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1. Overview

The PixController, Inc. M2M Connect Cloud is a complete IoT "Internet of Things" web-based cloud solution for all wireless PixController, Inc. wireless products. The cloud provides an easy to manage dashboard interface for all of your remotely deployed systems whether they are security cameras, environmental data loggers, or streaming video systems. Manage all of your devices from your PC, Mac, Tablet, and Smart Phone devices with a browser app.

Contact PixController, Inc. at sales@pixcontroller.com or call 724-733-0970 for your free M2M Connect Cloud account. Be sure to have your Raptor device serial numbers.

For a demonstration of the M2M Connect Cloud system visit:

http://www.M2MConnectCloud.com

Demo Login Account:
Username: demo@pixcontroller.com
Password: demo123
2. Logging into the M2M Connect Cloud

Once you have received your username and password to your M2M Connect Cloud account go to the M2M login page. Login or register into the M2M Connect Cloud by typing this address into your web browser:

http://www.M2MConnectCloud.com

If you do not have a PixController, Inc. wireless device and/or would like to test out the M2M Connect Cloud features use “demo@pixcontroller.com” for the username and “demo123” for the password.

3. Register for a M2M Connect Cloud Account

If you would like to register for a M2M Connect Cloud account simply click on the “Register” at the login page.
Enter your name, address, phone, email, and device & serial number information. To locate your serial number open your PixController wireless system and locate the serial number on the circuit board or case interior. The serial number will start with a “P”, example “P10-123456”.

If you cannot locate the PixController wireless system serial number simply send is the modem IMEI or MEID number. To retrieve the modem IMEI or MEID number put the system into diagnostic mode, go to the modem menu, and scroll down.

For help with using Diagnostic Mode see our video in our Tech Tips section: http://www.pixcontroller.com/techtips/TechTip-DiagnosticMode.htm

4. M2M Connect Cloud Dashboard

The M2M Connect Cloud dashboard displays all of your connected PixController devices on an easy to manage Google Maps display. Device status information including signal level, battery level, and alarm status are readily available from the dashboard interface. Quick links provide access to device data display and device management.
Click on the device name to center the Google Map pin location of the device installed in the field.

Click on the Google Map pin to access the Device data panel.

5. **PixController Wireless Devices**

The M2M Connect Cloud supports all Remote Camera, Remote Stream, and Remote Monitor devices manufactured by PixController, Inc. Each device type will be displayed under the appropriate category listed below.

5.1 **Remote Cameras**

Remote Cameras include the following PixController devices:

- Raptor Wireless Camera
- Raptor Remote Trigger
- UndercoverEye Raptor
The console panel below will show the model type, current signal, current battery level, alarm status, link to the device page listed at “Photos”, and a link to the device configuration listed at “Config”.

### Remote Cameras

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Model</th>
<th>Signal</th>
<th>Battery</th>
<th>Alarms</th>
<th>Photos</th>
<th>Config</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security Demo Camera</td>
<td>Trigger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raptor 2G Camera</td>
<td>Camera</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the device has been off over a 24-hour period the signal and battery will not be lit.

#### 5.2 Remote Streaming Video Systems

Remote Streams include the following PixController devices:
- RemoteStream
- RemoteStream w/ wireless sensor trigger
- RemoteStream Alarm
- RemoteStream Covert
- RemoteStream Trap

The console panel below will show the model type, current signal, current battery level, alarm status, link to the device page listed at “Video”, and a link to the device configuration listed at “Config”.

### Remote Streams

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Model</th>
<th>Signal</th>
<th>Battery</th>
<th>Alarms</th>
<th>Video</th>
<th>Config</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Streaming Demo</td>
<td>Stream</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hays Bald Eagle Webcam</td>
<td>Stream</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the device has been off over a 24-hour period the signal and battery will not be lit.

