

# MANUAL



# CONCEPT1 CONCEPT1T

## **Main features**

3 basic operating modes combined in 1 device: stereo, 2Zone linked mono and 2Zone individual mono.

Paging microphone input with 2 zone programmable paging control.

Standalone and/or RS232 controlled operation.

Removable 19 inch rack ears included.

Menu driven hidden configuration accessible for installers only.

Lockable front panel controls.

Super simple no-nonsense user interface.

Multi functional stylish blue colour dot matrix gas display.

Presetable paging mic gain and separate tone control.

Integrated switchable highpass filter for use with optional subwoofers.

Separate line out and pre out.

4 stereo gain-adjustable line inputs with additional link-out on input 1.

Line 4 input also available as a mini jack in on the frontpanel for connection of personal audio devices.

Programmable maximum microphone and music levels for all zones.

Switchable automatic loudness compensation.

Low impedance (Concept 1) and 100 volt speaker line outputs (Concept 1T) available.

Powerfull dynamic power amplifier circuit

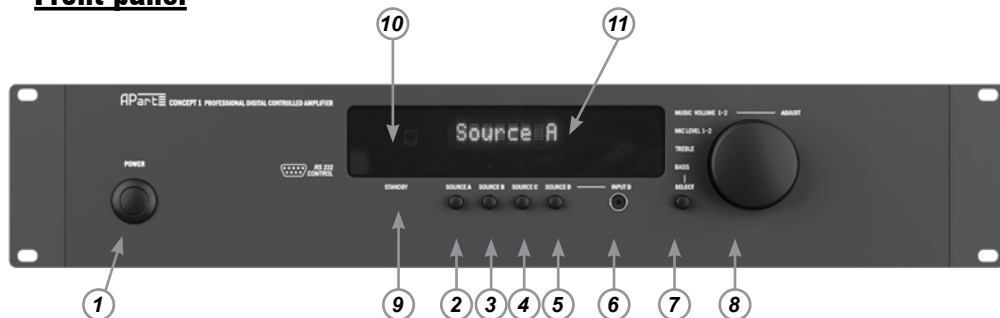
Intelligent power limiter circuit.

1 or 2 zone paging microphone optionally available.

IR remote control optionally available.

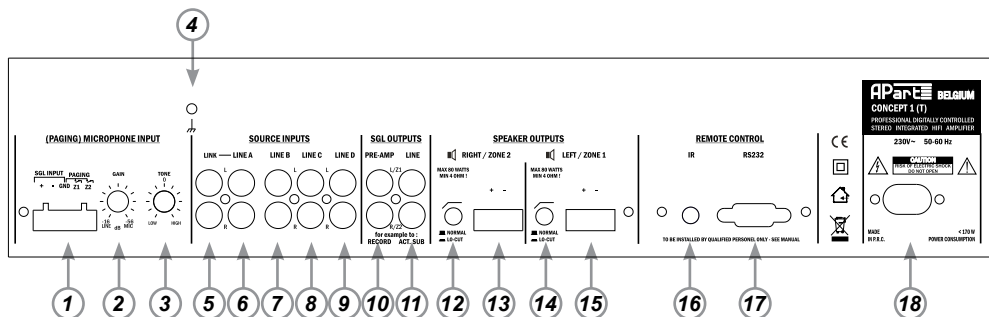
IR control extender optionally available.

## Front panel



- 1) Power on/off button: push this button to turn the power on and off
- 2, 3, 4, 5) Source A-D selector: push this button to select line source A-D. A led above the knobs is lit when source A-D is selected.
- 6) Source D mini jack input: this line input is shared with the source D connector at the rear  
Only use one of the two at the same time.
- 7) Select button: push this button to select basic submenus
- 8) Multifunctional encoder knob: turn this knob to adjust the main volume and other menu parameters
- 9) Stand-by led: this led is lit when the unit is powered off by RS232 control or infrared remote.  
The led will flash when data is transmitted or received from any remote control.
- 10) Infrared receiver
- 11) Multi functional dot matrix gas display

## Rear panel



1) Microphone input: connect your (paging) microphone on this euroblock connector, connect the signal on +, -, the screen on GND. Connect the eventual paging contacts between GND and Z1 (for zone 1) and between GND and/or Z2 (for zone 2). The input gain can be adjusted with knob 2 between line and mic level to avoid distortion.

