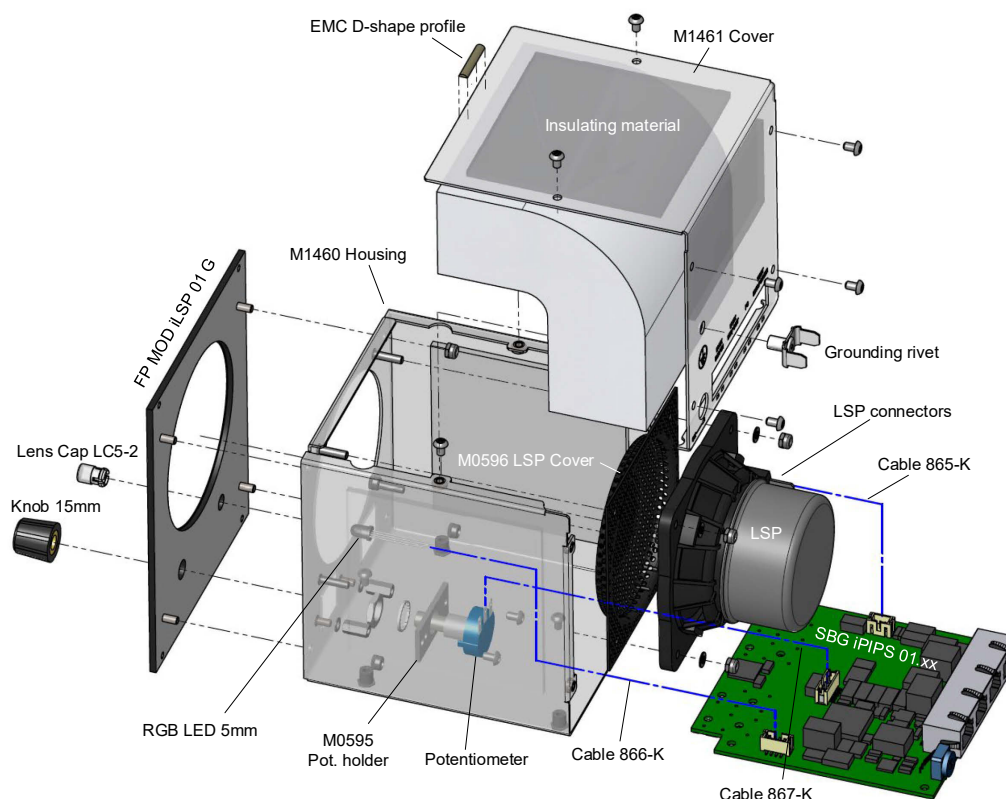


30-06024xy		Active Loudspeaker		iLSP xy	
ORDER NUMBER (SEE VARIANTS)		FUNCTION		NAME (SEE VARIANTS)	
<b>Mechanical Data</b>		 <p>Example iLSP 01</p>		<b>Speaker</b> Nominal Impedance 8 Ω Power rating nom./max. 30/<50 W	
Casing (W × H × D) 102 × 110.7 × 110 mm <sup>3</sup>				 <p>Frequency response (-8 dB) 80 to 20,000 Hz Mean sound pressure 1W, Δ=1 m 84 dB Resonance frequency - Speaker 110 Hz</p>	
Depth ~120 (incl. Faston) to ~170 (incl. cable bending) mm					
Minimum cut-out (W × H, symmetrical) 102.3 × 111 mm <sup>2</sup>					
Front panel (W × H)					
__iLSP xy (except iLSP 12) 106.3 × 128.4 mm <sup>2</sup> (3 HU × 21 HP)					
iLSP 12 108.0 × 139.5 mm <sup>2</sup>					
Drillings (centre - centre)					
iLSP xy (except iLSP 12) Ø 2.8 mm, M2.5, 91.4 × 122.4 mm <sup>2</sup>					
iLSP 12 Ø 3.4 mm, M3.0, 127.0 mm					
Material sheet metal 2.5 mm					
<b>Environment</b>		<b>Approvals</b>			
<u>Storage</u>		<u>Electrical safety</u>		IEC60950-1(05)+A1(09)+A2(13); IEC62368-1	
Temperature -55 to +70 °C		EN60950-1(06)+A1(10)+A2(13)+A11(09)+A12(11); EN62368-1		FCC Part15(10); ICES-003(12); EN300386v1.5.1	
<u>Operation</u>		<u>EMC</u>		EN55022(10); EN61000-6-3(07)+A1(11), CISPR22(08)	
Relative humidity (without dewing) 10 to 90 %		<u>Emission</u>		EN55024(10); EN61000-6-2(05)	
		<u>Immunity</u>		EN60068-2-1(Aa,Ad),-2(Ba,Bd),-14(Nb),-78(Ca)	
		<u>Climatic</u>			
<b>Electrical Data</b>					
Input voltage 24 V		+5/-20 %			
Current consumption (idle) 100 mA					
Power consumption (typical, without ext. power) ≤8 W					
Output voltage 24 V					
Output current ≤0.75 A					
<b>Short Description</b>					
The active class-D loudspeaker iLSP xy is designed for audio output of an iPOS-type touch screen position electronics via an Ethernet chain (AUX-line). Depending on the particular variant, the front provides volume control and single, dual or triple colour LED for indication of the voice activity, min. volume level, etc.		The RJ45-sockets on the rear enable a 1:1 connection via patch cables (≥CAT5) to the next/previous auxiliary (AUX-)device (e.g. Ethernet to another speaker iLSP or a plug-in-panel iPIP(s), or directly to the position electronics iPOS), to up to 2 footswitches, and to a test interface. Data transmission and configuration is done via Ethernet with real-time protocol. The TEST / EXT.POWER jack (X8-D) shall be used for supplementary external power supply, if otherwise the current consumption of the AUX-devices on the AUX-line would exceed 0.75 A. The drilling holes of iLSP xy (except iLSP 12) are suitable for mounting in a 3 HU/21 HP grid.			

