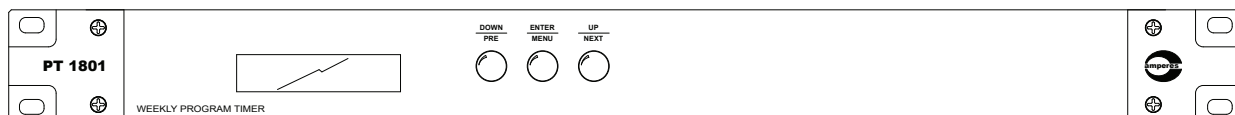




INSTRUCTION MANUAL

PT1801 MKII

Weekly Programmable Timer with Web Interface



Thank you for choosing another quality product from Amperes Electronics.

Amperes PT1801 MK II is a totally revamped product, working around the popular predecessor PT1801 with very much added features and capabilities to perform scheduler tasks and audio playback.

It is now based on web technology, which provide a more convenient way for user to manage the unit. Accessing the unit shall be via web browser and hosts of activities can be carried out such as schedule changes, uploading audio files and so on.

One major changes is the schedule - audio playback, which was not available earlier. With this feature, external media player (or message player) shall not be required, thus a great savings in installation costs. PT1801 MK II is now compatible with Amperes iPX Ethernet Paging System, which would allow the unit to broadcast message directly to the IP Client.

Installation and configuration of this device is not difficult, but we suggest that you go through the manual in order to reap the best it can offer.

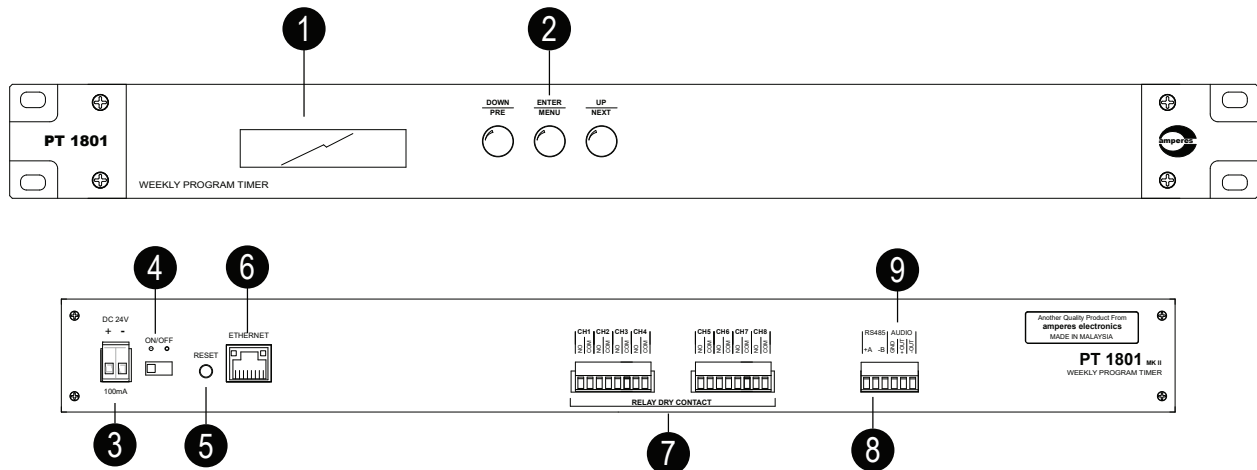


View catalogue and for latest updates



Ver 1 / 2023

Parts Identifications



1. LCD

Displays current activity / event of the unit

2. MENU BUTTONS

They are used to scroll the menus / information at LCD. All settings or configurations shall be done through web browser

3. DC POWER INPUT

Connect to 24V DC with 0.5A rating for powering the unit. Use only regulated power source. (power consumption 100 mA)

4. UNIT ON / OFF SLIDE SWITCH

On / Off power switch to the equipment.

5. RESET BUTTON

Press momentarily to reset the unit. All previously saved configurations shall not be affected.

6. LAN PORT

Connect to network switch and thereafter accessible by remote PC for settings and retrieval of files / logs.

7. DRY CONTACT PORTS

Normally open (NO) dry contacts are available for each port upon activation. It can be used to trigger other external devices. Max load is 3A.