#### 5.3 Remote Monitor Environmental Data Loggers

Remote Monitor include the following PixController devices:
- RemoteMonitor CH4
- RemoteMonitor Weather Station
- RemoteMonitor Water Management
- RemoteMonitor Time-Lapse
The console panel below will show the model type, current signal, current battery level, methane (if the RemoteMonitor device is the CH4 model), alarm status, link to the device page listed at “Data”, and a link to the device configuration listed at “Config”.

### Remote Monitors

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Model</th>
<th>Signal</th>
<th>Battery</th>
<th>Methane</th>
<th>Alarms</th>
<th>Data</th>
<th>Config</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demo RemoteMonitor CH4</td>
<td>CH4</td>
<td>![Signal Icon]</td>
<td>![Battery Icon]</td>
<td>![Methane Icon]</td>
<td>![Alarms Icon]</td>
<td>![Data Icon]</td>
<td>![Config Icon]</td>
</tr>
<tr>
<td>Haymaker Abandoned Gas Well</td>
<td>CH4</td>
<td>![Signal Icon]</td>
<td>![Battery Icon]</td>
<td>14700</td>
<td>![Alarms Icon]</td>
<td>![Data Icon]</td>
<td>![Config Icon]</td>
</tr>
</tbody>
</table>

If the device has been off over a 24-hour period the signal and battery will not be lit.

### 6. Remote Cameras Device Page

The device page for Remote Camera devices includes a display for the last 100 images which are transmitted, the current status information including signal and battery, device model, and device serial number. The page also includes historic graphs of battery and signal levels. Lastly, the device page includes detailed image information.

The image data set can be traversed by clicking on the right and left arrows overlaid on the image.
The COTA table includes options to get current COTA device status, trigger a manual photo, and trigger the solenoid if the Remote Camera device is the Remote Trigger model.

Clicking on the current image will display the image in full size. Options to magnify and download the image are available in the top left corner as shown below.

6.1 Remote Cameras Configuration

From the Dashboard page you can configure the Remote Camera device by clicking on the “Config” icon. The following remote device configuration options are available:

General Settings Tab

Under this option the user can set the trigger mode, either sensor trigger or time-lapse mode, low battery shutdown voltage, LED trigger indicator, and various boot-up options including start up messages and device modules options. If a setting is changed be sure to click the “Save Camera Configuration” at the bottom of the page.
Email Tab

In the Email tab the user can set the email address the M2M Connect Cloud will relay emails to when images are transmitted from the device to the cloud. If an email is added or deleted be sure to click the “Save Camera Configuration” at the bottom of the page otherwise the settings will not be changed.

Camera Tab

The Camera tab will let the user adjust the camera settings such as the camera resolution, camera trigger speed, camera description, and trigger response delay if your Remote Camera is the Remote Trigger model. If a setting is changed be sure to click the “Save Camera Configuration” at the bottom of the page.
Schedule Tab

The Active Schedule box lets you setup the device for 24-hour activity, Day only activity, or Night only Activity. There is also a “Use Schedule Grid” setting. When selecting the “Use Schedule Grid” setting this allows you to setup blocks of time where the device will not take trigger events. This is very useful when setting the device up in a work place setting where you want the device to be inactive during work hours. Simply drag you mouse across the blocks to fill them in. The green highlighted colors will let you set times the Raptor System will be active. You can also set the “Set” or “Clear” buttons off to the right to set a whole day or clear a whole day.

COTA Tab

This option allows a user to remotely configure all device settings by transmitting configuration files to Remote Camera units in the field from the Cloud. Other functions include photos and GPS location on demand, and retrieving error logs. This function is known as Configuration update Other-The-Air (COTA). This setting allows adjustment of the Camera Update Cycle – when the device wakes up to respond to COTA commands. Note, shorter update cycles can consume more battery power. To send COTA commands click all appropriate COTA functions in
the “COTA Commands for Selected Device” box then click on the “TRANSMIT CHANGES TO
DEVICE” button. Upon the next COTA update cycle your changes will take effect. By clicking the
“COTA STATUS” button the user can get feedback weather the device has responded to the
COTA command.