Connectors and Indications						
Label	Position	Type	Usage	LEDs	Description	
AF	Front	LED	Signal indication	RGB	Indicates an incoming audio signal; colour depends on SW	
Vol	Front	Poti/Encoder	Volume control	-	Potentiometer (continuous) / encoder (digital) function;	
	Rear	Faston plug	Earthing	-	Connection to the equipotential bonding system	
	Rear	Rotary code switch	AUX-device identification: HEX= 0, 1, ..., F	-	The accompanying audio packets for a specific AUX-devices of this chain will be identified by means of the applied HEX-code	
OK	Rear	LED	Live LED	flashing	FPGA configured	
				green	Control by iPOS	
IAUX DEV IN	X8-A rear	RJ45, 8-p, f	Connection of previous AUX-device ⇒ iPOS	green	Indicates the Ethernet port link status (ETH_LINK): ON=OK	
				orange	Ethernet signal indicator (ETH_ACTIVE) ON=active	
IAUX DEV OUT	X8-B rear	RJ45, 8-p, f	Connection of next AUX-device ⇒ termination plug	green	Indicates the Ethernet speed mode (ETH_SPEED): ON=100, OFF=10 MBit/s	
				orange	Indicates the Ethernet duplex mode (ETH_DUPLEX): ON=full, OFF=half	
FS	X8-C rear	RJ45, 8-p, f	Footswitch connection (up to 2 with appropri. cable)	green	ON = Footswitch 1 is active	
				orange	ON = Footswitch 2 is active	
TEST EXT.POWER	X8-D rear	RJ45, 8-p, f	RS232 serial test interface / external supply	green	ON = RS232 interface of the iPIPS subboard is receiving (RX_DATA active)	
				orange	ON = RS232 interface of the iPIPS subboard is transmitting (TX_DATA active)	
HANDMIC		RJ45, 8-p, f	Hand microphone conn.	iLSP 02	Allows voice input via a hand microphone without an own plug-in panel iPIP	
TO EMOD		RJ45, 8-p, f	Connection to RES-Q	iLSP 03	Allows the use of the VCS audio devices alternatively via the operating	
FROM EMOD		RJ45, 8-p, f	Connection from RES-Q	only	module EMOD of the FREQUENTIS Emergency System RES-Q	
	If external voltages are fed to the module <sup>*)</sup> , the power supply used has to adhere to the requirements listed in <i>Electrical Data</i> with respect to the number and type of AUX-devices subsequently connected! <sup>*)</sup> e.g., if more than one iLSP is used on an AUX-line of the touch screen position iPOS, those speaker(s) have to be supplied externally.					
Variants	Order No.	Sub-board	Front Panel Colour (frame/screen)	Speaker	Description	Mass [g]
iLSP 01	30-0602400	iPIPS 01.20	RAL9005/7024	8 Ω, 30 W	Basic version; white lettering	960
iLSP 01 N	25-0000621	iPIPS 01.20	NDS Z 8201 2702	8 Ω, 30 W	As iLSP 01 but with different front panel colour	960
iLSP 02	30-0602401	iPIPS 01.40	RAL9005/7024	8 Ω, 30 W	As iLSP 01 but with additional RJ45 connector for hand microphone but no LED and no potentiometer	945
iLSP 03	30-0602402	iPIPS 01.20	RAL9005/7024	8 Ω, 30 W	As iLSP 01 but with 2 additional RJ45 connectors for connection to RES-Q	1050
iLSP 03 L	25-0000750	iPIPS 01.20	RAL9005/7024	8 Ω, 30 W	As iLSP 03 but without front panel logo	1050
iLSP 04	30-0602403	iPIPS 01.20	RAL7040/7040	8 Ω, 30 W	As iLSP 01 but with different front panel colour and black lettering	955
iLSP 05-L	30-0602404	iPIPS 01.80	RAL9005/9005	8 Ω, 30 W	Left version with special casing& enhanced PCB; see HW Description 060248xef	925
iLSP 06-R	30-0602405	iPIPS 01.80	RAL9005/9005	8 Ω, 30 W	Right version with special casing & enhanced PCB; see HW Description 060248xef	925
iLSP 07	30-0602406	iPIPS 01.80	RAL9005/7024	8 Ω, 30 W	As iLSP 01 but with enhanced FPGA and Flash memory	935
iLSP 08	30-0602407	iPIPS 01.20	RAL9005/7024	8 Ω, 8 W	As iLSP 01 but with 3 HU × 14 HP casing and different speaker; see HW-Description 060248xb	830
iLSP 09	30-0602408	iPIPS 01.B0	RAL9005/7024	8 Ω, 30 W	As iLSP 01 but with enhanced FPGA and Flash memory; specific coding for firmware download via TMCS	960
iLSP 10	30-0602409	iPIPA 01.30	RAL9005/7046	8 Ω, 30 W	As iLSP 01 but with 2 tiny phone test plugs on front panel; see HW-Description 060248xj	1084
iLSP 11	30-0602410	iPIPS 01.20	RAL9005/7024	8 Ω, 30 W	As iLSP 01 but without front panel logo	960
iLSP 03 N	30-0602411	iPIPS 01.20	NDS Z 8201 2702	8 Ω, 30 W	As iLSP 03 but with different front panel colour and black lettering	1050
iLSP 13	30-0602412	iPIPA 01.70	RAL9005/7024	8 Ω, 30 W	As iLSP 01 but with rotary encoder instead of potentiometer	966
iLSP 01 G	30-0602413	iPIPS 01.G0	RAL7035/7035	8 Ω, 30 W	As iLSP 01 but with additional damping material, without AF on front panel	970
iLSP 08 N	30-0602414	iPIPS 01.20	NCS0310-Y30R, gloss 15	8 Ω, 8 W	As iLSP 08 but with different front panel colour; see HW Description 060248xb	830
iLSP 08 FG	30-0602415	iPIPS 01.20	RAL9005/7040, gloss 15	8 Ω, 8 W	As iLSP 08 but with different front panel colour; see HW Description 060248xb	830
iLSP 08 N90	30-0602416	iPIPS 01.20	NCS0310-Y30R, gloss 15	8 Ω, 8 W	As iLSP 08 N but printing rotated by 90° (for horizontal mounting); see 060248xb	830
iLSP 12	30-0602417	iPIPS 01.20	RAL7011/7011	8 Ω, 30 W	As iLSP 01 but with different front panel dimensions and colour	960
iLSP 08 FG90	30-0602418	iPIPS 01.20	RAL7040/9005, gloss 15	8 Ω, 8 W	As iLSP 08 FG but printing rotated by 90° (for horizontal mounting); see HW Description 060248xb	817
iLSP 08 S90	30-0602419	iPIPS 01.20	RAL9005/7024	8 Ω, 8 W	As iLSP 08 but printing rotated by 90° (for horizontal mounting); see HW Description 060248xb	830
iLSP 15-L	30-0602420	iPIPS 01.E0	RAL9005/9005	8 Ω, 30 W	As iLSP 05-L but without volume control, different LED position and mechanic; see HW Description 060248xef	1002
iLSP 16-R	30-0602421	iPIPS 01.E0	RAL9005/9005	8 Ω, 30 W	As iLSP 06-R but without volume control, different LED position and mechanic; see HW Description 060248xef	1000