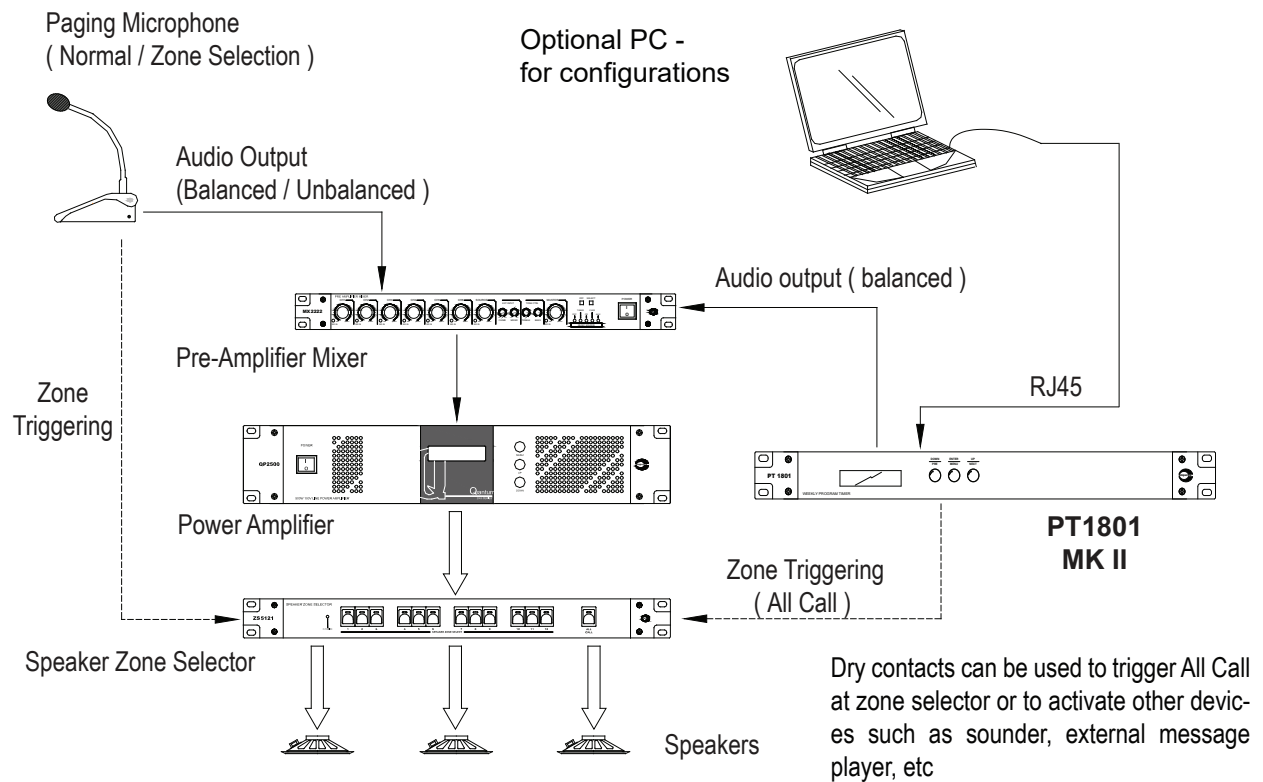
8. RS485 DATA PORT

It is used to communicate with other Amperes products with Amperes PA RS485 protocols., such as zone triggering, all call activation, etc.

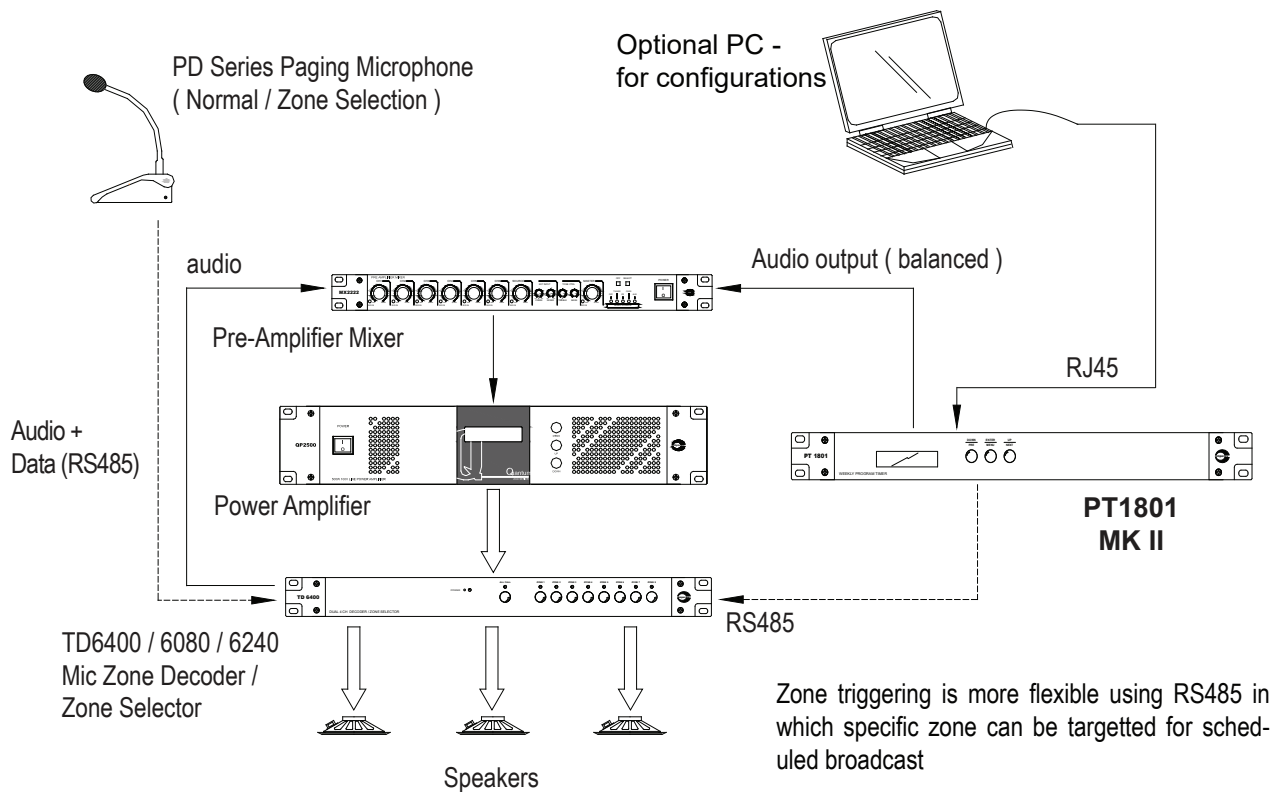
9. BALANCED AUDIO OUTPUT

Scheduled audio file can be played and connected to amplifier / mixer with balanced line output. The volume can be adjusted via web browser.

