# **Portal Box System User Guide**

This comprehensive guide covers both the MakerPortal web interface and the Portal Box hardware device. Together, these components form a complete access control system for managing equipment access in maker spaces, workshops, labs, and similar environments.

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## **Portal Box Hardware**

### **Basic Operation**

The Portal Box is a physical control device that manages access to equipment. It features an LCD display, RFID card reader, keypad, and indicator lights to provide visual feedback.

#### **Power On and Startup**

1. When the Portal Box powers on, it displays "Setting Up..." on the LCD screen while connecting to WiFi and initializing
2. Once connected, it will display "Getting Role..." on the LCD screen as it identifies itself in the system
3. After successful setup, the LCD screen shows "Ready!" and transitions to the idle state
4. In idle state, the display shows "Welcome! Scan Card to Use" and the display and lights will glow blue

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#### **Starting a Session**

1. Place your RFID card in the slot on the top of the Portal Box
2. The Portal Box will automatically read your card and check your authorization
3. If authorized, you'll need to enter your 4-digit PIN using the keypad on the top of the Portal Box
4. The LCD screen will display your how many attempts you have to enter your PIN
5. Upon successful authentication, the equipment will be powered on and the display will show "Welcome [Name], Machine On" and the display and lights will glow green

#### **Ending a Session**

1. When finished using the equipment, remove your card from the slot in the top of the Portal Box
2. The Portal Box will enter a grace period (typically 10 seconds) showing a countdown and the lights will glow yellow
3. Either reinsert your card to continue using the machine or press the ‘**\***’ button on the keypad to end the session
4. After the session ends, the equipment powers off and the box returns to idle state

### **User Authentication Flows**

#### **Authorized User Flow**

1. Scan your card at the reader
2. Enter your 4-digit PIN when prompted
3. If authorized, the display turns green and shows "Welcome [Name], Machine On"
4. Equipment is now powered on and ready to use
5. Remove your card then press ‘**\***’ button when finished to end your session
6. Your access is logged in the system

#### **Unauthorized User Flow**

1. Scan your card at the reader
2. Enter your PIN when prompted
3. If unauthorized, the display turns red and shows "Unauthorized, Access Denied"
4. The equipment remains powered off
5. Your access attempt is logged in the system

#### **Training Mode**

Training mode allows authorized trainers to grant temporary access to trainees:

1. Scan an Admin/Trainer card(authority level 3+) and enter PIN
2. During the grace period after trainer removes their card, the trainee inserts their card into the slot in the top of the Portal Box
3. The system enters training mode, showing "Training Mode, Machine On" and the display and lights will glow purple
4. The trainee can now use the equipment under supervision
5. When finished, remove the trainee's card and press ‘**\***’ to end the session.

#### **Proxy Access**

If enabled for specific equipment, proxy cards allow extended access without needing to leave the user card in the machine:

1. Scan an authorized user card, enter PIN.
2. Remove card, then during the grace period scan a proxy card at the reader
3. If the equipment allows proxy access, the display shows "Proxy Access, Machine On" with a cyan backlight
4. The equipment is powered on and ready to use
5. Remove the card when finished and press ‘**\***’ to end the session.

### **Special Modes**

#### **Card ID Reader Mode**

This mode displays card IDs for registration purposes:

1. When the box is in idle state (no card present), press the ‘**\***’ key
2. The display will show "Admin Card Required"
3. Insert an authorized admin/trainer card into the slot and enter the PIN
4. The display will show "Card ID Reader, Scanning..."
5. Scan any card to see its ID displayed on the screen
   1. This ID is needed to add a new card into the system via the MakerPortal
6. Press ‘**\***’ again to exit card reader mode

#### **Certification Mode**

This mode allows trainers/admins to authorize new users for equipment:

1. When the box is in idle state, press the ‘**#**’ key
2. The display will show "Admin Mode, Scan Admin Card"
3. Scan an admin/trainer card (authority level 3+) and enter the PIN
4. When prompted, remove the admin card
5. When prompted to "Scan User Card", scan the user's card to be authorized
6. The system will update the database to grant authorization
7. The display will show "Authorization Successful!" if successful
8. Remove the card and press ‘**#**’ to exit certification mode

### **Troubleshooting**

#### **Rebooting the Portal Box**

If the Portal Box becomes unresponsive:

1. First, press the reset button on the back of the Portal Box (Small button on the left side)
2. If issues persist disconnect power from the device
3. Wait 10 seconds
4. Reconnect power to restart the box

#### **Registration Issues**

If your card is not recognized by the system:

1. Enter Card ID Reader mode as described above
2. Scan your card to get its ID
3. Have an administrator add your card to the system using the MakerPortal interface

#### **PIN Entry Issues**

If you make a mistake during PIN entry:

1. You will have 3 attempts to enter the correct PIN
2. After 3 failed attempts, access will be denied
3. Contact an administrator or go to the MakerPortal → Profile to edit your PIN

## **MakerPortal Web Interface**

### **Getting Started**

#### **Prerequisites**

1. Your email must be added to the MakerPortal in order to login with Google OAuth
2. Have an Admin go to Users → Add, then fill out the user’s details to add them to the system

#### **Logging In**

1. Navigate to the MakerPortal URL (makerportal-steam.com) in your web browser
2. Click the account icon in the top right corner
3. Select "Sign in with Google"
4. Authenticate with your Google account
5. If your account is authorized, you'll be redirected to the home screen

#### **Home Screen and Navigation**

The MakerPortal interface is organized into three main sections:

1. **Manage**: Equipment, Equipment Types, Cards, Users, and Locations
2. **Reports**: Access logs and usage data
3. **System**: API Keys and Roles

It is important to note that users who are not admins will only see the Equipment and Equipment Types on the home screen.