## Overview iLSP 01, 01 N, 01 G, 04, 07, 09, 11, 12



## Main Components

	Position / #
• Front panel	
iLSP xy varnished with foil	M0591,-2,-6; S0203
expect iLSP 12 var. with foil	M1446, M0592; S0433
▪ Potentiometer 10k	
• Cable 865-K (LSP – PCB <sub>X11</sub> )	17-0865000
• Cable 866-K (LED – PCB <sub>X3</sub> )	17-0866000
incl. LED RGB 5mm, HiBr	
• Cable 867-K (Poti – PCB <sub>X5</sub> )	17-0867000
• Loudspeaker (8 Ω, 30W)	SC 8 N
• Housing	M1460, M1461, M0595, M0596
▪ 1 Earthing rivet	double Faston
• SBG iPIPS 01.20,-.80,-.B0	40-0602302, -08, -11
▪ 1 Modular jack 4x8-p RJ45	X8-A,-B,-C,-D
▪ 1 Rotary code switch HEX-axial	S1

The power amplifier converts line signals to signals for the 8 Ω loudspeaker. Using a class-D amplifier reduces the amount of power losses due to linear output stages (AB stage).

Volume can be adjusted by means of the potentiometer knob.

Data transmission and configuration is done by an Ethernet interface with RTP protocol.

The sub-board comprises circuitry for ESD protection as well as the connection circuitry.

## Use Case: LED Indication with iLSP 09

green	Audio on line
red	Audio on line, volume below minimum level (adjustable by SW)

## Active Auxiliary Devices Connected via AUX-Lines

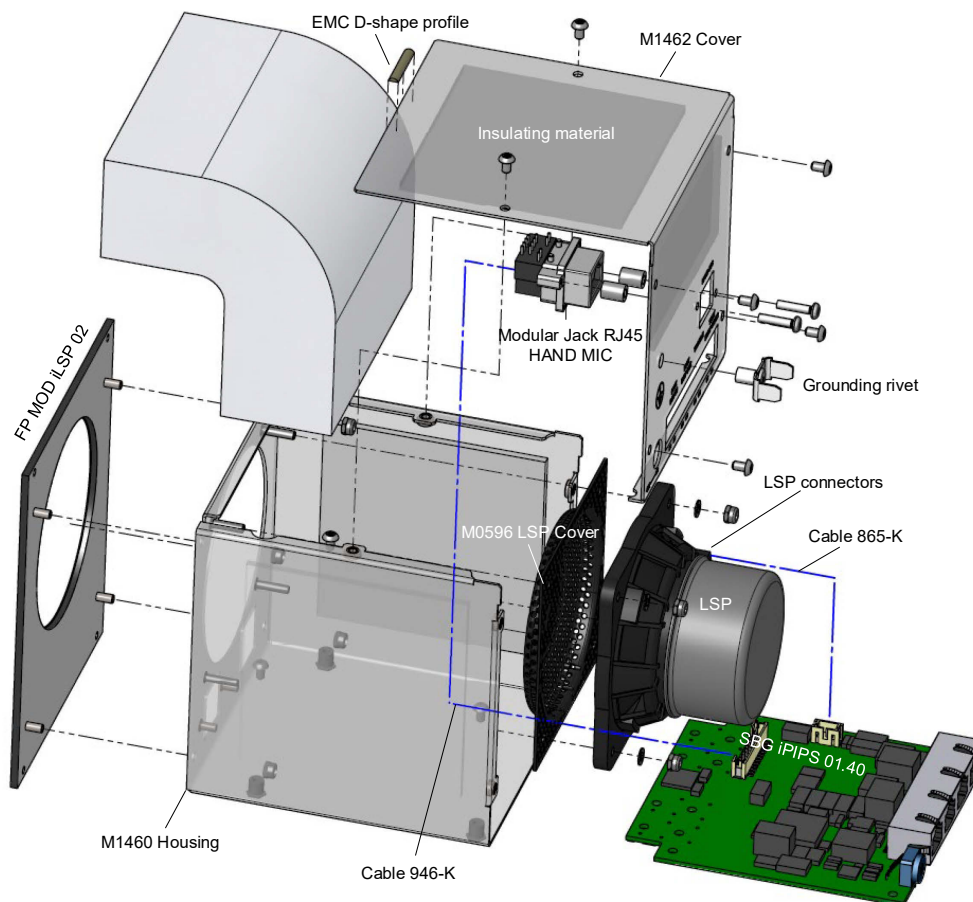
The AUX-devices (e.g. Plug-In Panels = PIPs) are connected via Ethernet in a daisy chain to the iPOS. Using a TDM-like layout, its FPGA sends packets containing the information for all devices in a chain, with all channels for one chain and data included to the 1<sup>st</sup> connected PIP.

Then, each PIP exchanges its own sub-frame with its own data, and re-transmits the packet to the next AUX-device. The last AUX-device transmits back to the iPOS. No conferencing or level adjustment is needed.

Switched connections depend on the connected type of AUX-devices. For routing of the corresponding audio to AUX-devices of the same type, the iPOS identifies the device by means of the setting of the 16-turn HEX rotary encoder setting (4 bit). If there is only one AUX-device of a certain type the encoder has to be set to zero.

For every device of the same type added to the same AUX-line, the encoder has to be incremented by one. This tells the software where the data of a special audio stream has to be routed.

