Advanced functions.

The IP voltmeter also contains additional functions that are necessary for processing the measured data.

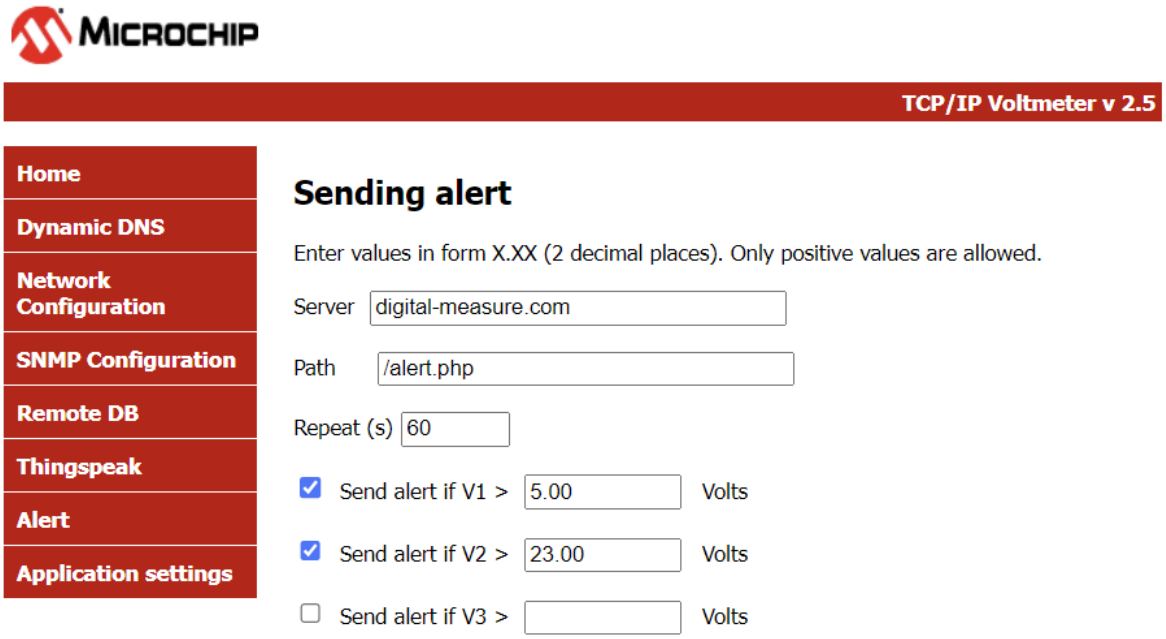
Alert
Remote DB
Thingspeak
SNMP v2
TCP server
Static IP address

Alert

Sending an alert is a crucial feature for monitoring values in individual channels, as it allows for timely action in case the set value is exceeded. With the IP voltmeter, when an alert is triggered, it sends a POST command along with the measured values to the remote server.

Once the remote server receives the alert, it can then take various actions to notify the user of the situation. For example, the server can send an email or SMS message via other services such as SMTP or Twilio. This ensures that the user receives the alert in real-time, enabling them to respond promptly.

The ability to send alerts is particularly important in applications where continuous monitoring is critical, such as in industrial processes or medical equipment. With the IP voltmeter, users can rest assured that they will be notified immediately if any values go beyond the set limits, minimizing the risk of damage or downtime.