### **Managing Users (Admins Only)**

#### **Viewing Users**

1. From the dashboard, click on "Users" in the Manage section
2. A list of all users in the system will be displayed
3. Click on any user to view their details

#### **User Details Page**

The user details page shows:

* Name, email, and role
* PIN code (for administrative reference)
* Active status
* Equipment authorizations
* Account transaction history

#### **Adding a New User**

1. From the Users list, click the "Add" button
2. Fill in the required fields:
   * **Name**: Full name of the user
   * **Email**: Email address (used for authentication)
   * **Comment**: Optional notes about the user
   * **PIN**: 4-digit PIN code (default is 0000)
   * **Active**: Toggle whether the user account is active
   * **Role**: Select the user's role (User, Trainer, Admin)
   * **Authorizations**: Check equipment types the user is authorized to use
3. Click "Save" to create the user

#### **Editing a User**

1. From the user details page, click "Edit"
2. Modify the user information as needed
3. Click "Save" to update the user

#### **Authorizing Equipment Access (can also be done via the Portal Box - Certification Mode)**

1. From the user details page, click "Edit"
2. In the Authorizations section, check the boxes for equipment types to grant access
3. Click "Save" to update authorizations

#### **Adding Payment Credit**

1. From the user details page, click "Add Payment"
2. Enter the date and amount of the payment
3. Click "Confirm" to review the payment details
4. Click "Save" to record the payment

### **Managing Equipment**

#### **Viewing Equipment**

1. From the dashboard, click on "Equipment" in the Manage section
2. A list of all equipment will be displayed showing name, type, location, and status
3. Click on any equipment item to view its details

#### **Equipment Details Page**

The equipment details page shows:

* Name and type
* MAC address (unique identifier)
* Location
* Timeout settings
* Service status
* Authorized users

#### **Adding New Equipment**

1. From the Equipment list, click the "Add" button
2. Fill in the required fields:
   * **Name**: Name of the equipment
   * **MAC Address**: The 12-character MAC address of the Portal Box (no colons)
   * **Type**: Select the equipment type
   * **Location**: Where the equipment is located
   * **Time out**: Minutes before auto-logout (0 for no limit)
   * **In service**: Toggle whether the equipment is available for use
3. Click "Save" to create the equipment

#### **Editing Equipment**

1. From the equipment details page, click "Edit"
2. Modify the equipment information as needed
3. Click "Save" to update the equipment

#### **Managing Equipment Types**

1. From the dashboard, click on "Equipment Types"
2. Click on any type to view details or "Add" to create a new type
3. Configure equipment type properties:
   * **Name**: Type of equipment
   * **Requires Training**: Whether users need specific authorization
   * **Charge Policy**: Payment model (No Charge, Per Use, Per Minute)
   * **Rate**: Cost rate if applicable
   * **Allows Proxy**: Whether proxy cards can be used with this equipment
4. Click "Save" to update

### **Managing Cards**

#### **Viewing Cards**

1. From the dashboard, click on "Cards" in the Manage section
2. A list of all cards will be displayed
3. Use the search box to find specific cards by ID
4. Click on any card to view its details

#### **Card Details Page**

The card details page shows:

* Card ID
* Card Type (User, Proxy, Training, etc.)
* Associated user (if applicable)
* Associated equipment type (if applicable)

#### **Adding a New Card**

1. From the Cards list, click the "Add" button
2. Fill in the required fields:
   * **Card ID**: The ID number obtained from the Portal Box Card Reader mode
   * **Type**: Select the card type:
     + **User Card**: Standard card assigned to a user
     + **Proxy Card**: Temporary access card
     + **Training Card**: For equipment training purposes
   * **User**: For User Cards, select the associated user
   * **Equipment Type**: For Training Cards, select the associated equipment type
3. Click "Save" to create the card

#### **Card Reader Mode (Getting Card IDs)**

To obtain a card ID for adding to the system:

1. At the Portal Box, press ‘**\***’ in idle mode to enter Card ID Reader mode
2. Authenticate with Admin card + PIN
3. Scan the unknown card at the reader
4. Note the Card ID displayed on the screen
5. Press ‘**\***’ again to exit Card ID Reader mode
6. Enter this ID in the Card ID field when adding a new card

### **Access Logs**

#### **Viewing Access Logs**

1. From the dashboard, click on "Access Log" in the Reports section
2. A chronological list of all access events will be displayed
3. Each entry shows:
   * Time and date
   * Event type (access attempt, completion, etc.)
   * Equipment name and type
   * Card ID
   * User (if applicable)
   * Location

#### **Filtering Logs**

1. Click the search icon to open the filter panel
2. Apply filters:
   * **After/Before**: Date range
   * **Location**: Filter by location
   * **Equipment Type**: Filter by equipment type
   * **Equipment Name**: Filter by specific equipment
3. The log will update to show only matching entries

#### **Exporting Logs**

1. Apply desired filters to the log
2. Click the download icon
3. The log will be downloaded as a CSV file

### **System Configuration**

### **Managing API Keys**

1. From the dashboard, click on "API Keys" in the System section
2. Click on any key to view details or "Add" to create a new key
3. Enter a name for the API key
4. Click "Save" to generate the key
5. Copy and securely store the token value

#### **Managing Locations**

1. From the dashboard, click on "Locations" in the Manage section
2. Click on any location to view details or "Add" to create a new location
3. Enter a name for the location
4. Click "Save" to create the location

**Portal Box Color Quick Reference:**

| **Light Color** | **Portal Box State** |
| --- | --- |
| Blue | Awaiting Card |
| Green | Access Granted |
| Red | Access Denied |
| Orange | Proxy Mode |
| Purple | Training Mode |
| Yellow Flashing | Grace Period  (Push ‘**\***’ to end) |