### Overview iLSP 02



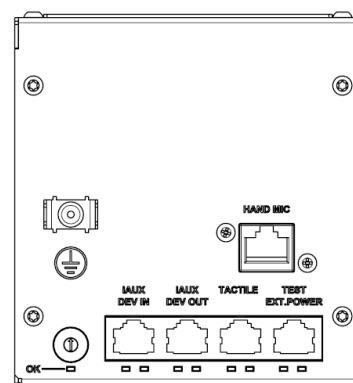
#### Main Components

- |   |                            |              |
|---|----------------------------|--------------|
| • Front panel, foil varnished                       | M0704,-5, -0596; S231      | Position / # |
| • Loudspeaker (8 Ω, 30W)                            | SC 8 N                     |              |
| • Housing   | M1460, M1462, M0595, M0596 |              |
| • Rear Cover  | M1462                      |              |
| ▪ 1 Earthing rivet                                  | double Faston              |              |
| ▪ 1 Modular Jack                                    | RJ45, 8-p, f               |              |
| • SBG iPIPS 01.40                                   | 40-0602304                 |              |
| ▪ 1 Modular jack 4x8-p RJ45                         | X8-A,-B,-C,-D              |              |
| ▪ 1 Rotary code switch HEX-axial                    | S1                         |              |
| • Cable 865-K (LSP – PCB <sub>X11</sub> )           | 17-0865000                 |              |
| • Cable 946-K (RJ45 Hand Mic – PCB <sub>X18</sub> ) | 17-0946000                 |              |

Variant iLSP 02 is designed to provide an additional RJ45 for connecting a hand microphone (incl. PTT key); no incoming audio LED and no volume control is populated.

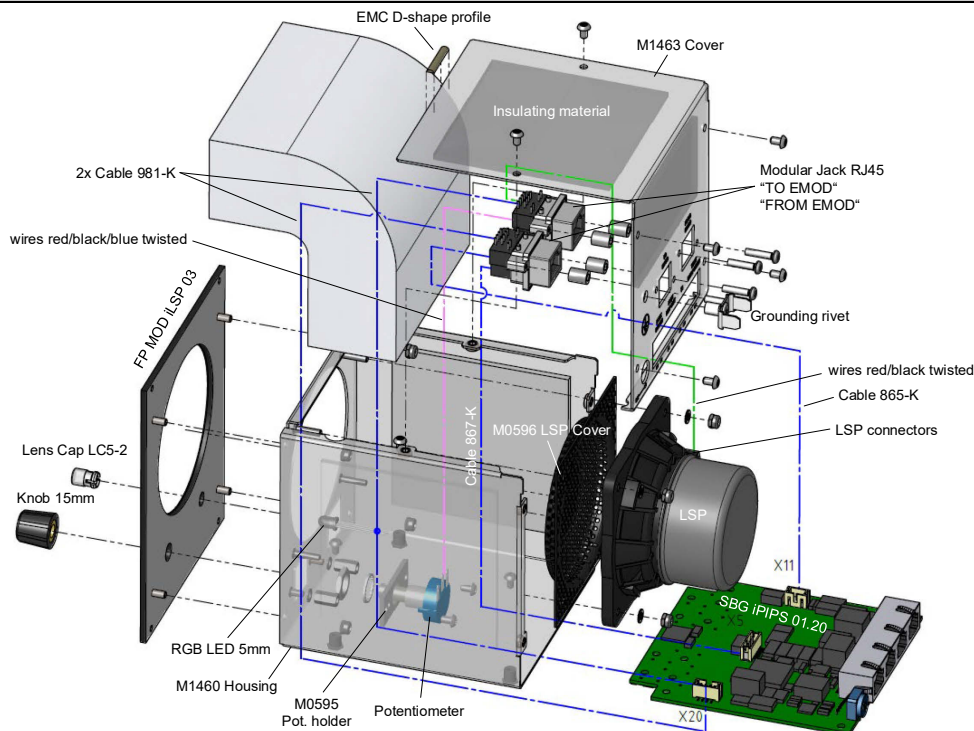
The iLSP RJ45 connector "FS" is used in iLSP 02 to interface to the existing Canadian "TACTILE" Assembly TAST 05.

The accompanying LEDs of the *HAND MIC* RJ45 are not used.





## Overview iLSP 03, 03 N, 03 L

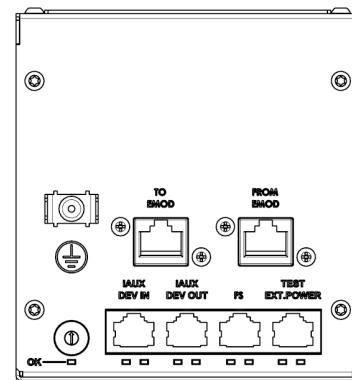


### Main Components

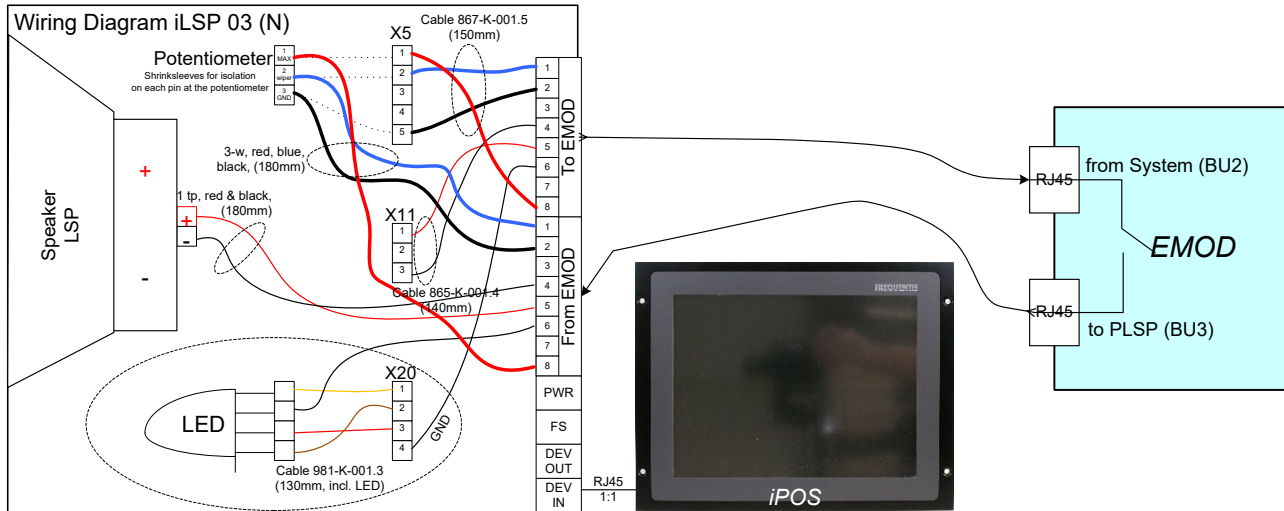
- |  |               |
|--|---------------|
| • Front panel, varnished with foil, incl. cover                                  | M0591,-2,-6   |
| ▪ Potentiometer 10k;   |               |
| • Cable 865-K (EMOD $\Rightarrow$ PCB <sub>X11</sub> )                           | 17-086500x    |
| • Cable 981-K (EMOD $\Leftrightarrow$ LED $\Leftrightarrow$ PCB <sub>X20</sub> ) | 17-098100x    |
| incl. LED RGB 5mm  |               |
| • Cable 867-K (Poti – PCB <sub>X5</sub> )  | 17-086700x    |
| • Loudspeaker (8 $\Omega$ , 30W)   | SC 8 N        |
| • Housing M1460, M1463, M0595, M0596   |               |
| ▪ 2 Modular jacks  | RJ45, 8-p, f  |
| ▪ 1 Earthing rivet   | double Faston |
| • SBG iPIPS 01.20  | 40-0602302    |
| ▪ 1 Modular jack 4x8-p RJ45  | X8-A,-B,-C,-D |
| ▪ 1 Rotary code switch HEX-axial   | S1            |