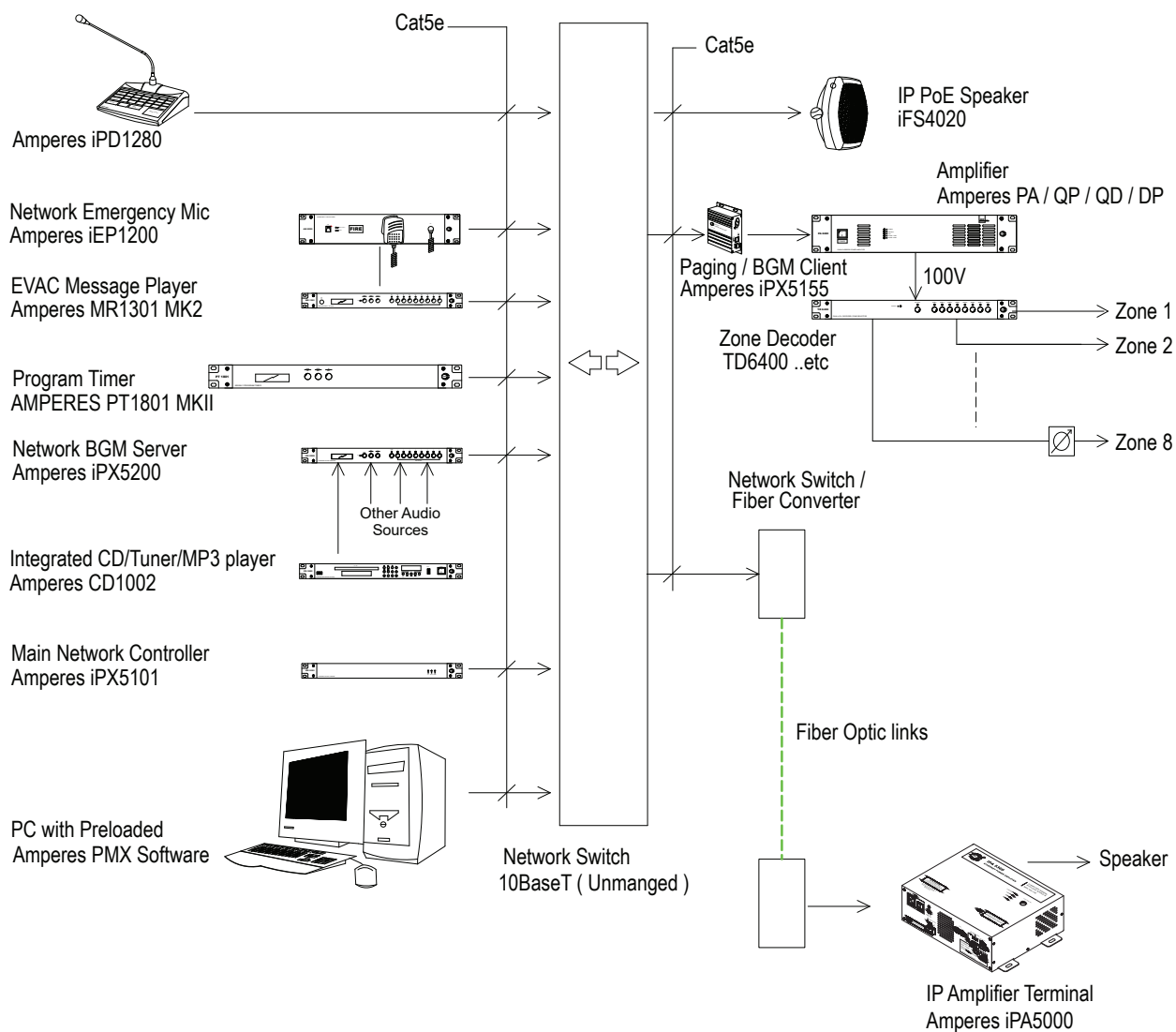
General Schematic (Analogue)



General Schematic (Digital)



General Schematic (iPX System)

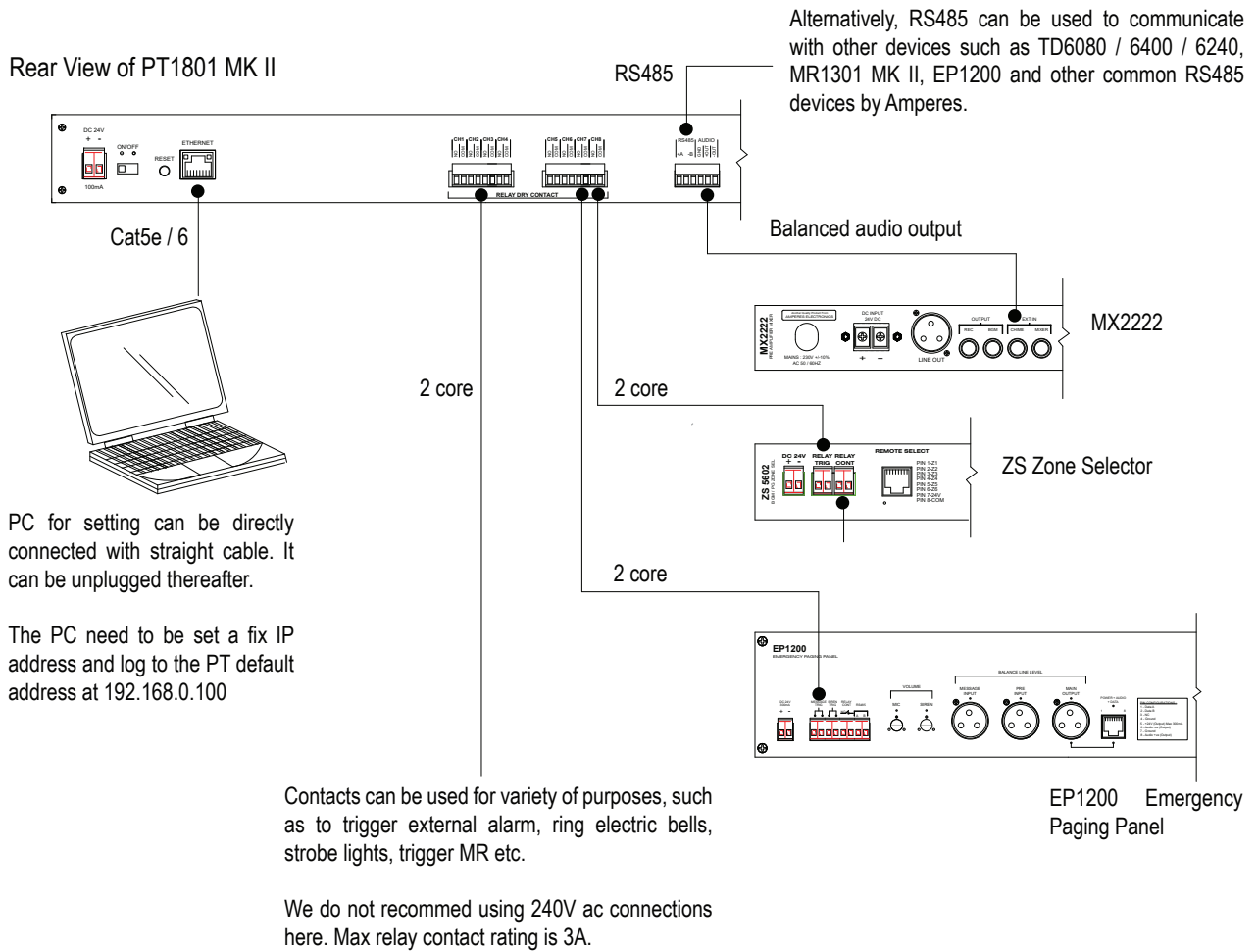


Note :

In full IP setup, PT1801 MK II can trigger the assigned zones or IP clients directly according to preprogrammed schedule.

