

PDR-01

HANDHELD DTMF READER



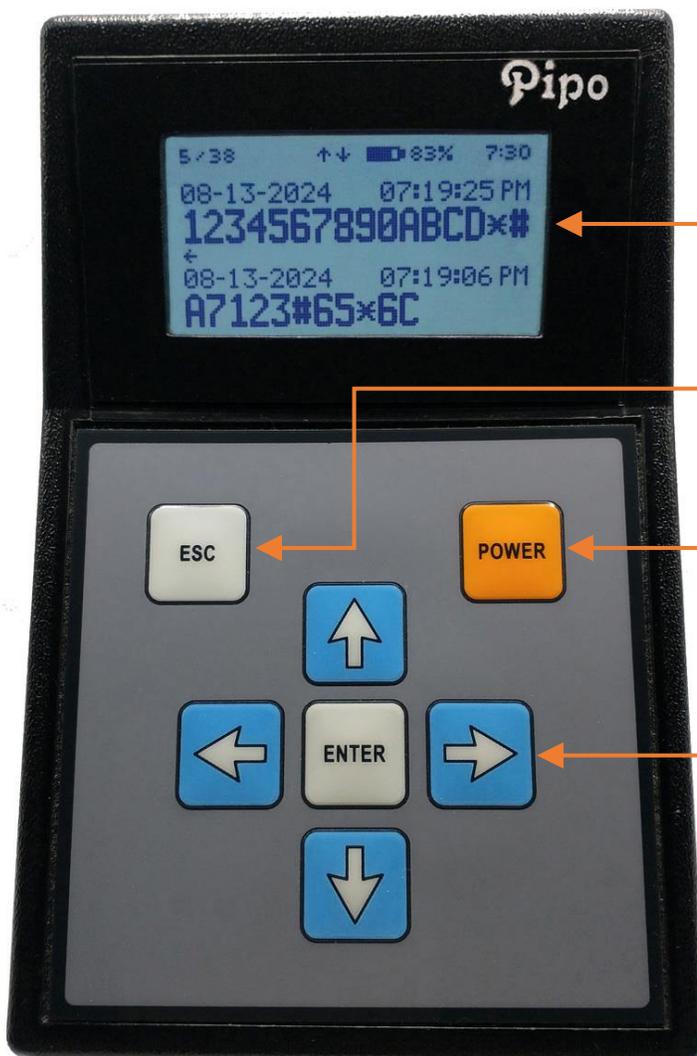
Operating Manual

HANDHELD DTMF READER

The **PIPO Communications Handheld DTMF Reader** is a low-power DTMF decoder with a graphical display that allows the decoding and visualization of DTMF strings generated either manually or automatically.

The PDR-01 detects DTMF tones from a phone line or other sources and displays them on an LCD screen in two lines of 16 digits, along with the date and time of each reception. Each line can hold up to 48 digits, which are shown by scrolling the display left and right. The PDR-01 stores the last 1,024 received DTMF strings in non-volatile memory, meaning the data remains stored even when the device is turned off. All received strings in the memory can be accessed by scrolling the display up and down using the navigation keys.

DTMF READER CONTROLS



LCD DISPLAY: shows Current Time, Battery Power Level, Number of Memory Registers, Two DTMF Strings with its Timestamps, Menu Items and more.

ESC KEY: Press to Go Back or Cancel Operations.

POWER: Press Once to Power ON. Press and Hold 2 Seconds to Power OFF.

NAVIGATION & ENTER KEYS: Use Arrows Keys to Navigate: Up, Down, Right and Left. The Enter Key is Used to Finalize and Accept Commands.

