

FREE+

Build-in AUDIO option

TECHNICAL SPECIFICATION



FREEplus_Audio_TS_02.doc

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[**TIPRO**]

keyboards focusing on your future needs.

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1. Introduction

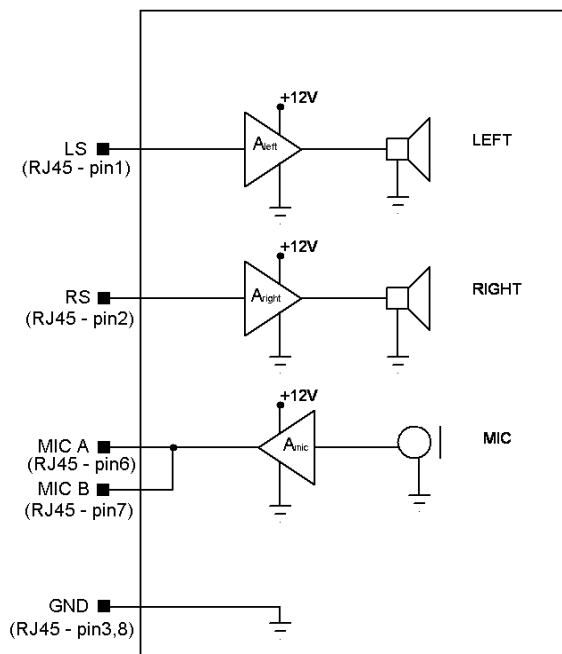
1.1. General description:

Audio option for FREE+ modules enables sound interaction between a user and the computer. It contains two built-in loudspeakers capable of producing 2 x 1W of audio power, an omni directional electret microphone and amplifiers. Microphone and loudspeaker amplifiers are designed according to PC2001 standard, which enables connection to any PC2001 compatible sound card.

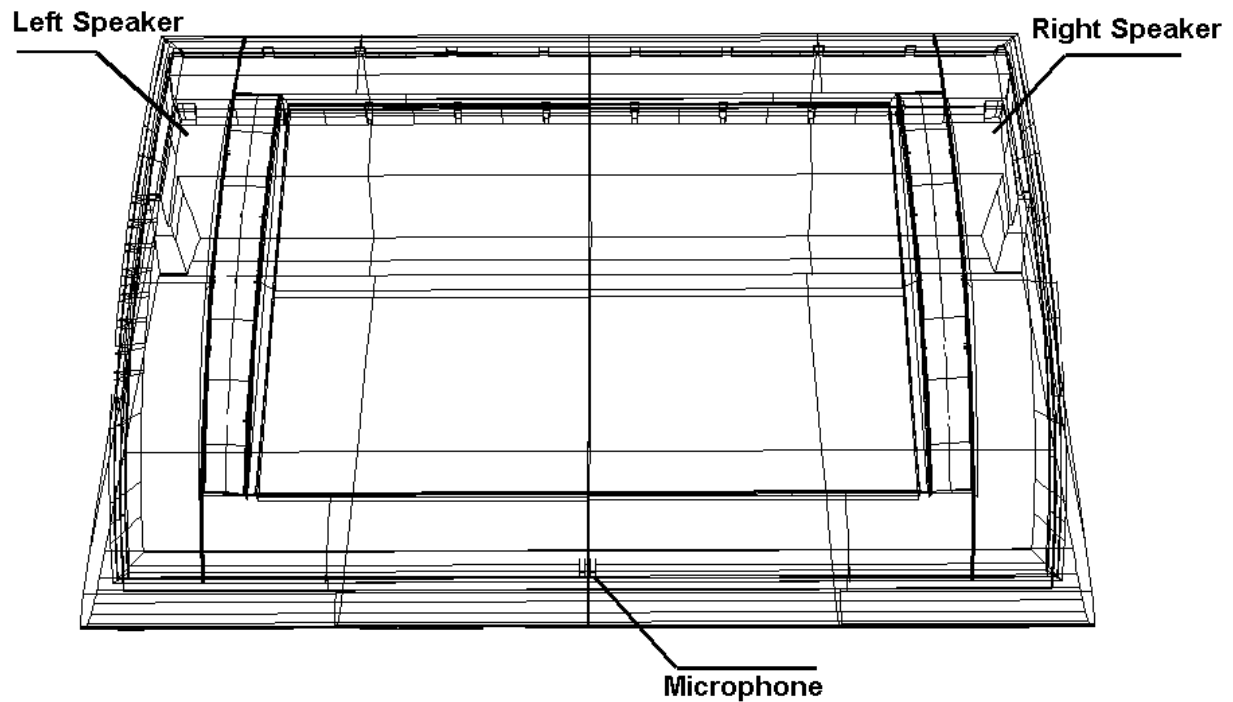
1.2. Features:

- One RJ45 connector on Touch side
- 1 Watt built-in stereo loudspeakers
- Omni directional electret condenser microphone
- Compatible with standard sound cards
- No additional power supply needed

1.3. Block diagram



1.4. Position of audio option in Touch module



1.5. Ordering codes

Audio option is defined in position 6 of the FREE+ ordering code.

T	M	-	T	V	R	-	A	2	1	-	C	1	-			
	1		2	3		4	5	6		7				8		

1. T: touch module
2. Video input
3. Touch screen output
4. TFT LCD display type
5. Shortcut keys along the sides
6. **Integrated audio**
 - 0: no audio
 - 1: stereo loudspeakers and microphone
7. Colour
8. Custom version (optional)

For other ordering codes, see the FREE/FREE+ technical supplement.

2. Technical data

2.1. Loudspeakers

Amplifier	Min	Typ	Max	Unit
Input voltage (Vpp)			2.7	V
Input impedance		11		kΩ
Power supply ¹		12		V

Loudspeakers Characteristics	Conditions	Min	Typ	Max	Unit
Output power				1.0	W
Frequency range	3 dB limit	0.1		15	kHz
Sensitivity	1 kHz, 1 W	82	85	88	dB
Impedance			8		Ω
Distortion	300 Hz – 8kHz			5	%

2.2. Microphone

Amplifier	Min	Typ	Max	Unit
Voltage (Vrms)		1.0		V
Output impedance			5	Ω
Power supply ²		12		V

Microphone Characteristics	Conditions	Min	Typ	Max	Unit
Type: Omni-directional electret condenser microphone					
Frequency range	3 dB limit	0.1		5	KHz
S/N Ratio	1 kHz, 0.1 Pa	40			dB

¹ Internal FREE+ power supply is used

² Internal FREE+ power supply is used