2) Mic input gain control: mic input gain adjust

3) Mic input tone control: adjust the tone of the mic input between dark and bright

4) Ground connection: connect your safety ground lead or screens of your shielded input cables on this screw if necessary.

5) Link output: the signal here is a copy of the line A input signal

6) Line A: stereo line RCA connector

7) Line B: stereo line RCA connector

8) Line C: stereo line RCA connector

9) Line D: stereo line RCA connector, a mini jack version of the line D input is available on the front panel. Only use one of the two input's at the same time.

10) Pre-amp out: these RCA connectors offer a line level signal, after the master volume, but before the limiter. For details, please take a look at the block diagram on page 7.

11) Line out: these RCA connectors carry the line level signal after passing the volume control and limiter circuit. This is an ideal way to connect to active subwoofers or extra power amplifiers

12) Lo-cut right channel/zone 2: when this button is pushed, the signal to the internal power amplifier reduces the sub bass frequencies for driving small sized top speakers. It works ideally in combination with subwoofers

13) Right channel/zone 2 output: use this euroblock connector to connect your right/zone 2 speaker, minimum load impedance is 4 ohm (167 ohm for T version)

14) Lo-cut left channel/zone 1: when this button is pushed, the signal to the internal power amplifier reduces the sub bass frequencies for driving small sized top speakers. It works ideally in combination with subwoofers

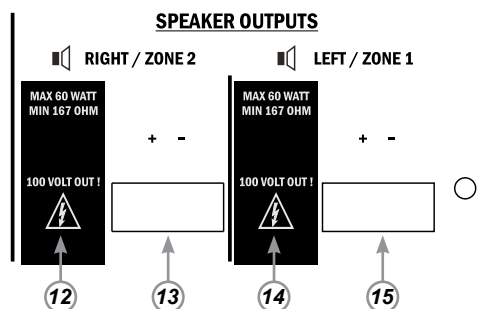
15) Left channel/zone 1 output: use this euroblock connector to connect your left/zone 1 speaker, minimum load impedance is 4 ohm (167 ohm for T version)

16) IR jack: connect the optionally available IR remote receiver on this minijack connector: Sleeve = GND, ring = data, tip = +5VDC. Once this receiver is connected, the IR-receiver behind the front panel is bypassed.

17) RS232: 9 pin sub D connector for connection of computers or other automated audio system controllers

18) Ac input: plug in the supplied mains cable here. Check your mains voltage first !

## **CONCEPT1T Version**



Difference on Concept 1T

12) lo-cut Right channel/zone 2: switch not available

13) Right channel/zone 2 output on euroblock connector: minimum load impedance: 167 ohm or 60 watts/100 volt

14) lo-cut Left channel/zone 1: switch not available

15) Left channel/zone 1 output on euroblock connector: minimum load impedance: 167 ohm or 60 watts/100 volt

## User Operation

The table below shows the 3 possible operating modes: stereo, 2 separate mono zones with one linked music volume control and 2 separate mono zones with individual music volume control. You can adjust the volume by turning the large rotary control from -80 dB (lowest) to 0 dB (highest). Volume adjustment is the default parameter assigned to the rotary control. In order to enter the menu, press the select button next to the large rotary control.

Example in stereo operating mode: press the select button once to show the first editable parameter, VOL appears in the display.

Push the select button a second time to adjust the microphone level, MIC appears in the display.

Push the select button a third time to adjust treble tone control, TREB appears in the display.

Push the select button a fourth time to adjust bass tone control, BASS appears in the display.

Push the select button again, EXPERT appears in the display. This menu is not allowed for the user.

Push the select button again to return to VOL or wait a few seconds, the display will jump back to VOL automatically.