FEATURES

- 128 x 65-pixel Graphic Display.
- Battery level and charging indicator on display.
- Internal rechargeable LiFePO4 AA Battery in a socket for easy replacement.
- Battery charging via USB-C connector.
- Internal Real-Time Clock circuit for Date and Time stamping.
- Telephone Connector and 3.5mm Jack both for Tone Input.
- Received DTMF displayed in 2 Lines of 16 digits along with Date and Time of each reception. Each line can hold up to 48 Digits, displayed in 16-digit chunks, with the display scrolling Left and Right.
- Non-Volatile Memory for the last 1024 entries of up to 48 digits, including Date and Time.
- Time Format: AM/PM or 24-Hour.
- Date Format: Month-Day-Year or Day-Month-Year.
- Decoder Gain Adjustable in: -12, -6, 0, +6, and +12 dB.
- DTMF Speed Adjustable in LOW, MID and HI (5, 10, and 20 Digits/Second).
- DTMF reception Window Time adjustable from 0.1 to 5.0 seconds.
- Decodes manually or automatically generated DTMF from 0.2 to 20 Digits/Sec.
- Display Backlight with adjustable time for battery saving.
- Adjustable display contrast.
- Optional Auto Shutdown after 30 minutes of inactivity.
- Automatic Key Repeat when a key is Held Down.

SPECIFICATIONS

- **Signaling Format:** Standard DTMF (Decodes all 16 DTMF tones)
- **Sequence Length:** Up to 48 Digits
- **Non-Volatile Memory:** Stores the last 1024 DTMF input sequences with Date and Time stamps
- **Input Impedance:** Greater than 150K Ohms, balanced.
- **Valid Input Signal Levels:** -34 to -4.0 dBm. (Each tone in the composite signal) and Decoder Gain adjusted to 0 dB.
- **Decoder Gain Adjustment:** -12, -6, 0, +6, +12 dB.
- **Decoding Bandwidth:** $\pm 2.3\%$ of nominal DTMF frequency.
- **Noise Tolerance:** -12 dB (Referenced to the minimum valid acceptance level).
- **Twist Acceptance:** -8 to +4 dB.
- **Typical Minimum Tone-ON Time:**
Low DTMF Speed: 90ms (Used for 5 DPS).
Medium DTMF Speed: 40ms (Used for 10 DPS).
High DTMF Speed: 23 ms (Used for 20 DPS).
- **Data Rate:** 0.2 to 20 Digits/Second.
- **Power Source:** Internal rechargeable LiFePO4 3.2V 650mAh AA Battery.
- **Dimensions:** 3.5"W, 5.7"D, 1.9"H

Specifications are Subject to Change Without Notice

BASIC START-UP

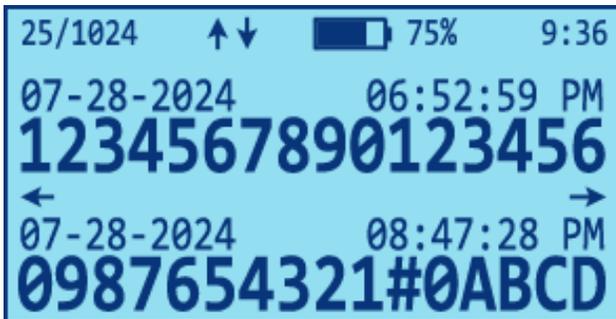
Press **POWER**.

START SCREEN



- The Start Screen will appear for a few seconds, and then the Main Screen will be displayed.
- At the top line, we can see the current date, battery status, and current time. We also see the product name and its version.
- The Main Screen below will not appear if the data memory is empty.

MAIN SCREEN



- At the top of the screen, we will see the following information: accessed memory/total number of memories, battery status, and the current time.
- Additionally, there may be up and down arrows indicating the presence of previous or subsequent memories.
- The stored DTMF sequences are displayed on the main screen across two lines, each showing up to 16 digits, along with the date and time of each reception.
- Each line can hold up to 48 digits. When more than 16 digits occurs, left and right arrows will appear on the display, indicating how to access the hidden digits by scrolling left or right.
- The PDR-01 stores the last 1,024 received DTMF sequences in non-volatile memory, meaning the data remains stored even when the device is turned off.
- All memories can be accessed by scrolling the display up or down using the navigation arrows keys.