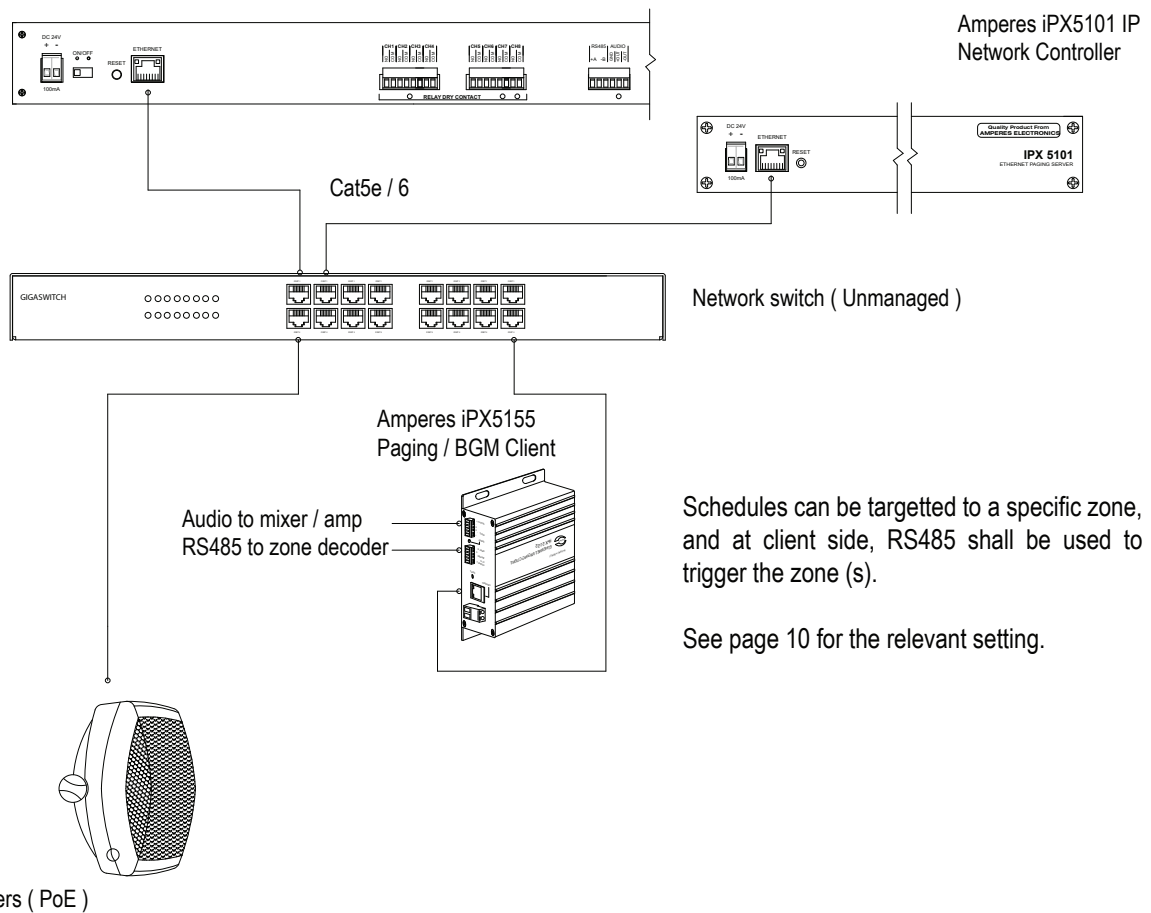
Connection Diagram (Analogue)

Rear View of PT1801 MK II



Connection Diagram (iPX System)

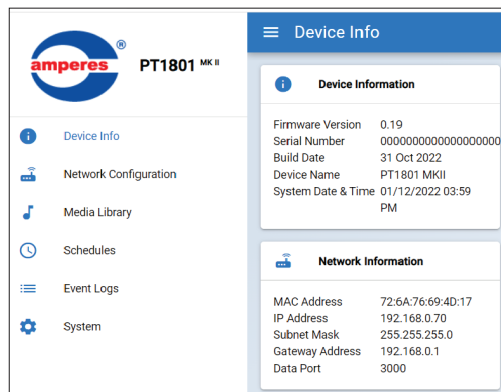
Rear View of PT1801 MK II



Using PT1801 MKII must be accompanied by iPX5101 IP Network Controller. In IP PA environment, each PT1801 shall be considered as another paging device. Therefore iPX Paging Server box must be enabled during setup. (See Page 11).

Device Setup via Browser

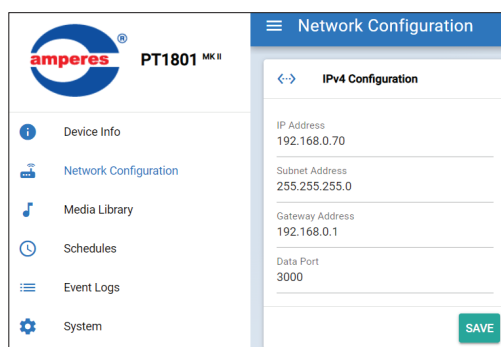
Some basic settings are required for the proper operation of the device.



DEVICE INFO

Shows the device and network information of PT1801 MK II.