Variant iLSP 03 is designed to allow the operator to use the same audio devices for VCS and emergency system RES-Q, supporting in RES-Q mode audio to iLSP and plug-in panel (iPIP(S)) in parallel, also disconnecting the VOX LED.

Variant iLSP 03 N differs from iLSP 03 only by its front panel colour.



### Wiring Diagram iLSP 03 (N)

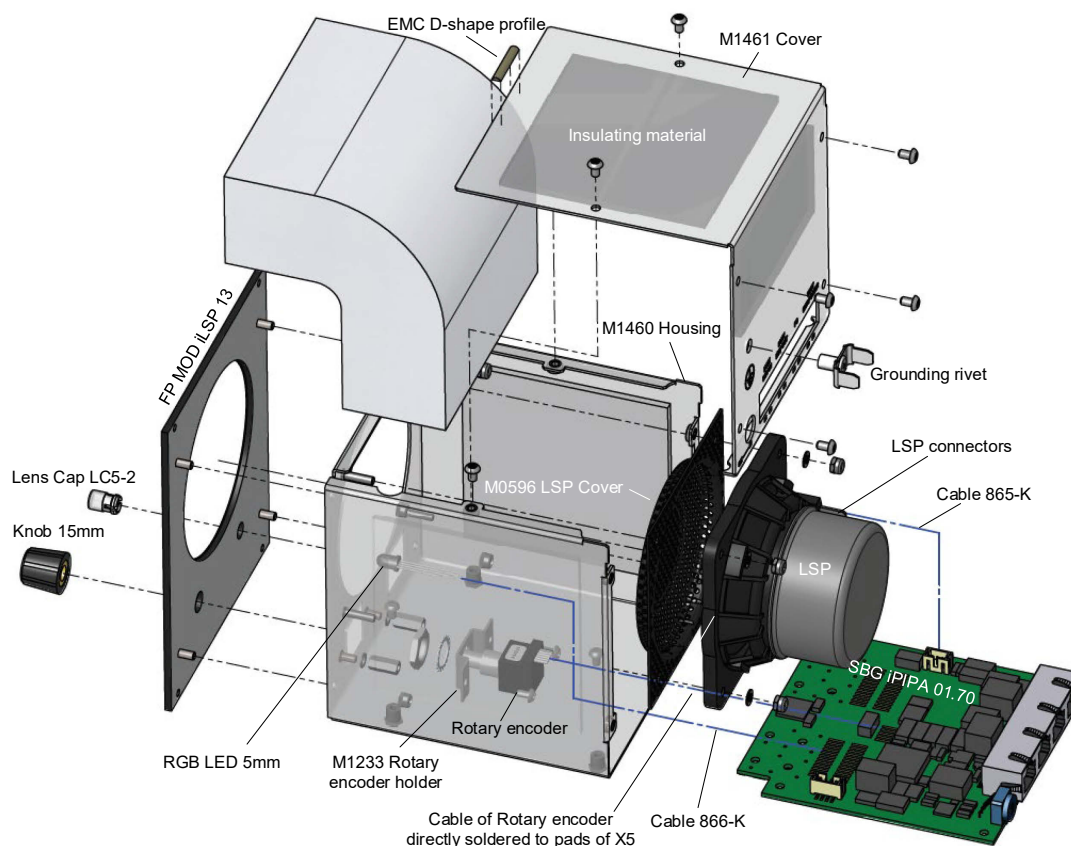


Overview iLSP 03

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### Overview iLSP 13



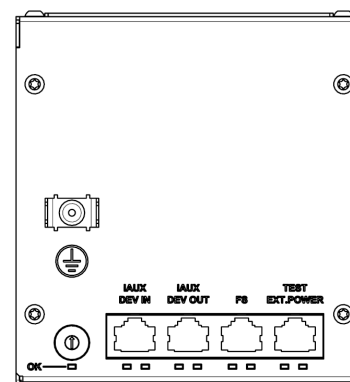
#### Main Components

- |   | Position / #               |
|---|----------------------------|
| • Front panel, varnished with foil        | M0591,-2,-6; S0377         |
| ▪ Holder for rotary encoder               | M1233                      |
| • Cable 865-K (LSP – PCB <sub>X11</sub> ) | 17-0865000                 |
| • Cable 866-K (LED – PCB <sub>X3</sub> )  | 17-0866000                 |
|   | incl. LED RGB 5mm          |
| HiBr                                      |                            |
| • Loudspeaker (8 Ω, 30W)                  | SC 8 N                     |
| • Housing                                 | M1460, M1461, M0595, M0596 |
| ▪ 1 Earthing rivet                        | double Faston              |
| • SBG iPIPA 01.70                         | 40-0902807                 |
| ▪ 1 Modular jack 4x8-p RJ45               | X8-A,-B,-C,-D              |
| ▪ 1 Rotary code switch HEX-axial          | S1                         |

The power amplifier converts line signals to signals for the 8 Ω loudspeaker. Using a class-D amplifier reduces the amount of power losses due to linear output stages (AB stage).

