PCR3000RMKII
Instruction manual

PCR3000RMKII Manual

Features

The Apart PCR3000RMKII is a professional multisource CD/USB/ SD card music player with integrated FM RDS and DAB+ tuner, equipped with multiple independent analog outputs, coaxial and optical digital output for the CD/USB/SD player and a RS232 port for use in automated systems.

The maximum analog output level can be preset at the back to match the output level of other audio sources. Additionally there is a combi output available. This output will play the music from the CD/USB/SD player by default. When there is no media playing from the CD/USB/SD player, the output will automatically switch to the tuner (FM or DAB+) output after a few seconds, provided that the tuner is not in standby mode.

The unit can be controlled by the front panel controls, infrared remote (included) or RS232 commands. A list with the available RS232 commands is included in this manual. If you wish to control the unit using a third party infrared remote control unit, use the learn function on your third party remote to transfer the commands from the included remote. Read the manual of your third party remote for more details.

The CD/USB/SD player has an additional digital volume control, which can be operated via the infrared remote or via serial control.

Front panel
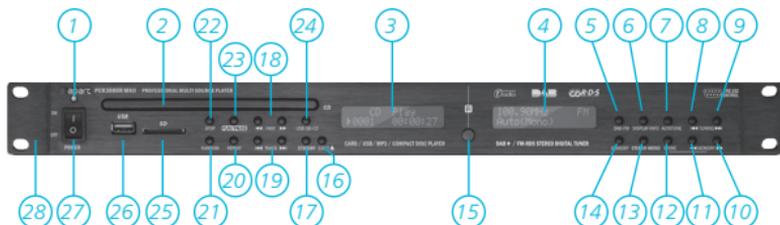
1. Power led: lights up blue when powered on, lights up red when in standby mode.

2. CD tray.

3. CD/USB/SD player display: displays track number and playback time and status.

4. Tuner display: displays tuner info such as station name, tuner frequency, RDS information…

5. DAB-FM button: push button to switch between DAB and FM tuner mode.

6. Display-info button: push to switch between different display options, such as RDS information, station name, program type, mono/stereo (auto) and time information. Default setting is to display mono/stereo.

7. Autotune button: push to perform a quick scan in DAB mode, hold for a full scan. in FM mode, pushing the autotune button will search for the next station on the FM band. Hold to search for a station backward.

8.   Tuning back button: tune one step back (FM mode). In DAB mode the tuner will tune to the previous station.

9.   Tuning forward button: tune one step up (FM mode). In DAB mode the tuner will tune to the next station.

10. Memory up button: tune to the next station stored in memory. There is a maximum of 10 memory locations available in FM mode and also 10 memory locations in DAB mode. If there is no station programmed on a certain memory location, the display will show "Preset xx free".

11. Memory down button: tune to the previous station stored in memory. There is a maximum of 10 memory locations available in FM mode and also 10 memory locations in DAB mode. If there is no station programmed on a certain memory location, the display will show "Preset xx free".

12. Store button: press to store a station into memory. First select an empty memory location or a location you wish to overwrite. Then tune to the desired station and press store to store the station on the previously selected memory location.

13. Stereo/mono button: push to switch between mono or stereo operation (FM mode only).

14. Standby button: push to switch the tuner to standby mode or to wake up from standby mode.

15. Infrared receiver eye.

16. Eject button: push to open or close the CD tray.

17. Standby button: push to switch to standby mode or to wake up from standby mode.

18. **Fast forward button, Fast backward:** push once to search forward or backward. Push again to resume normal play.

19. **Track down button:** push to go one track back, Track up: push to skip to the next track.

20. **Repeat button:** push to switch between the repeat modes: repeat one, repeat all, off

21. **Random button:** push to switch on random playback mode. Push again to switch this mode off. Default = random off.

22. **Stop button:** push to stop the playback.

23. **Play button:** push to start play or pause a playing song.

24. **USB-SD-CD button:** push this button to switch between the media drives, USB, SD or CD.

25. **SD card slot.**

26. **USB connector:** accepts memory sticks only, capacity up to 32 GB.

27. **Power button:** Push to power on or off. This button powers off the unit entirely in the off position. The power led will not light up when in the off position.

28. **Removable rack ears.**

Rear panel
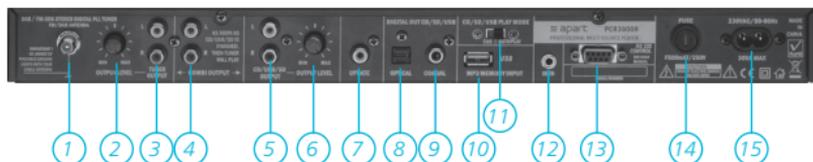
1. **Antenna connector:** connect the antenna supplied here. Do not connect this to a cable distribution network, unless you use an isolation transformer. Connecting the unit to a cable network may cause interference to the DAB reception. This depends on the signal present on the cable network. Check availability of DAB signals with the cable network supplier first!

2. **Tuner output level:** turn the output level control to match the tuner output to the output from other music sources.