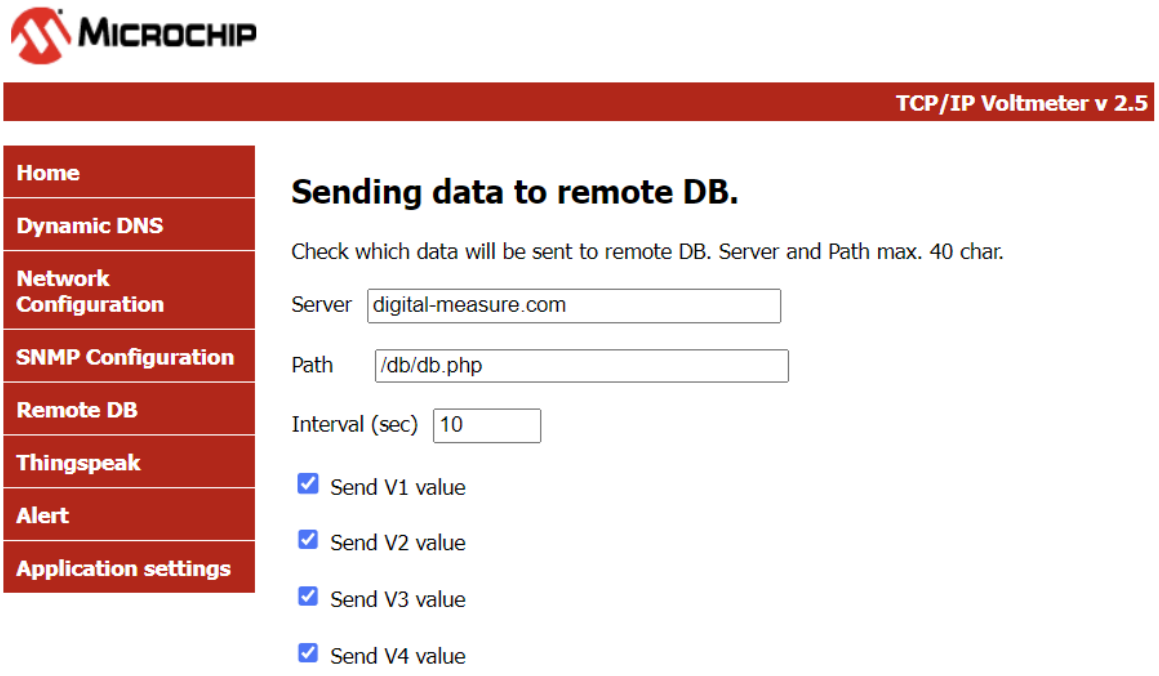
Remote DB

Sending data to a remote database has many benefits, such as allowing you to access and retrieve the stored data from anywhere and at any time. This is especially useful if you have multiple devices or if you want to share the data with others.

Additionally, using a database that is part of web hosting simplifies the process of sending and storing data, as it offers a MySQL database that can be easily accessed and managed.

When using an IP voltmeter, you can send data by using the POST method. To do so, you will need to enter the server address and the subdirectory where the PHP script that receives the data is located. Once you have entered this information, you can send the data to the remote server by clicking the "Save" button.

If you ever need to stop sending data, you can simply leave the form empty and press the Save button, and no data will be sent. This gives you complete control over when and how data is sent and stored in the remote database.



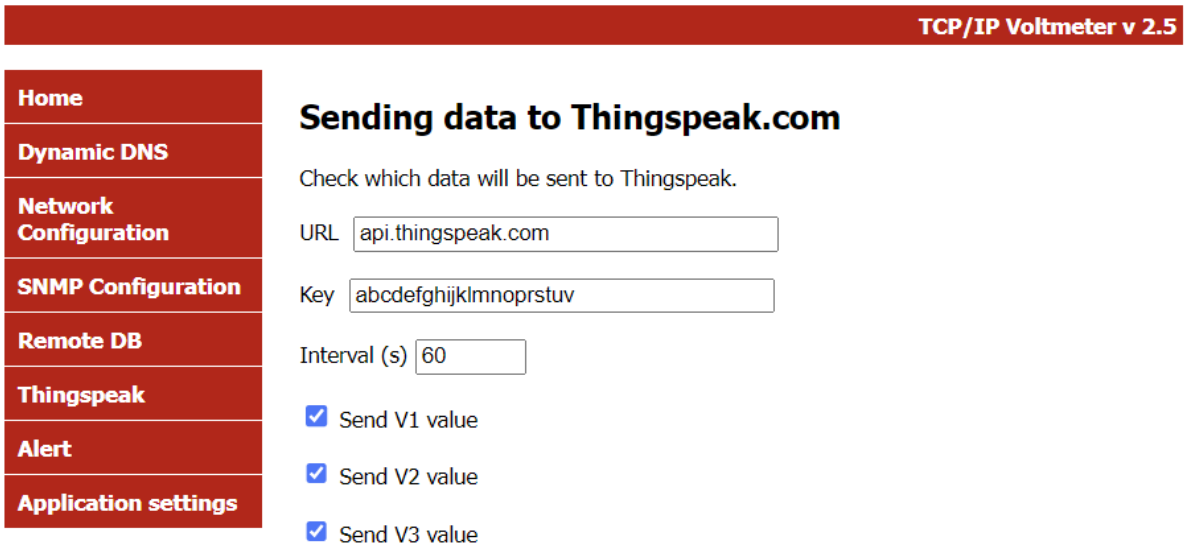
The table below shows the data stored in a **MySQL database**, which can be accessed through the **phpMyAdmin** web interface. The phpMyAdmin interface is a powerful tool for managing and visualizing data stored in a MySQL database, and it can be accessed easily through a web browser.

Thingspeak

ThingSpeak is an Internet of Things (IoT) platform that allows users to collect, analyze, and act on data from connected devices.This data can then be visualized and analyzed using built-in tools or custom applications.Users can also create custom rules and triggers that allow them to automate actions based on specific events or conditions.

To get started with ThingSpeak, users can sign up for a free account and begin creating channels for their devices and sensors. They can then use the platform's API and webhooks to send and receive data from these channels, as well as set up rules and triggers for automation.

To send data to thingspeak it is necessary to fill in the write key in the form, specify the sending interval and select which values will be sent.
After pressing "Save" the data is automatically sent to the thingspeak cloud.