Volume can be adjusted by means of the rotary encoder (16 detent positions). Data transmission and configuration is done by an Ethernet interface with RTP protocol.

The sub-board comprises circuitry for ESD protection as well as the connection circuitry.

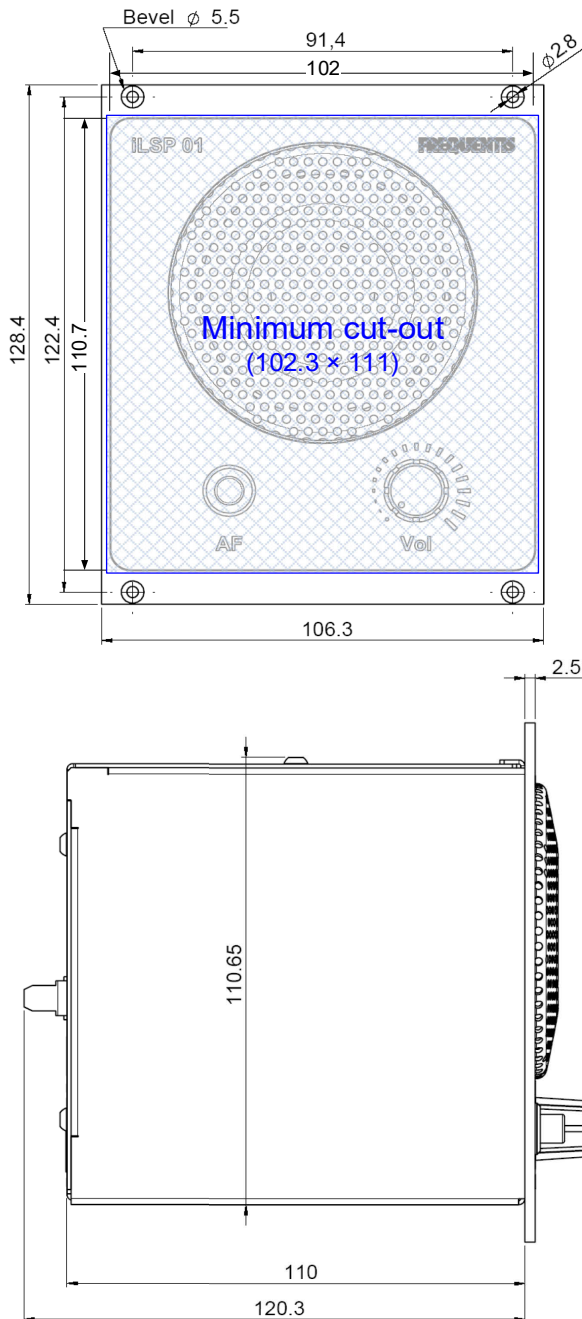


## Installation

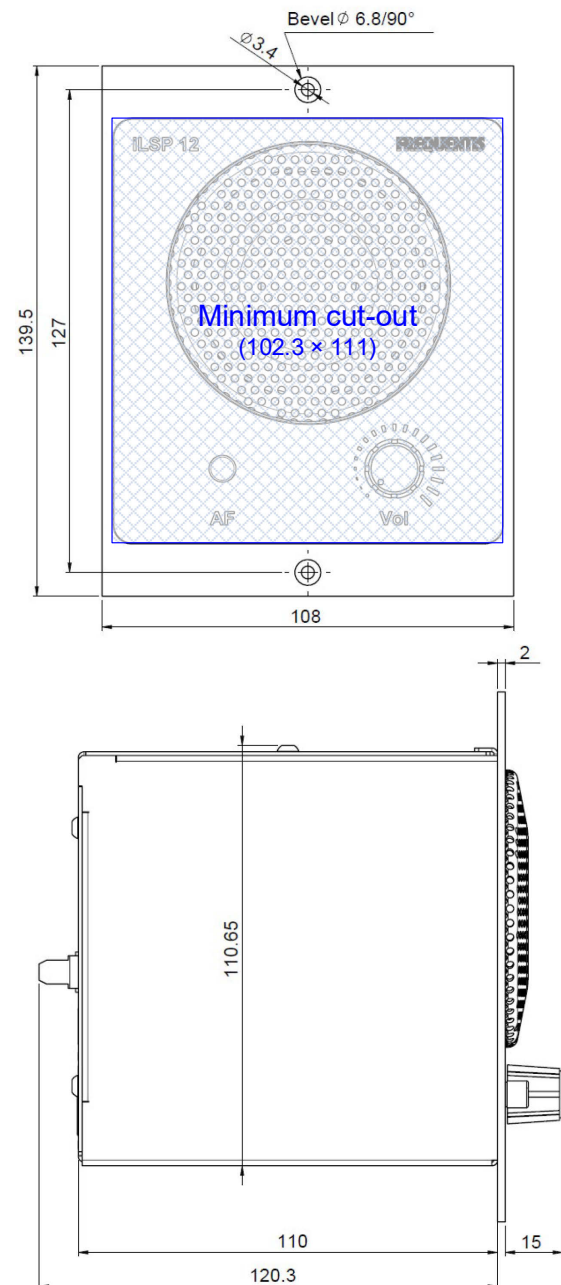
Dimensions in [mm]

**Mounting of iLSP 01, 02, 03, 04, 07, 09, 11, 13**

Designed for mounting in a 3 HU grid, no specific mounting set is needed for mounting the iLSP xy into a desk cut out since the panel can simply be fastened with 4 appropriate mounting screws (countersunk M2.5 × 10 mm order no.: 10-007627) e.g., drilling Ø 2.8 mm).