7. RemoteStream Device Page

The Remote Stream device page allows for live viewing of the IP camera stream (if the customer
has chosen this option), controlling the IP camera with commands to power on, power off, and
re-boot, login to the IP camera for controls to move the camera, and login to the cellular
gateway.

The Remote Stream device page includes battery monitoring and cellular signal monitoring.
Example RemoteStream w/ embedded Live Stream
Example RemoteStream w/o embedded Live Stream
8. RemoteMonitor Device Page

To view the current data from the RemoteMonitor click on the dial icon under the “Data” section. The data page will be displayed. The data screen will display the last 3-days of historical information in graphs for each sensor.
Sensor Data Page Information

1. Data download section
2. Device information section displaying the device model and serial number
3. Current sensor data
4. Device name
5. Telemetry signal strength
6. Battery level
7. Traverse the data set backwards, forwards, or refresh the data.
8. Sensor graph. Note: if you move your cursor over the sensor graph and move the mouse roller you can expand and collapse the data.
**Downloading Data**

From the sensor data page the device data can be downloaded to a comma-separated file (CSV) for further review and analytics in packages such as Microsoft Excel. To download the data perform the following steps:

1. Under the “Data” box check which parameters you wish to download.
2. Select the starting data from the calendar after you click in the “Start Date” box.
Select the “End Date” and press the “Download Data” button.

The data will be downloaded to a file called “CH4DATA.CSV” in the following format: 
<Date>, <Time>, <Methane in PPM>, <Pressure in InHg>, <Voltage in volts>, <Temperature in F>, and <Signal>
Remote Sensor Configuration

To adjust any of the device settings go to the Dashboard page and click on the gear icon under “Config”. The following tabs will let you configure and remotely adjust device operation.

General Settings Tab

Configure the intervals data is read and transmitted. Note, we do not recommend sending data under 10-minute intervals for battery operated devices. Configure the low battery shutdown. This setting will power the device off at the set voltage for 24-hours in order not to damage the battery. If in 24-hours the device recovers to a voltage above the device shutdown parameter it will start transmitting data again. Configure a startup notification which will send an email every time the device is powered on, and configure if a camera is attached to the device. If a change is made be sure to click on the “Save Camera Configuration” button.

Email Tab

Configure the email addresses alarm events and device notifications are sent to. If a change is made be sure to click on the “Save Camera Configuration” button.
Camera Tab

If the device is configured with a camera you can adjust the camera resolution here. If a change is made be sure to click on the “Save Camera Configuration” button.

Schedule Tab

The device can be configured to transmit data 24-hours a day, day only, night only, or in a scheduled mode. If a change is made be sure to click on the “Save Camera Configuration” button.
If using the scheduler simply click and drag the mouse for the day/hours you wish the device to operate in. If a change is made be sure to click on the “Save Camera Configuration” button.

**COTA Tab**

COTA stands for “Configure Over-The-Air”. First you need to set the “Update Cycle”. This setting adjusts the wake-up time for the device to see if it has any commands to perform. We suggest setting the wake-up cycle for 1-hour in battery operation mode.

The user can adjust the following settings:

- a) Send the configuration settings
- b) Retrieve the error log
- c) Retrieve the GPS location
- d) Trigger a manual photo request
- e) Retrieve device status information

Check the boxes of the commands you want to send to the device and press the “TRANSMIT COMMANDS TO DEVICE” button. When the device wakes up on its scheduled wake-up cycle the commands will be processed.

**Alarms/Alerts Tab**
Alarm and alert parameters can be set for Methane and Battery levels. Methane and Battery levels have three user-selected levels which can be set and corresponding color codes which will be displayed on the Dashboard. If you wish to be notified in real-time via email/SMS text click “Notify” box under the “Action” column.