STEREO SYSTEM			2 SEPARATE ZONES WITH ONE LINKED MUSIC VOLUME CONTROL			2 SEPARATE ZONES WITH INDIVIDUAL MUSIC VOLUME CONTROL			
DISPLAY	MEANING	USER CONTROL	DISPLAY	MEANING	USER CONTROL	DISPLAY	MEANING		
VOL	MUSIC VOLUME		VOL	MUSIC VOLUME		VOL1	MUSIC VOLUME ZONE 1	VOL2	MUSIC VOLUME ZONE 2
MIC	MICRO LEVEL		MIC1	MICRO LEVEL ZONE 1		MIC1	MICRO LEVEL ZONE 1	MIC2	MICRO LEVEL ZONE 2
TREB	TREBLE TONE CONTROL		MIC2	MICRO LEVEL ZONE 2		MIC2	MICRO LEVEL ZONE 2	TREB	TREBLE TONE CONTROL
BASS	BASS TONE CONTROL		TREB	TREBLE TONE CONTROL		TREB	TREBLE TONE CONTROL	BASS	BASS TONE CONTROL
EXPERT	<small>↑ RETURN OF</small> <small>PROCEED to EXPERT SETTINGS</small> <small>( "SELECT" + "SOURCE D" )</small> <small>↓</small>		EXPERT	<small>↑ RETURN OF</small> <small>PROCEED to EXPERT SETTINGS</small> <small>( "SELECT" + "SOURCE D" )</small> <small>↓</small>		EXPERT	<small>↑ RETURN OF</small> <small>PROCEED to EXPERT SETTINGS</small> <small>( "SELECT" + "SOURCE D" )</small> <small>↓</small>		
ZONE	set at 1 = 1 ZONE WITH STEREO SIGNAL		ZONE	set at 2 = 2 SEPARATE ZONES WITH MONO SIGNAL		ZONE	set at 2 = 2 SEPARATE ZONES WITH MONO SIGNAL		
MMU1	set MAX. MUSIC VOLUME		LINK	set at 1 = ONE LINKED MUSIC VOLUME CONTROL FOR BOTH ZONES		LINK	set at 0 = SEPARATE MUSIC VOLUME CONTROL FOR EACH ZONE		
MMI1	set MAX. MICRO LEVEL		MMU1	set MAX. MUSIC VOLUME FOR ZONE 1		MMU1	set MAX. MUSIC VOLUME FOR ZONE 1		
ALD	set AUTOMATIC LOUDNESS ON/OFF		MMU2	set MAX. MUSIC VOLUME FOR ZONE 2		MMU2	set MAX. MUSIC VOLUME FOR ZONE 2		
GAIN	set PRESET GAIN OF SELECTED SOURCE	MMI1	set MAX. MICRO LEVEL FOR ZONE 1	MMI1	set MAX. MICRO LEVEL FOR ZONE 1				
PAG	set PAGING ON/OFF	MMI2	set MAX. MICRO LEVEL FOR ZONE 2	MMI2	set MAX. MICRO LEVEL FOR ZONE 2				
		GAIN	set PRESET GAIN OF SELECTED SOURCE	GAIN	set PRESET GAIN OF SELECTED SOURCE				
		PAG1	set PAGING ON/OFF FOR ZONE 1	PAG1	set PAGING ON/OFF FOR ZONE 1				
		PAG2	set PAGING ON/OFF FOR ZONE 2	PAG2	set PAGING ON/OFF FOR ZONE 2				

FOR INSTANT ACCESS ONLY

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FRONT PANEL CONTROLS CAN BE ENABLED OR DISABLED BY PRESSING "SELECT" + "SOURCE A" + "SOURCE B", RS232 CONTROLLED

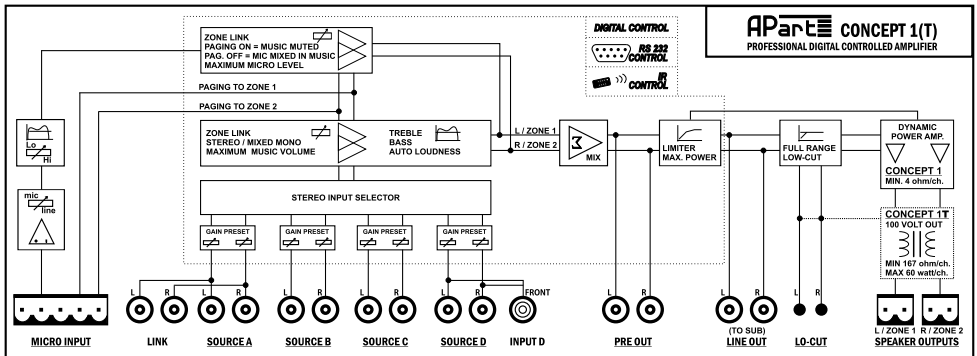
## Expert Operation

In order to edit the EXPERT parameters, push select repeatedly until "EXPERT" appears in the display. Then press the 'SELECT' and the 'SOURCE D' button. A hidden menu structure is now available and gives you the opportunity to edit several parameters, such as operating mode, maximum music level and so on. The table shows the entire menu structure. The menu tree is also printed on top of the Concept1 unit and should need no further explanation.