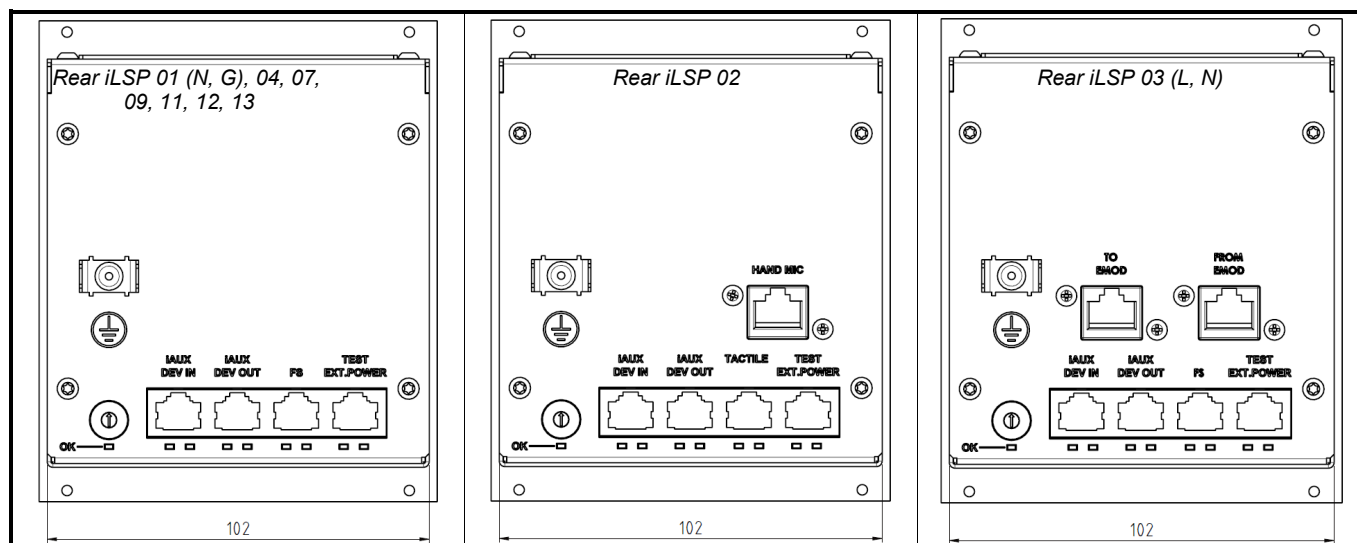
**Mounting of iLSP 12**

No specific mounting set is needed for mounting the iLSP 12 into a desk cut out since the panel can simply be fastened with 2 appropriate mounting screws (countersunk M3.0 × 8 mm order no.: 10-0007221 e.g., drilling Ø 3.4 mm).



Make sure you provide at least 17 cm clearance (for connectors and cable bending) for the iLSP xy. Connect the module via the rear Faston to the site's equipotential bonding system.

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### Cabling of MOD iLSP xy (Examples)

#	FROM	Cable Type	Length [m]	Order No.	Destination	TO	Description
≤1	<b>TEST</b>	993-LSF	2	17-0993000	Testing device	Notebook	Serial test interface (RS232)
		RJ45-USBA	3	20-0003110	device (RS232)		Serial test interface cable RJ45 <-> USB A
	<b>EXT.POWER</b>		iPIPS side: <1.5 Line side: var. *)	t.b.d.	additional DC supply		*) cables on the line side are the concern of the customer: requires RJ45 connector!
≤1	<b>FS</b>	integrated	various		Footswitch	FS 30, FSB 0x,	Footswitch
		434-K	various	17-043400x	Distribution fr.		Digital in-/outputs
≤1	<b>iAUX DEV OUT</b> (Module N)	713-LSF	various	17-071300x	<b>iAUX DEV IN</b> (Module N+1 resp. loop back)	iPIP(S), iLSP, iLAP-D, ...	AUX-line for up to 4 auxiliary devices (plug-in panel, loudspeaker, etc.)
		869-K		17-0869000	last module only		Loop back
1	<b>iAUX DEV IN</b> (Module M)	713-LSF	various	17-071300x	<b>iAUX DEV OUT</b> (Module M-1)	iPIP(S), iLSP, iLAP-D, ...	AUX-Line for up to 4 auxiliary devices (plug-in panel, loudspeaker, etc.)
1	<b>TO EMOD</b> (iLSP 03 only)	957-K	various	17-095700x	from System	EMOD	Radio Emergency System RES-Q connected
		772-LSF 1490-K	various	17-077200x 17-149000x	<b>FROM EMOD</b>	iPIPS	without connection to RES-Q
1	<b>FROM EMOD</b> (iLSP 03 only)	956-K	various	17-095700x	to iPIPS	EMOD	Radio Emergency System RES-Q connected
		772-LSF 1490-K	various	17-077200x 17-149000x	<b>TO EMOD</b>	iPIPS	without connection to RES-Q



Use only Frequentis-cables for maintenance purposes. Please note that the twisted wire pairs on the RJ45 connections are not always side-by-side in commercially available CAT5 cables.



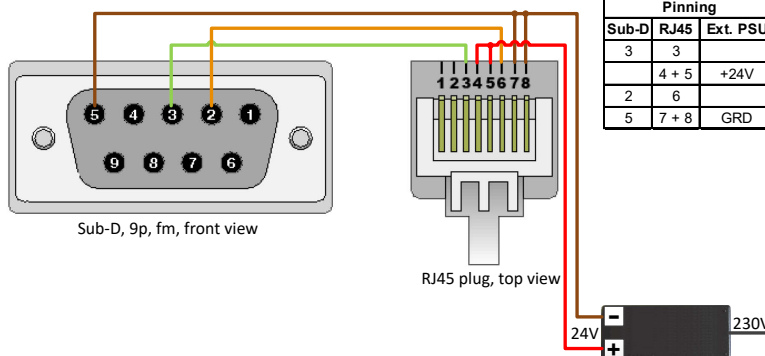
**Power Supply**

The module is solely intended for use in SELV circuits. All outputs are short-circuit-proof, but a short circuit or overload can impact the proper operation of the board! Proper fusing of the supply lines is required. To avoid cable burn-out due to short circuits (in case of negative DC supply voltage) and/or to avoid cross currents, a DC/DC converter has to be interconnected on the supply line.

Power configurations without direct supply from iPOS have to be agreed with Frequentis. The TEST / EXT.POWER jack (X8-D) on the rear can be used for supplementary external 24V DC power supply, if otherwise the current consumption of the AUX-devices on the AUX-line would exceed 0.75 A.

To comply with the approved standards, Frequentis recommends in case of primary AC MOD PHUB 01 (30-0802800).

For testing of spare parts or in case of non-running iPOS, AUX-devices like iLSP require also an external 24V power supply. In that case, the test interface cable needs additional pins for 24 V external power (see picture right).