PROGRAMMING MENU

Many features of the **PDR-01** can be customized by adjusting the default settings in the programming menu.

To access the menu, press the ENTER key for about half a second. To exit, press ESC. Use the UP and DOWN arrows to navigate through the menu options.

When an option is selected, use the RIGHT arrow or ENTER to move to the default programming parameter field. Then, use the UP and DOWN arrows to change the settings.

Press ENTER to confirm and save the selected value, or press the LEFT arrow to cancel and exit without saving.

The factory default settings are restored by scrolling down to SET DEFAULTS and selecting YES.

MENU	
SET DATE/TIME	
DECODER GAIN (dB)	0
DTMF SPEED	HI
WINDOW TIME (sec)	2.3
CLEAR MEMORY ?	NO
SET DEFAULTS ?	NO
BACKLIGHT TIME	30s
CONTRAST (%)	50
BEEP	ON
INACTIVITY PW.OFF	YES
ABOUT	

- **SET DATE/TIME:** Press ENTER to access the DATE/TIME SETUP screen, as shown below.
- **DECODER GAIN:** Adjusts the decoder gain between -12dB, -6dB, 0dB, +6dB, and +12dB.
- **DTMF SPEED:** Adjustable between LOW, MID, and HI (5, 10, and 20 Digits/Second).
- **WINDOW TIME:** This is the wait time after the last DTMF digit is received, after this time the decoder interprets the end of the DTMF string and saves it to memory. It can be adjusted between 0.1, 0.2, ... 4.9, and 5.0 seconds.
- **CLEAR MEMORY:** If YES, it erases all DTMF data memories. A confirmation screen will appear. Select YES or NO. This action cannot be undone.

- **SET DEFAULTS:** If YES, resets all menu options to the factory default values.
- **BACKLIGHT TIME:** Adjusts how long the display backlight stays on. This time restarts on each key press or DTMF reception. Shorter times save more battery. It can be set between 1 to 60 seconds or always ON.
- **CONTRAST:** Adjusts the display's contrast/brightness. Adjustable from 5% to 100%.
- **BEEP:** Turns the beep sound when pressing the keys, ON or OFF.
- **INACTIVITY POWER OFF:** Select YES or NO to enable or disable Auto Shutdown, which turns off the device after 30 minutes of inactivity to save battery.
- **ABOUT:** Displays the Start Screen mentioned above. Press any key to exit.

DATE TIME SETUP

When the first option, SET DATE/TIME, is selected in the programming menu, the screen below will appear.

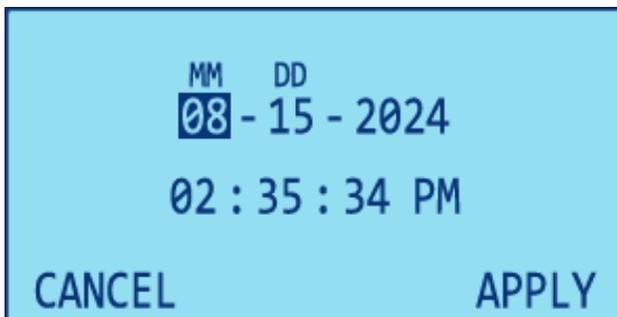


- **CLOCK SETUP:** Press ENTER to open the following **CLOCK SETUP SCREEN**.
- **HOUR FORMAT:** Choose between AM/PM or 24-hour time format.
- **DATE FORMAT:** Choose between Month-Day-Year or Day-Month-Year formats.

The bottom line of the screen displays the current date and time in the formats selected above.