3. **Tuner output:** adjustable line level output on RCA connectors.

4. **Combi output:** as soon as CD/USB/SD player has finished playing, the tuner output will be present on this combi output. Output levels from both tuner as well as CD/USB/SD player are adjustable.

5. **CD/USB/SD output:** adjustable line level output on RCA connectors.

6. **CD/USB/SD output level:** turn the output level control to match the CD/USB/SD output to the output from other music sources.

7. **Update:** unused connector.

8. **Optical output:** digital optical output on Toslink ® connector.

This connector carries the SPDIF digital output from the CD/USB/SD player in 16 bits/44.1 kHz PCM format.

9. Coaxial digital output: digital output on RCA connector. This connector carries the SPDIF digital output from the CD/USB/SD player in 16 bits/44.1 kHz PCM format.

10. Rear USB slot: this is a copy of the front USB connector, use the front OR the rear USB connector, not both simultaneously.

11. Operating mode switch: Autoplay: the unit will start playing back at power up. Cue: the unit will wait for a play command after power up, or when in stop or pause. This function allows a track to be selected without playing it back automatically.

12. IR jack: connect a suitable infrared eye here. Connecting an IR receiver here will automatically bypass the front IR eye.

13. RS232 port for external control on SUB D9 connector. For control purposes only. The radio or CD/USB/SD media information is not available on the serial port.

14. Fuse holder: contains a standard 20 x 5 mm fuse. Value 500mA/250V/slow blow. Replace only with a fuse of the same value. If the fuse breaks regularly, contact your dealer.

15. Mains cable connector.

Note: the output level can also be adjusted during playback via the infrared remote or serial control commands. This volume control is located before the master output level knob (4) on the rear of the unit. After waking up from standby or after power up, the volume level is automatically reset to the maximum as set by the rear volume knob.

*Please note: the unit may respond slowly when you change the input source. This depends on the memory capacity and reading speed of the memory stick/card and the number of files present on the media. When inserting a CD, the unit will first read the table of content to determine the type of media present on the disc. This may take a few seconds. During this time, the unit will not respond to any command.

The unit will automatically recognize the serial commands for CD/USB/SD and tuner part. When the tuner or the CD/USB/SD is in standby mode, sending a command will cause no reply from the unit or action taken by the unit. This is valid for all commands except for the CD ON and DAB ON commands. Note: the output level can also be adjusted during playback via the infrared remote or serial control commands. This volume control is located before the master output level knob (4) on the rear of the unit. After waking up from standby or after power up, the volume level is automatically reset to the maximum as set by the rear volume knob.

Important notice: always allow the unit to acclimatize during at least one hour. E.g when the unit has been transported in cold weather conditions, the electronics and optical devices inside the unit might condensate, causing malfunction or even permanent damage to the unit!

Please note that the unit may respond slowly when you change the input source. This depends on the size and number of files present.

RS232 communication

Communication with PC1000RMKII via RS232 is done with simple ASCII commands. The port settings are: **38400 baudrate, 8 databits, no parity, handshake off**. These parameters cannot be changed. The physical connection is made with a straight through wired 9 pin serial cable (NO null modem cable!) Maximum wire length depends on cable quality and influence caused by external interference.

Pin 2: TX data : data transmission output.
Pin 3: RX data : data transmission input.
Pin 5: GND : ground
Other pins are not used.

Serial commands used in PC1000RMKII have been simplified and consist basically of a command such as PLAY, STOP, ... commands are not case sensitive.

Some commands require an attribute, such as TRACK #, where # stands for a numeric value, in this case the track number. The unit needs no carriage return <CR> at the end of the instruction.

From here we assume that you are familiar with RS232 communication protocols and hardware. If not, please read the user manual of your control device first. In case you are experiencing a problem with serial communication, start at the basics, connect a computer with a working serial port, use the right serial cable, use a simple terminal program, make communication settings and start from there.

Please note that most commands sent from the infrared remote control will also be shown on the serial port. This is the easiest way

to find out whether your serial communication settings are correct.

Unknown characters in your terminal communication program usually indicate that the baudrate is incorrect.

Below is a table with the list of commands recognized by PCR3000RMKII and some examples of the replies sent by the PCR3000RMKII.

RS232 COMMANDS

COMMAND (DESCRIPTION)	REPLY
PLAY	PCR3000R--> Play
PAUSE	PCR3000R--> Pause
STOP	PCR3000R--> Stop
EJECT	PCR3000R--> Eject Comman
SKIP+ (go to next track)	PCR3000R--> Skip Next
SKIP- (go to previous track)	PCR3000R--> Skip Back
FAST+ (fast forward search, send again to resume normal play)	PCR3000R--> Fast Play Forward
FAST- (fast backword search, send again to resume normal play)	PCR3000R--> Fast Play Backward
TRACK # (# stands for a numerical value from 1 to 4095; note the space between TRACK and #)	PCR3000R--> Track : 25
CD ON	PCR3000R--> CD On
CD OFF	PCR3000R--> CD Off
INPUT (change between inputs CD-USB-SD, valid only when a medium is present)	PCR3000R--> Change Playing Source
CD MUTE ON (mute the output)	PCR3000R--> CD Mute On
CD MUTE OFF (unmute the output)	PCR3000R--> CD Mute Off
VOL+	PCR3000R--> Vol Up
VOL-	PCR3000R--> Vol Down
RANDOM ON	PCR3000R--> Random Mode On