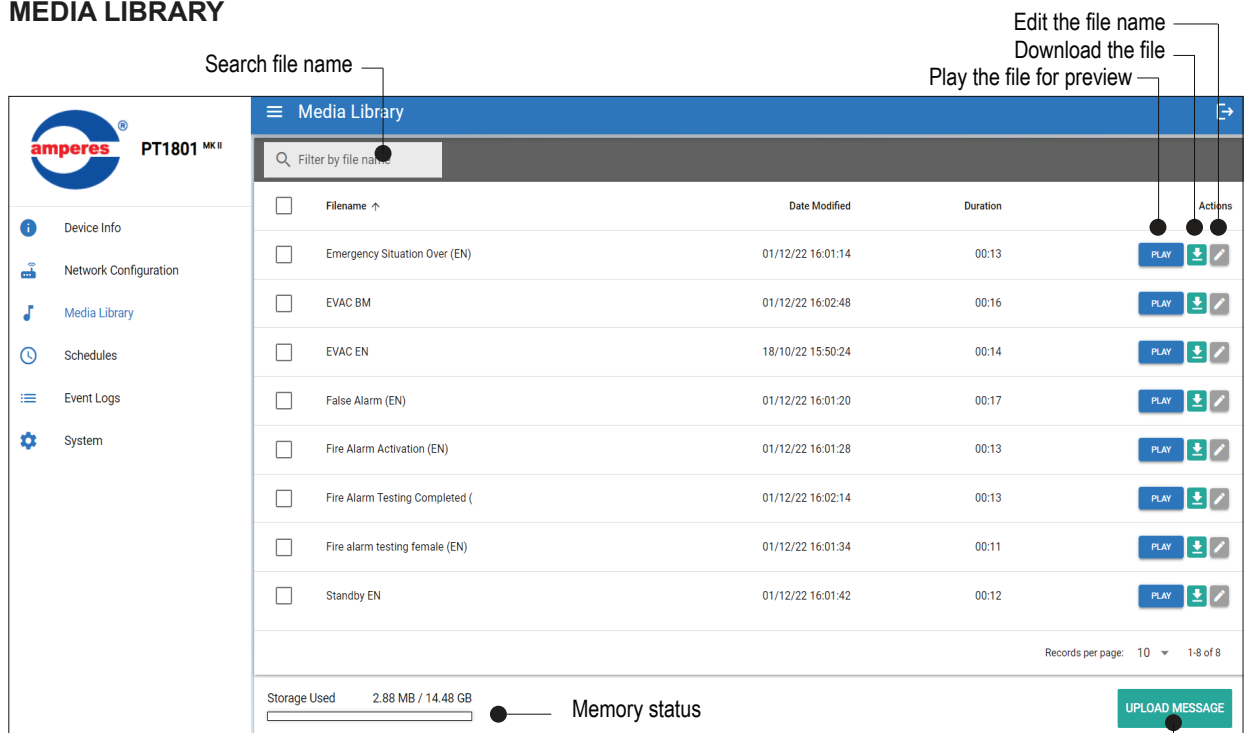
The default IP address is 192.168.0.100. Change this address to avoid conflict with other devices in the system.



NETWORK CONFIGURATION

This section allows you to change the device's IP address, Sub Net and Gateway addresses. Leave the Data Port unchanged.

MEDIA LIBRARY



This page stores all the audio files in the device's memory card. Files can be played / accessed directly for preview, upload or download the media and edit the name. With its large memory bank, thousands of audio files can be stored in the device.

Device Setup via Browser (Schedules)

SCHEDULES

Local Schedule : for conventional system setup

IPX Schedule : for creating schedules in Amperes iPX System

User can play the schedule if it is an audio media, view the schedule task, edit or delete the schedule.

PT1801 MK II works for conventional and Amperes iPX Systems, thus two types of scheduling can be programmed. In a hybrid system, both type of schedules can be set.

Creating Local Schedules : General

CREATE LOCAL SCHEDULE

Create local schedules allow PT1801 MKII to activate TD series of zone selectors / MR1301 via RS485 connections. User can also play audio announcement via the device's audio output or to control external devices at preset time interval using any of the dry contacts available.

The page with 2 tabs : General and Tasks shall appear upon clicking the "Create Local Schedules" button.

"General" tab allows user to enter unique schedule name for easier identifications, set time on weekly basis or on date.

Can set the task to occur at specific time or at intervals.

Enter a unique name to each schedule

Choose schedule to trigger at specific date or on weekly basis

Enter specific time for a schedule or to activate a task at intervals during the date / day

Dry contact may be activated at previous schedule, click this to release the contact before performing the task

See also Schedule Calendar and Clock widget in Page 9

Device Setup via Browser (Schedules)

Schedule Title

Schedule Type
☒ ON DATE ☐ WEEKLY

Date
09-05-2023

Occurrence
☒ ON TIME ☐ INTERVAL

Time
11:28 AM

General Task Configuration
☒ Reset Dry Contacts

Days of Week
☐ MON ☐ TUE ☐ WED ☐ THU ☐ FRI ☐ SAT ☐ SUN

Click this to view calendar for easier setting of schedule with specific date.

Time can also be set using this clock widget

Repetitive schedules within a week is set at this button. Multiple day of the week can be selected.

Instead of specific time, an event can be created to trigger at intervals in hours or minutes during the specific date or day of the week.

Creating Local Schedules : Tasks

At each schedule time set, task has to be added, directing the device to perform one or sequential of tasks once triggered.

Add Local Schedule

GENERAL **+ ADD NEW TASK** **CLEAR ALL TASKS**

Task ID	Task Type	Configuration	Action
1	Task Type: Dry Contact	Relay 1, Relay 2, Relay 3, Relay 4, Relay 5, Relay 6, Relay 7, Relay 8	×
2	Task Type: Delay	5 seconds	×
3	Task Type: Zone Selector	Action: Create Call, Priority: 1, Zones: 1,2,3,4	×
4	Task Type: Delay	10 seconds	×
5	Task Type: Media Playback	Media: wind-chimes-bells-115747, Repeat: 1	×
6	Task Type: Delay	10 seconds	×
7	Task Type: Message Recorder	MR Address: 1, Message ID: 1, Repeat: 0, Timeout / Msg Duration: 10 seconds	×

CANCEL **SAVE**

5 Types of tasks available :

- Dry contact
- Delay between task
- Play audio file
- Trigger TD / Zone
- Play MR1301 MK II

PT shall activate message at external MR via RS485. It shall proceed to the next task when receive end of message from MR.

Define targeted MR1301 MK II and its specific file, repeat playback and play duration

To play an audio file stored in Media Library with number of repeats.