CLOCK SETUP SCREEN

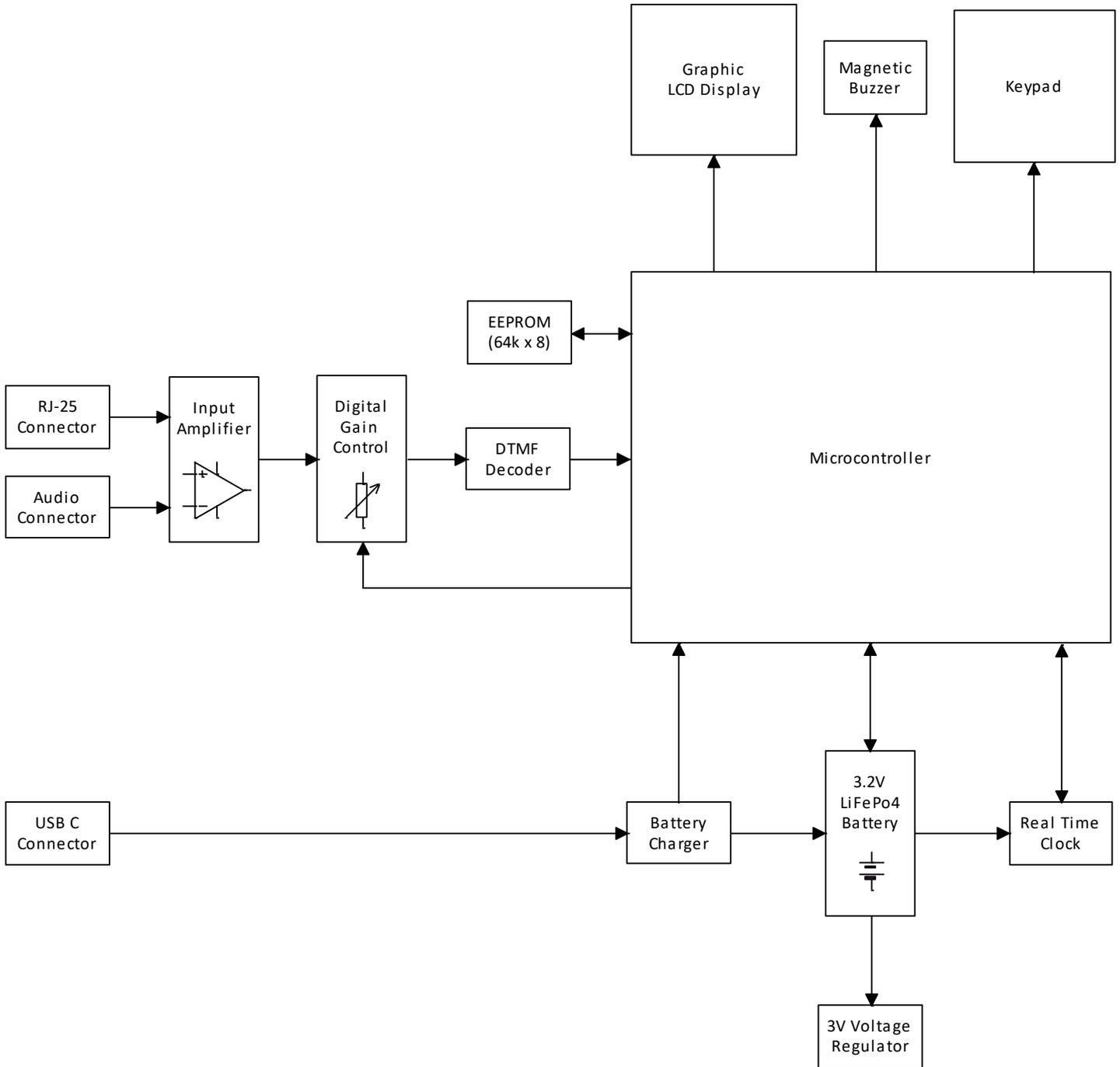
On the following CLOCK SETUP SCREEN, we can update the date and time of the decoder's Real-Time Clock circuit.