To leave the EXPERT mode: press 'SELECT' and the 'SOURCE' button simultaneously.

In the EXPERT mode if there is no action for 1 minute, the unit will auto return to USER mode.

## Blockdiagram



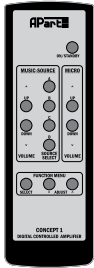
## RS232 & IR Information

Please check our website for the latest information on RS232 and IR communication:

[Http://www.apart-audio.com](http://www.apart-audio.com)

## Accessories

### CONCEPT1-RC



Infrared remotecontrol unit.

### MICPA-2



2-zone paging microphone.

### PIR-REC



Infrared remote receiver with 5 meters of cable and mini jack connector.

### CONCEPT1T-KIT



Kit of 2 pcs 100V transformers to change 1 or 2 channels of the CONCEPT1 into 100 Volt line outputs.



## **ERROR conditions**

SYMPTOM	DISPLAY	SOLUTION
NO POWER	NO DISPLAY	REPLACE MAIN FUSE. THE FUSE IS LOCATED INSIDE THE UNIT NEAR THE POWER SWITCH. FOR QUALIFIED PERSONNEL ONLY.
NO POWER, UNIT IS VERY HOT	NO DISPLAY	POWER OFF THE UNIT, WAIT FOR COOL DOWN AND POWER ON AGAIN.
NO SOUND	AMP ERROR	SWITCH POWER OFF AND ON AGAIN, IF ERROR IS NOT SOLVED, CHECK AMP FUSES ON MAIN PCB AND REPLACE IF NECESSARY. FOR QUALIFIED PERSONNEL ONLY.
OVERHEATED	HIGHTEMP	WAIT FOR COOL DOWN, REDUCE VOLUME AND CHECK SPEAKER LOADS.
ONLY FOR CONCEPT1T VERSION		
NO SOUND	AMP ERROR	CHECK IF THE ENVIRONMENT TEMPERATURE IS WITHIN THE OPERATING RANGE OF THE UNIT (0° - 40°C).

If any of these fault conditions occur, please unplug the power cord first, check your speaker lines, remove overloads.

## Technical Specifications

<i>CONCEPT1 &amp; CONCEPT1T TECHNICAL SPECIFICATIONS</i>	
CONCEPT 1	
DYNAMICS PROGRAM POWER, BOTH CHANNELS DRIVEN, 8 OHM	50 W + 50 W
DYNAMICS PROGRAM POWER, BOTH CHANNELS DRIVEN, 4 OHM	80 W + 80 W
DYNAMICS CAPACITY AT 1,7 OHM DIPS / CH	120 W
NOTE ; POWER OUTPUT CONTROLLED BY DIGITAL LIMITER	
LO-CUT FILTER	75 HZ / 12 DB/OCT
SPEAKER IMPEDANCE - CONNECTION	4 - 16 OHMS / CH - EUROBLOCK SECURED SCREW TERMINALS
DIGITAL CONTROL	
RS232	SUB-D9, GALVANICALLY ISOLATED
IR (IR-REMOTE CONTROL OPTIONAL)	FRONT IR EYE, REAR MINI-JACK
INPUTS / OUTPUTS	
SOURCE INPUTS A-B-C-D INPUT IMPEDANCE / SENSITIVITY	15 KOHM / 0,3V -10DBV, MAX 2,7V +8,5DBV
SOURCE INPUTS A-B-C-D DIGITAL PRESET GAIN RANGE	-20 / +14 DB
SOURCE DIGITAL TONE CONTROL	BASS 90HZ, TREBLE 15 KHZ, +/- 14DB
AUTOMATIC LOUDNESS	+6DB (90HZ) / +4DB (15 KHZ) TO FLAT 0DB
MICRO BALANCED INPUT IMPEDANCE / SENSITIVITY	1,5 KOHM / 1,5 MV -56DBV, MAX 0,4V -8DBV
MICRO BALANCED INPUT REAR PANEL GAIN TRIM	-56 / -16 DBV MIC - LINE
MICRO TONE CONTROL ; REAR PANEL LO - HI	100HZ/+3DB,10KHZ/-6DB TO 100HZ/-9DB, 10KHZ/+4DB
PRE-OUT IMPEDANCE / SENSITIVITY	1 K OHM / 0 DBV
LINE-OUT IMPEDANCE / SENSITIVITY	1 K OHM / +3 DBV
GENERAL	
OPERATION MODES	STEREO / 2 ZONES LINKED / 2 INDIVIDUAL ZONES
MICRO PAGING	1 OR 2 ZONE
FREQUENCY RESPONSE (- 0,5 DB)	10HZ-40 KHZ
THD	< 0,05%