For Local Schedule, audio shall be available from the audio port at the back of the device.

Trigger zone selector via RS485 with specific zone (address), set priority level of this device or disable it.

Note on Relay activation : There are 3 states of setting for relay activation, ie.

- ☒ Relay 2 Left : Set the relay Off
- ☐ Relay 3 Middle : Allow the last state of the previous task. However this is subjected to setting at " General Task Config "
- ☒ Relay 1 Right : Turn On.

Device Setup via Browser (iPX Schedules)

PT1801 MK II can be used in conventional as well as Amperes iPX System simultaneously. Setting up the schedules for iPX is similar to previous steps.

The 'Add IPX Schedule' form has a 'GENERAL' tab selected. It includes a 'Schedule Title' field, 'Schedule Type' (ON DATE, WEEKLY), 'Date' (09-05-2023), 'Occurrence' (ON TIME, INTERVAL), and 'Time' (10:34 AM). A 'General Task Configuration' section has a checked 'Reset Dry Contacts' option.

Creating iPX Schedules : General

Adding iPX schedules is similar to creating local schedules - Please refer to page 8 and 9.

Creating iPX Schedules : Tasks

CREATE IPX SCHEDULE

Tasks associated with iPX are mainly to send audio files and RS485 commands to target iPX Clients (iPX5455 / 5155) for audio streaming and zone control to TD and ZS. PT1801 MK II shall be regarded as one of the paging source, thus connectivity to iPX5101 is required.

Click to add new task to the schedule

The 'Add IPX Schedule' form has a 'TASKS' tab selected. It shows a table of tasks with columns for Task Type, Task Name, and a 'Repeat' field. Task 1 is 'Delay' (10 seconds). Task 2 is 'Dry Contact' (Relay 1-8). Task 3 is 'Media Playback' (Media: wind-chimes-bells-115747, Repeat: 1). A 'CANCEL' button is at the bottom left and a 'SAVE' button is at the bottom right.

Set delay between tasks

To play media and repetitive number. The files must be located at the media folder.

Dry contacts activation according to the task to trigger external devices

Device Setup via Browser (System)

The screenshot displays the web interface for the PT1801 MK II device. On the left is a sidebar menu with options: Device Info, Network Configuration, Media Library, Schedules, Event Logs, and System (selected). The main content area is titled 'System' and contains several configuration sections:

- Unit Configuration:** Fields for Device Name (Gnd Flr Timer), Device Address (1), and LCD Backlight Timeout (10). A 'SAVE' button is at the bottom right.
- iPX Paging Server:** Toggles for 'Paging Enabled' and 'Auto Connect', both of which are checked. A 'SAVE' button is at the bottom right.
- Audio Configuration:** Includes a 'Volume' slider set to 80% and a '5 Band Equalizer' with five frequency sliders (100kHz, 250kHz, 1kHz, 4kHz, 10kHz) all set to 0dB. A 'SAVE' button is at the bottom right.
- System Date & Time:** A checkbox 'Sync with NTP Server' is checked. Fields show 'NTP Server IP Address' as 128.199.77.92, 'Timezone' as (GMT +8:00) Beijing, Perth, Singapore, Hong Kong, Malaysia, and 'Date & Time' as 02/07/2021 13:00:24. A 'SAVE' button is at the bottom right.
- Authentication:** Fields for 'Username' and 'Password'. A 'SAVE' button is at the bottom right.
- Update Firmware:** A button labeled 'SELECT FIRMWARE'.
- Backup & Restore:** Buttons for 'BACKUP CONFIGURATION', 'RESTORE CONFIGURATION', and 'RESTORE DEFAULTS'.

The System menu allows user to set the device's system operation and identification.

Unit Configuration

Set the device unique name for proper identifications if several units of PT1801 MK II are installed or identification by other device such as AR1400.

Set the device address for reason above and normally applies in UART setup, for communication with other Amperes products using RS485 protocols.

LCD Backlight (in seconds) determines the duration of LED lits when the device is inactive.

iPX Paging Server

PT1801 MK II shall behave like one paging mic with low priority when used in iPX System. Enable this when use in Amperes IP PA System.

Audio Configuration

Overall output volume and 5 band equalisers are available for both analogue and iPX streaming.

System Date & Time

System time can be set manually, push to sync with connected PC or to sync with NTP Server. The IP address is 128.199.77.92. For auto world time sync, internet connection must be available.

Authentication

Setup username and password to avoid unnecessary access by unauthorised person. Defaults are Username : admin, Password : admin.

Update Firmware

Firmware update can be done via this selection or through bootloading method. Please refer to " Firmware Upgrade " section of this manual.

Backup & Restore

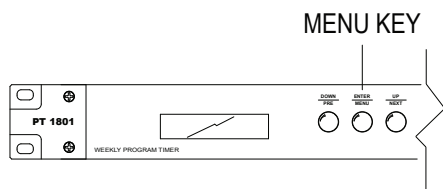
Time settings, schedules, network and system config can be saved and restored if necessary. It is saved under PT1801_MkII_DD_MMM-YY.json file. Media files, event logs and Authentication are excluded.

Restore defaults shall revert the configurations to factory defaults, all configurations shall be deleted.

Front Menu Buttons

Main Menu

There are limited functions available at front buttons, mainly for direct controls of the device. To setup schedules, LAN settings or upload files, it is much convenient to use a PC or Laptop and perform the required settings via the web browser.



Press MENU button to enter menu mode and use DOWN or UP buttons to scroll between the main menus.

Press MENU button to enter the desired sub menu.