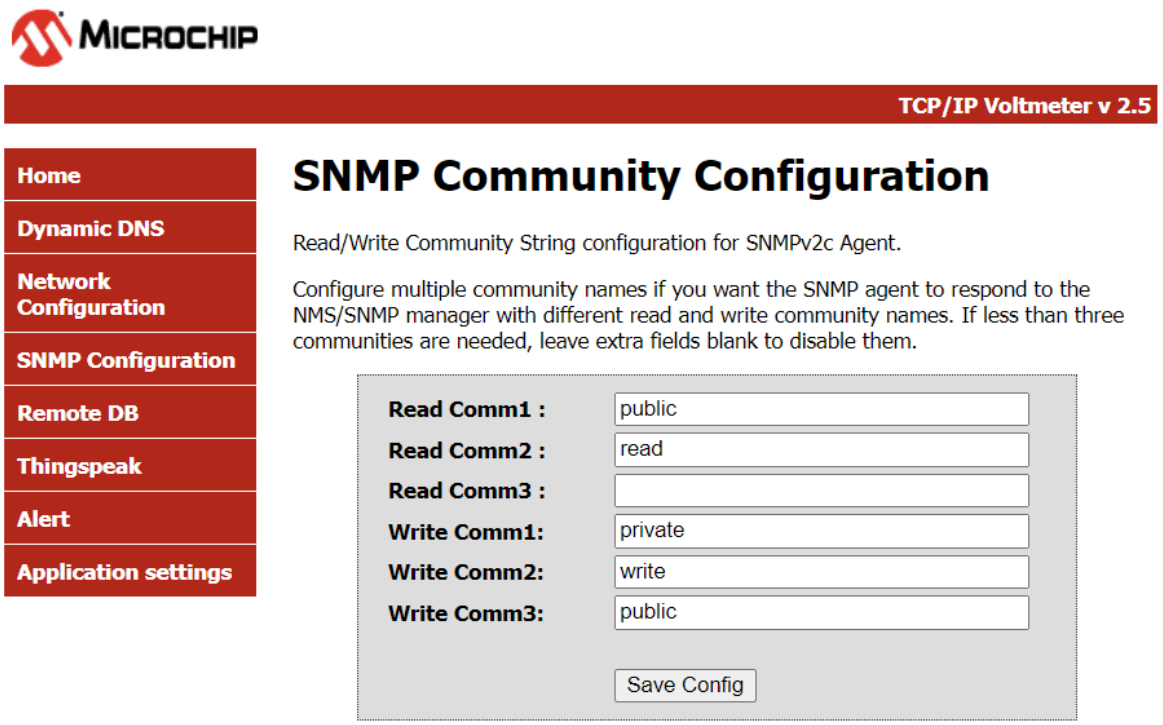
SNMP v2

IP voltmeter also supports SNMP (Simple Network Management Protocol), which offers several benefits for users.

SNMP is a protocol used for managing and monitoring network devices. With SNMP support, the IP voltmeter can be easily integrated into existing network management systems, allowing users to monitor and manage the device alongside other network devices.

One of the main advantages of using SNMP with the IP voltmeter is the ability to monitor the device remotely. SNMP allows users to access the device's status and performance data, such as voltage readings, from a remote location.

Another advantage of using SNMP is that it provides a standardized method for monitoring and managing network devices. This means that the IP voltmeter can be easily integrated into existing network management systems, reducing the need for custom scripts or proprietary software. The IP voltmeter supports SNMP v2.



TCP server on port 9760

The IP voltmeter comes equipped with a TCP server on port 9760, which allows users to easily access and read data from the device.

The TCP server provides a simple interface for accessing data from individual channels, and users can connect to it using any TCP client. One of the main advantages of using the TCP server is its ease of use, as users can simply send commands to read data from specific channels.

To read data from channels 1 to 8, users can send commands such as "volt_1", "volt_2", and so on up to "volt_8". The IP voltmeter will then return the measured values for the specified channels, allowing users to monitor voltage levels in real-time.

You can insert the TCP client into various applications and make your own software to monitor the measured values.

Static IP address

The IP voltmeter is equipped with a feature that allows users to set a static IP address, which offers several advantages over using a dynamic IP address.

A static IP address is an IP address that remains fixed, or static, instead of being assigned dynamically by a DHCP server. This means that the IP address of the IP voltmeter remains the same, regardless of whether it is turned off or disconnected from the network.

With a dynamic IP address, the IP voltmeter's IP address may change each time it is powered on or reconnected to the network. This can cause issues with network communication, as other devices on the network may not be able to find the IP voltmeter if its IP address has changed.

By setting a static IP address, users can ensure that the IP voltmeter always has the same IP address. Another advantage of using a static IP address is improved security.
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To set a static IP address, users can access the Network Settings menu and uncheck the "Enable DHCP" checkbox. After disabling DHCP, it is possible to enter a new IP address that will remain static.