<i>CONCEPT1 &amp; CONCEPT1T TECHNICAL SPECIFICATIONS</i>	
IMD	< 0,09%
NOISE A-WEIGHTED	> 100 DBA
GAIN	33 DB
DAMPING FACTOR	> 100
PROTECTION SYSTEMS	DC, TEMP CLIP, OVERCURRENT, SHORT-CIRCUIT
COOLING	CONVECTION, NO FAN
POWER CONSUMPTION	MAX 170 WATT
MAINS POWER REQUIREMENTS	240 - 230 VAC, 50-60 HZ
TEMPERATURE OPERATING RANGE	0° - 40°C
PHYSICAL SPECIFICATIONS	
NET DIMENSIONS (W X H X D)MM	430 (WITHOUT RACKEARS) X 88 X 290 (320 INCLUDING KNOBS)
GROSS DIMENSIONS (W X H X D)MM	530 X 380 X 170
NET WEIGHT	6.6 KG
GROSS WEIGHT	7.6 KG
CONCEPT 1T (100 VOLT OUTPUT VERSION)	
ALL SPECS SAME AS ABOVE, EXCEPT ;	
RMS PROGRAM POWER, BOTH CHANNELS DRIVEN, 167 OHM/CH,	60 W / 100 VOLT + 60 W / 100 VOLT
NET WEIGHT	8.2 KG
GROSS WEIGHT	9.2 KG

## **Safety Instructions**

- Please check the carton box for any kind of damage on reception of the goods. In case of a damaged carton, please contact your dealer before opening the carton.
- !!!! **Danger !!!!** Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably to noise induced hearing loss but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient amount of time. Therefore it is recommended that all persons exposed to equipment capable of producing high sound pressure levels, such as this amplifier, be protected by hearing protection while installing or operating this unit.
- Read all documentation before operating your equipment.
- Keep all documentation for future reference.
- Save the carton and packing material even if the equipment has arrived in good condition.
- Should you ever need to ship the unit, use only the original factory packing.
- Do not spill water or other liquids into or on the unit.
- Make sure power outlets conform to the power requirements listed on the back of the unit.
- Do not use the unit if the electrical power cord is frayed or broken.
- Have gain controls on amplifiers turned down during power-up to prevent speaker damage if there are high signal levels at the inputs.
- Do not connect the inputs / outputs of amplifiers or consoles to any other voltage source, such as a battery, mains source, or power supply, regardless of whether the amplifier or console is turned on or off.
- Power down & disconnect units from mains voltage before making connections.
- Do not use the unit near stoves, heat registers, radiators, or other heat producing devices.
- Do not operate equipment on a surface or in an environment which may distort the normal flow of air around the unit. If the unit is used in an extremely dusty or smoky environment, the unit should be periodically "blown free" of dust.
- Do not remove the cover. Removing the cover will expose you to potentially dangerous voltages.
- Do not drive the inputs with a signal level higher than that required to drive equipment to full output.
- Do not run the output of any amplifier back into another input.
- In case of mal-function this device should be serviced by qualified service personnel only.

### ***ANY SUGGESTION?***

***They are well appreciated and eventually rewarded!  
Send your ideas or suggestions to***

***suggestions@apart-audio.com***

**CONCEPT1 is developed by**

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