Default display showing date and time

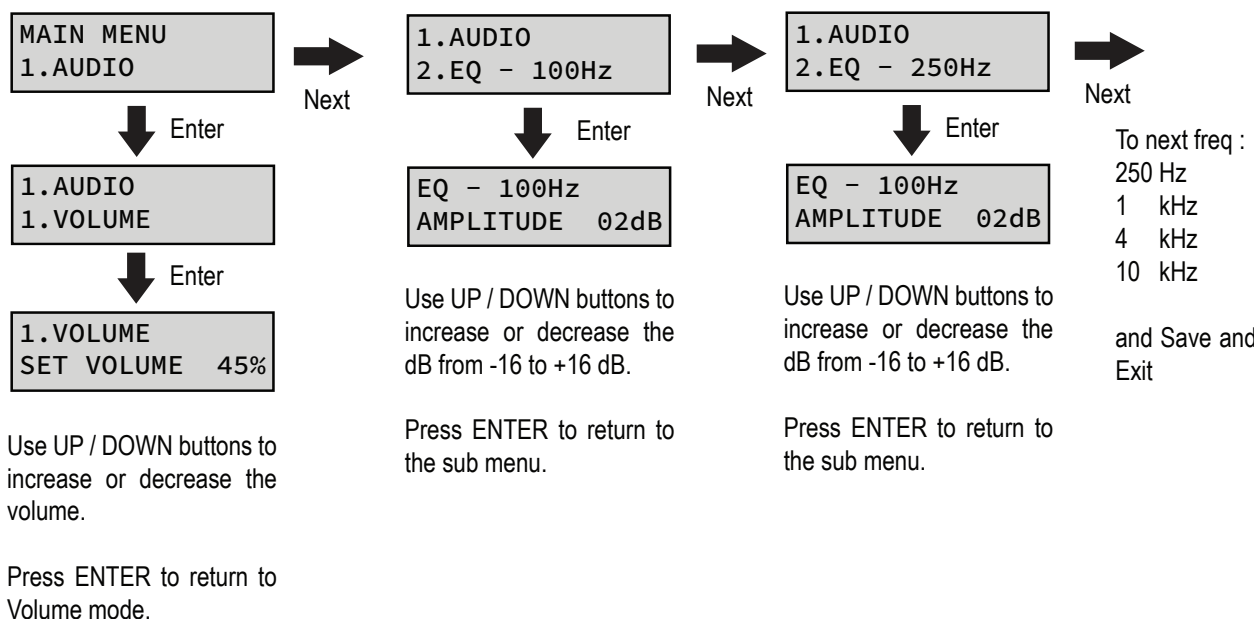
Sub Menu for Audio :
Volume and EQ level

Sub menu to play or delete stored media.

Sub menu to show system version, unit address and restore default

Sub menu : 1. AUDIO

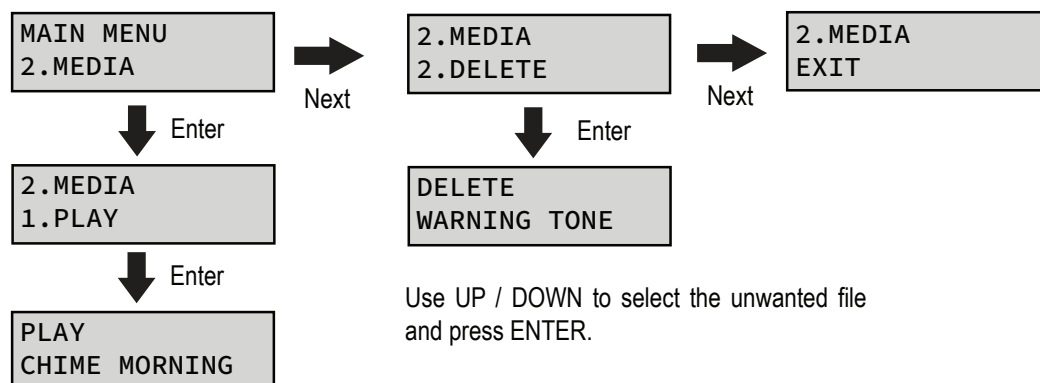
This is to set the output volume in percentage and EQ values in dB.



Front Menu Buttons (Con't)

Sub menu : 2. MEDIA

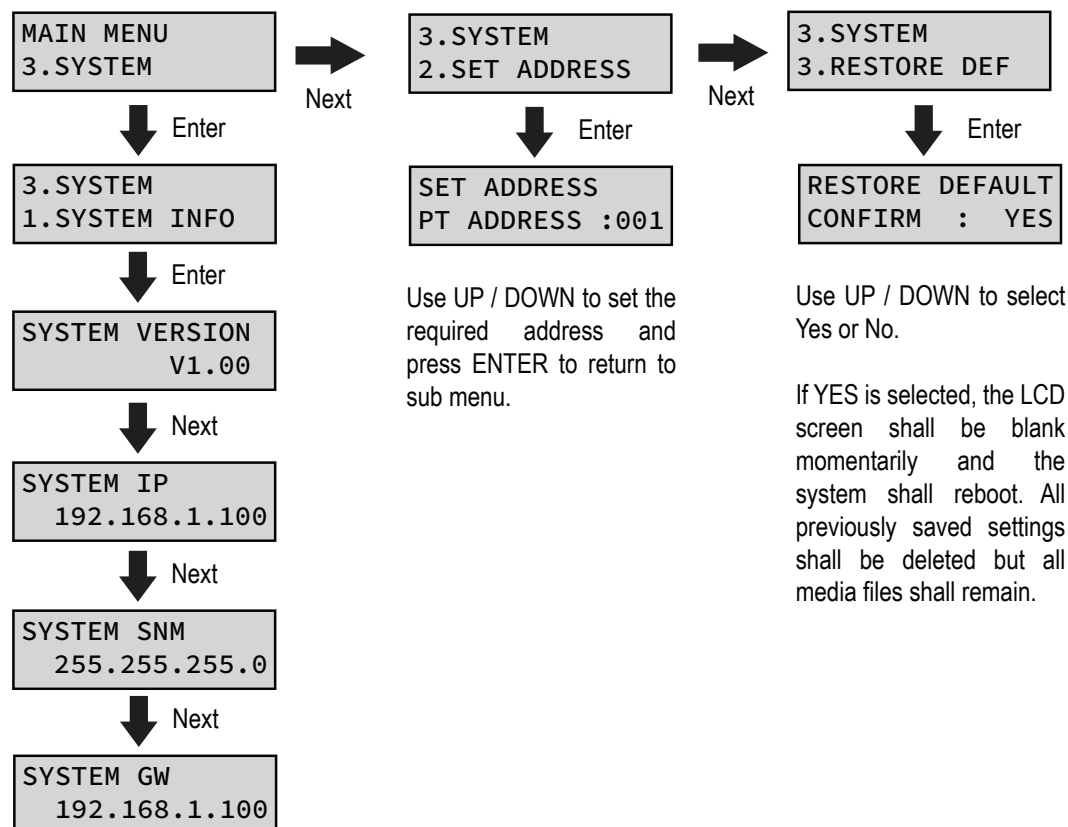
This sub menu is to force play media stored or delete it.