RANDOM OFF	PCR3000R--> Random Mode Off
REPEAT 1	PCR3000R--> Repeat 1
REPEAT ALL	PCR3000R--> Repeat All
REPEAT OFF	PCR3000R--> Repeat Off
STATUS CD (displays the status of the PCR3000RMKII)	PCR3000R--> Device: CD Player PCR3000R--> MP3: 030 PCR3000R--> Status: Play PCR3000R--> Time: 03:18
DAB ON (switches the tuner ON)	PCR3000R--> DAB on
DAB OFF (switches the tuner to STANDBY)	PCR3000R--> DAB off
BAND (Switch bewteen FM and DAB+)	PCR3000R--> Band command
TUNE+ (tune up)	PCR3000R--> Tuning up command
TUNE- (tune down)	PCR3000R--> Tuning down command
PRESET 1 (recall preset1, max preset# =10)	PCR3000R--> Preset: 1
SAVE 1 (save to preset1, max preset# =10)	PCR3000R--> Save: 1
AUTO+ (search next station up, FM. DAB+ perform quick scan)	PC3000R--> Up search for FM/ Quick scan for DAB
AUTO- (search previous station down, FM. DAB+ perform full scan)	PC3000R--> Down search for FM/ Full scan for DAB
ENTER (FM: switch between mono and stereo, DAB+ no function)	PCR3000R--> Enter Command

DAB MUTE ON (mute tuner, FM or DAB+)	PCR3000R--> DAB Mute On
DAB MUTE OFF (un-mute, FM or DAB+)	PCR3000R--> DAB Mute Off
STATUS DAB (displays tuner status, FM or DAB+)	PCR3000R--> 97.40 MHz FM Auto (Stereo)
INFO (switch between different display options, such as RDS information, station name, program type, mono/stereo (auto) and time information.	PCR3000R--> Info Command

Please note that the commands are not case sensitive.

Important notice: *always allow the unit to acclimatize during at least one hour. E.g when the unit has been transported in cold weather conditions, the electronics and optical devices inside the unit might condensate, causing malfunction or even permanent damage to the unit!*

Please note that the unit may respond slowly when you change the input source. This depends on the size and number of files present on the media.

Specifications

CD PLAYER	
Compatible media	Audio CD, CDR, CDRW, DVD, DVDR, DVDRW
Audio format	Audio CD 16 bit PCM, MP3 32-320 kbps and variable bitrate, WMA. ID3 tags are not supported. Maximum number of files on the media = 4095. File name recognition is limited to 8 characters.
USB - SD	
Compatible media	Flash memory sticks and cards, 32 Mb up to 32 GB. File system recognized is FAT32. Some memory sticks and cards may not work because they don't allow direct memory access! Maximum number of files on the media = 4095. File name recognition is limited to 8 characters.
Audio format	MP3 32-320 kbps and variable bitrate, WMA ID3 tags are not supported.
CD-USB-SD	
Line level output (balanced & unbalanced)	1.9V adjustable
Output impedance	less than 1KΩ
Digital outputs (Toslink and Coax)	SPDIF format, 16BIT, 44.1KHz

S/N ratio	>90dB
THD	<0.05%
Frequency range	20Hz - 20KHz
FM-RDS/DAB/DAB+TUNER	Technical Specifications
Frequency range FM radio	87.5 MHz to 108 MHz
Frequency range DAB radio band 3	174 MHz to 240 MHz
Frequency response FM radio	20 Hz - 15 KHz
Frequency response DAB+	20 Hz - 20 KHz
Sensitivity	-97 dBm typical
Aerial input impedance	50 Ω
THD	<0.05%, 1kHz (DAB)
	<0.15%, 1kHz 50KHz deviation(FM mono)
	<0.6%, 1kHz 50KHz deviation (FM stereo)
GENERAL	
Power supply	230 VAC 50-60Hz max 30VA
Fuse rating	500mAT / 250V
Dimensions	430 (482) x 305 (315) x 44 mm
Net weight	4.5 kg
Shipping weight	5.5 kg
Accessories supplied	Mains power cable, IR remote control unit
RS232 port	Standard RS232 port on DB9 connector.

RS232 port setting (fixed)	38400 baudrate, 8 databits, no parity, handshake off
Infrared extension port	Mini jack connector at the rear, disables the front infrared receiver
Remote control battery type	AAA type LR03
Operating temperature	10 - 40 °C
Relative humidity	10 to 80 % non condensing

Important safety instructions

Please check the carton for any kind of damage on reception of the goods. In case of a damaged carton, please contact your dealer before opening the carton.

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.

Always operate the unit with the AC ground wire connected to the electrical system ground.

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 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.

In case of mal-function this device should be serviced by qualified service personnel only.

Notes

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