For notebooks without serial interface port, the USB-to-RJ45 Test interface (20-0003110) cable is necessary.



To comply with the EMC standards, the cable length between the module and the voltage converter must not exceed 10 m!

Pinning of Rear Connectors					Wiring Diagram	
Pin	Label/Signal	Type	Description	Ref. connector	Schematic	
<b>iAUX DEV IN</b> RJ45 <b>PCB<sub>X8-A</sub></b>					<div> <p><b>Legend for Pinning</b></p> <p>Blue analog lines</p> <p>Red digital lines</p> <p>Green supply &amp; earth</p> </div> <div> <p>TEST</p> <p>EXT. POWER</p> <p>FS</p> <p>IAUX DEV IN</p> <p>IAUX DEV OUT</p> <p>OK</p> <p>Rear View</p> </div> <div> <p>up to 2 footswitches can be connected to the 1<sup>st</sup> two iLSP, if supported by the audio matrix of the system</p> <p>Levels</p> <p>dry contact, detect TTL vs. GND</p> <p>0 V =: <math>U_{IL} \leq 0.8 \text{ V}</math>, <math>3.0 \text{ V} \leq U_{IH} = +5 \text{ V}</math></p> <p>Ethernet complies with IEEE 802.3</p> <p>AUX_</p> </div>	
1	AUX_RX_P	IN	Ethernet from AUX <sub>N-1</sub> /iPOS			
2	AUX_RX_N	IN	Ethernet from AUX <sub>N-1</sub> /iPOS			
3	AUX_RET_P	OUT	Return path for Ethernet, a			
4	P24V_IN	IN	+24 V input (+5/-20 %); <1 A			
5	P24V_IN	IN	p5 connected to p4			
6	AUX_RET_N	OUT	Return path for Ethernet, b			
7	DGND	IN	Digital earth			
8	DGND	IN	Digital earth (p7 to p8)			
<b>iAUX DEV OUT</b> RJ45 <b>PCB<sub>X8-B</sub></b>					<div> <p>Termination loop</p> <p>AUX-Device 4</p> <p>AUX-Device 1</p> <p>Mainboard iPOS</p> <p>Sub-board iAUX</p> <p>QUAD PHY</p> <p>MII</p> <p>Audio Devices: Headsets, Handsets, Loudspeaker, ...</p> </div>	
1	AUX_TX_P	OUT	Ethernet to AUX <sub>N+1</sub> /terminat.			
2	AUX_TX_N	OUT	Ethernet to AUX <sub>N+1</sub> /terminat.			
3	AUX_RET_P	IN	Return path for Ethernet, a			
4	P24V_OUT	OUT	p4 connected to p5;			
5	P24V_OUT	OUT	+24 V input (+5/-20 %); <1 A			
6	AUX_RET_N	IN	Return path for Ethernet, b			
7	DGND	IN	Digital earth			
8	DGND	IN	Digital earth (p7 to p8)			
<b>FS / TACTILE</b> RJ45 (count of realized contacts depends on iPOS audio matrix) <b>PCB<sub>X8-C</sub></b>					<div> <p>Audio Hardware</p> <p>FPGA</p> <p>Serial No.</p> <p>Configurat</p> <p>ion Flash</p> <p>SPI</p> <p>Footswitch</p> <p>RS232</p> <p>ext. power</p> <p>V01 only: Hand microphone</p> <p>HAND MIC</p> </div>	
1	PTT_A2 Key_1	IN	PTT 2, a (option)	Tactile 1		
2	PTT_A3 Key_2	IN	PTT 3, a (option)	Tactile 2		
3	FTSW0 Key_3	IN	Footswitch 0, a	Tactile 3		
4	PTT_B2 Key_4	IN	PTT 2, b (option)	Tactile 4		
5	PTT_B3 Key_5	IN	PTT 3, b (option)	Tactile 5		
6	DGND	SELV	Footswitch 0, b	Earth		
7	DGND	SELV	Footswitch 1, b	Earth		
8	FTSW1 -	IN	Footswitch 1, a	not used		
<b>TEST / EXT. POWER</b> RJ45 <b>PCB<sub>X8-D</sub></b>					<div> <p>Audio Hardware</p> <p>FPGA</p> <p>Serial No.</p> <p>Configurat</p> <p>ion Flash</p> <p>SPI</p> <p>Footswitch</p> <p>RS232</p> <p>ext. power</p> <p>V01 only: Hand microphone</p> <p>HAND MIC</p> </div>	
1	RTS	OUT	Request to send			
2	CTS	IN	Clear to send			
3	RXD	IN	Receive data			
4	P24V_EXT	IN	p4 connected to p5			
5	P24V_EXT	IN	+24 V input (+5/-20 %); <1 A			
6	TXD	OUT	Transmit data			
7	DGND	IN	Digital earth			
8	DGND	IN	Digital earth			
<b>HAND MIC</b> RJ45 <b>iLSP 02 only!</b> <b>PCB<sub>X18</sub></b>					<div> <p>Audio Hardware</p> <p>FPGA</p> <p>Serial No.</p> <p>Configurat</p> <p>ion Flash</p> <p>SPI</p> <p>Footswitch</p> <p>RS232</p> <p>ext. power</p> <p>V01 only: Hand microphone</p> <p>HAND MIC</p> </div>	
1	PTT_A0	IN	Push-to-talk hand mic			
2	GND	IN	PTT earth			
3	-					
4	PA_L_MIC_P	IN	Audio signal hand mic +			
5	PA_L_MIC_N	OUT	Audio signal hand mic -			
6	DGND	IN	Earth			
7	DGND	OUT	Earth			
8	-		n.c.			
<b>TO EMOD</b> RJ45 <b>iLSP 03 only!</b> <b>PCB<sub>X11, X20</sub></b>					<div> <p>Audio Hardware</p> <p>FPGA</p> <p>Serial No.</p> <p>Configurat</p> <p>ion Flash</p> <p>SPI</p> <p>Footswitch</p> <p>RS232</p> <p>ext. power</p> <p>V01 only: Hand microphone</p> <p>HAND MIC</p> </div>	
1	-					
2	-		n.c.			
3	-					
4	LSP_OUT_P	OUT	Audio +			
5	LSP_OUT_N	OUT	Audio -			
6	LED_ON (VG_A)	OUT	LED on			
7	-		n.c. (not connected)			
8	-					