Use UP / DOWN buttons to select the required file.
Press ENTER to play the file.

Sub menu : 3. SYSTEM

This sub menu is to force play media stored or delete it.



Press ENTER to return to
Sub Menu

Firmware Upgrade

Update Firmware

SELECT FIRMWARE

Update Firmware

File Name	PT1801E.acfr
Firmware Version	1.16
Build Date	12-10-2023

CANCEL

UPLOAD

Update Firmware in Normal operation mode.

Click on "Select Firmware" tab to update firmware which is available from time to time. Check the version number of the existing unit against the latest available version in the website : www.ampereselectronics.com/downloads-amperes

1. Open browser with the unit's IP address
2. Under "System" page, look for "Update Firmware" section and click "Select Firmware"
3. Select the binary file with ".acfr" extension and click "Upload"
4. Once update is completed, the browser shall enter the login page.

Update firmware in Bootloader Mode

If it is required to update using bootloader mode, in situation such as device "hanged" or operating in abnormal mode :

1. Press & hold the reset button until the LCD shows "AMPERES BOOTLOADER" and this will set the IP address to default address 192.168.0.100.
2. Open a browser and enter the IP address 192.168.0.100. A web page as shown below shall appear.
3. Select "Upload Firmware", choose a binary file with ".acfr" extension and click "UPLOAD"
4. Once the uploading is completed, the browser shall enter the login page.

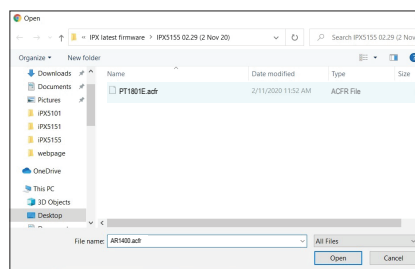
Bootloader Interface
Amperes Electronics

Upload Firmware

Restore Factory

Exit Bootloader

Click the Upload Firmware button to find the updated firmware file.



Find the updated firmware file.

File: PT1801E

Size: 394 KB

Version: 02.29

Cancel

Upload

Restore Factory

Exit Bootloader

Ready to upload, click Upload button to upload the firmware.

After finish updating firmware, the browser automatically restart.

Firmware update in progress

Please do not power off the device

This page will be reloaded once the update process is complete

The device IP Address is 192.168.0.100

File: PT1801E

Size: 394 KB

Uploading

Updating progress

Technical Specifications

Input voltage	24 V DC ; 0.5 A
Power consumption	4.5 W max (190 mA)
	1.2 W Standby (50 mA)
Output channels	8
Output contact rating	3A
Contact connectors	Phoenix
Output triggering modes	On, Off, Pulse (3 secs)
Output audio	Line balanced (+4 dBu)
Audio connectors	Mini Phoenix
Output impedance	1 k Ohm
Preset capacity	1000
Max tasks per schedule	30
Max ZS tasks per schedule	10
Internal memory bank	16 - 32 G B - Internal SD Card
Media files	MP3, WAV
Indicators	LCD
Clock synchronisation	World Clock, PC
Clock back up	CR1220 button battery
RTC accuracy	+/- 2 ppm
Communications	RS485 ; 19.2 kbps
	LAN 10/100 Base T
User interface	Web browser : Google, Firefox
Dimensions	482 x 44 x 180 mm
Weight	2.0 kg

Note:

The above specifications are correct at time of printing but subjected to changes without prior notice due to product improvements.

Warranty Conditions

Only Amperes Electronics Service Centres are allowed to make warranty repairs : a list of Amperes Electronics authorized service centres may be asked by the purchaser or send directly to Amperes Electronics Sdn Bhd at 70 Jalan Industri PBP3, Tmn Perindustrian Pusat Bandar Puchong, 47100, Puchong, Selangor. This warranty is not valid if repairs are performed by unauthorized personnel or service centres.

This warranty covers only repairs and replacement of defective parts. Cost and risk of transportation as well as removal and installation of the product from the main system are for the account of the purchaser. This warranty shall not extend to the replacement of the unit.

This warranty does not cover damages caused by misuse, negligence in application as well as using the product with power supply voltage other than shown on the product, or any other power supply source / adapter not recommended by the manufacturer.

This warranty does not cover damages caused by fire, earthquakes, floods, lightning and every cause not directly related to the unit.

This warranty does not include any indemnity in favor of the purchaser or the dealer for the period out of use of the unit, moreover the warranty does not cover any damages which may cause to the people and things during the use of the product.

This warranty certificate is valid only for the described product, and is not valid if modifications are made on this certificate or identification labels applied to the unit or any other modifications to the physical unit other than its intended usage.

This warranty covers all the material and manufacturing defects and is valid for a period of 36 months from the date of purchase or for a specified period in countries where this is stated by a national law. In this case, the extension is valid only in the country where the product is purchased.

Amperes Electronics Sdn Bhd is not obliged to modify previously manufactured products under warranty if the design changes or improvements are made.

The purchaser is deemed to agree to the above warranty conditions once the product packaging is unpacked., Otherwise the product shall be returned to the seller in proper original condition.

Disclaimer

Information contained in this manual is subjected to change without prior notice and does not represent a commitment on the part of the vendor. Amperes Electronics Sdn Bhd shall not be liable for any loss or damages whatsoever arising from the use of information or any error contained in this manual.

It is recommended that all services and repairs of this product to be carried out by Amperes Electronics or its authorized service agents.

Amperes products must only be used for the purpose they were intended by the manufacturer and in conjunction with this operation manual.

Amperes Electronics Sdn Bhd cannot accept any liability whatsoever for any loss or damages caused by service, maintenance or repair by unauthorized personnel, or by use other than that intended by the manufacturer.



AMPERES ELECTRONICS SDN BHD
MADE IN MALAYSIA
Published : MAY 2023