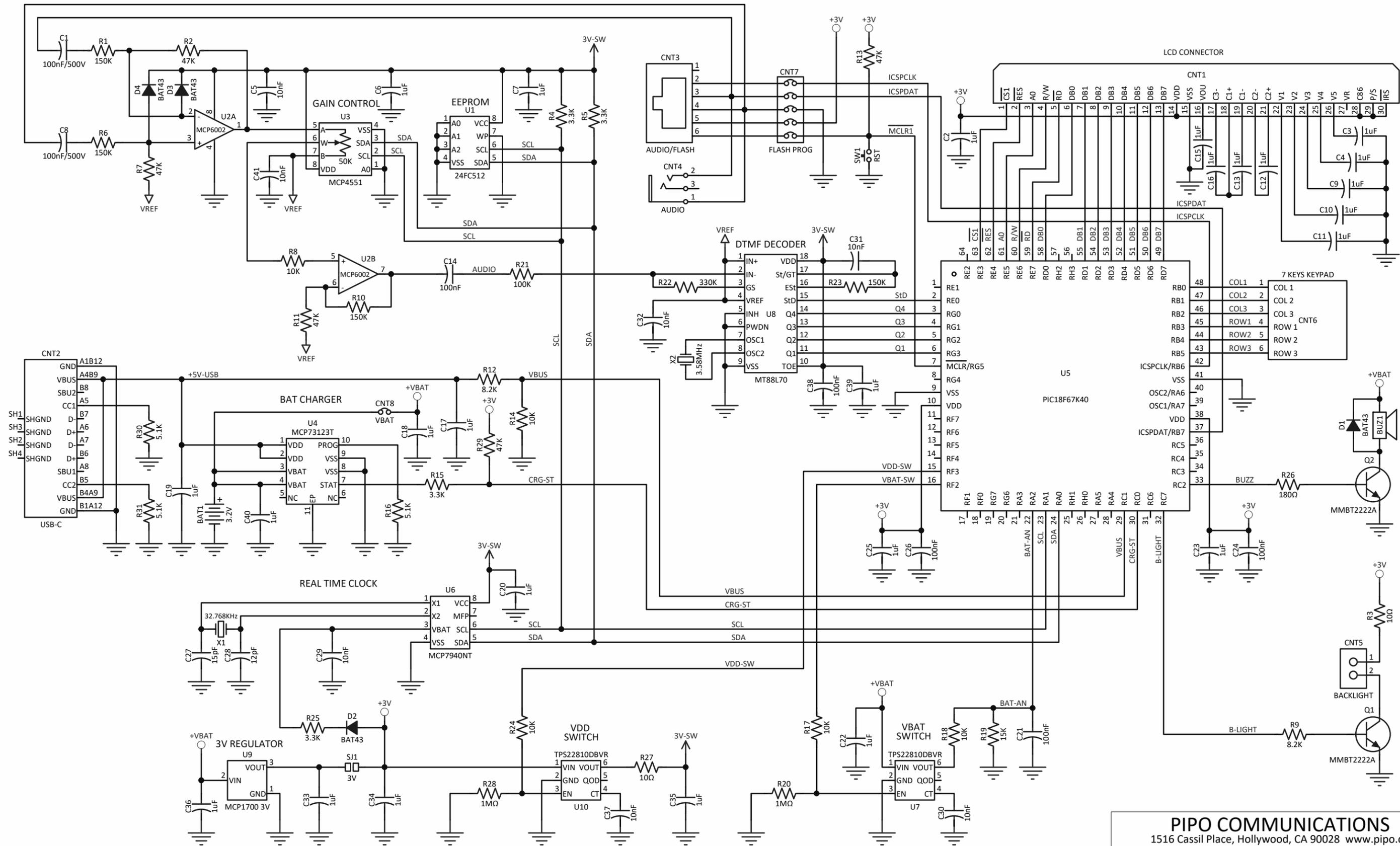


- Use the **RIGHT** and **LEFT** arrow keys to move between fields on the screen.
- Use the **UP** and **DOWN** arrow keys to change the value of the selected field.
- Press **ENTER** to confirm the selected value and move to the next field.

- Press **ESC** at any time to cancel and exit the screen.
- Changes will only be saved when we highlight the **APPLY** field and press **ENTER**.

PRD-01 BLOCK DIAGRAM





PIPO COMMUNICATIONS		
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