



QMotion Qadvanced v1.2 Module Application Guide

Description

This module is compatible with QMotion Qadvanced with ZigBee HA (v1.2) shades via the QMotion Qube.

Supported Processors

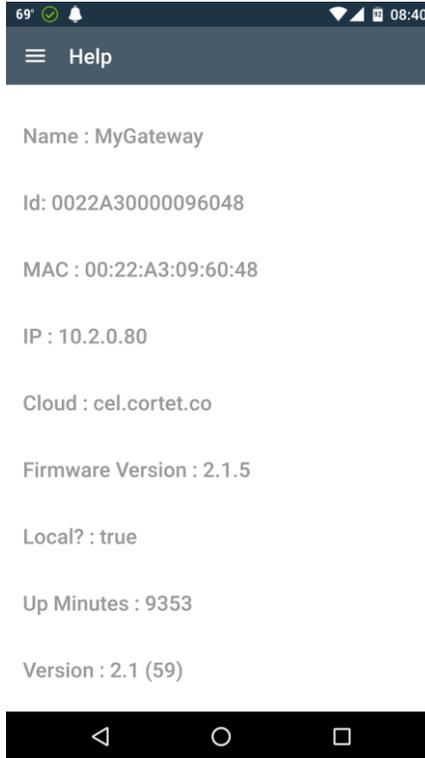
Any 2-series with an Ethernet card or 3-series processor is supported.

Compatibility			Processor Requirements	
				

Ethernet Configuration Information

Qube IP Address

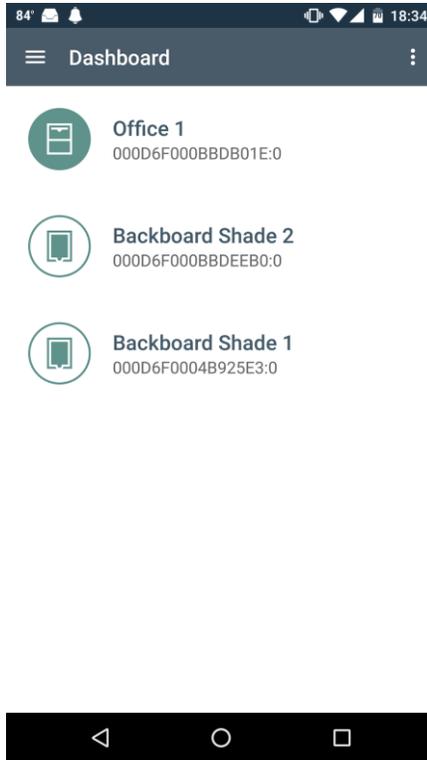
This module utilizes direct sockets to communicate with the Qmotion Qube. To determine the Qube address, download the Qmotion Qube app on an Android or iOS device. After you are signed into the app, select help. In the help window, it will display the IP Address of the Qube. At this time, the Qube does not have the ability to be assigned a static address. It is recommended to use a DHCP Reservation to maintain communication with the Qube..



Module Application

Determining shade addresses.

Shade addresses are listed in the Qmotion app in the dashboard view. You must enable "Show Device EUI on Dashboard" from the help menu. Once enabled, the dashboard view will show each shade address below the name of each shade. This value must be placed in each shade module as it appears in the app.



Polling

The module will not poll for feedback automatically. You will need poll at a frequency that you see fit for your project. There are two types of data to be retrieved from the Qube:

- Polling for all shades status provides
 - Level feedback
 - Battery low digital state.
- Polling for shade attributes provides
 - Shade lower limit
 - Shade upper limit
 - Shade number of actuations
 - Shade battery percent remaining

On the shade control module, we have provided an analog output for level feedback that is seeded with the analog input to "emulate" the position of the shade. This output will be updated with the actual feedback after a successful poll. There is an additional output that is not seeded, that will only update after a successful poll.

Polling Frequency

We recommend polling after a shade command is issued. The delay at which the Qube may have updated data can vary between systems and RF factors. The demo program has a polling example that demonstrates this.

We recommend that polling the attributes be done once a night as the data that it reports changes infrequently.

All commands are entered into a TCP/IP queue and will be sent in the order they were put into the queue.

Groups

Currently groups are only assignable through the app during setup. Also currently group id's are only able to be determined by using a web browser by entering http://ip_address_of_cube/groups. This command will report a list of groups with the group ID. To control a group, place a group ID in one of the Group ID parameters of the processor module, then initialize the corresponding `[groupx_goto_level]` to set that group of shades to a level.

Signal and Parameter Descriptions –Processor Module

Bracketed signals such as “[signal_name]” are optional signals

DIGITAL INPUTS

[poll_status_of_all_shades]Pulse to poll all shades status. Returns shade level, and low battery digital.
[poll_attributes_of_all_shades]Pulse to poll all shades attributes. Returns upper limit, lower limit, number of actuations, battery percent.

ANALOG INPUTS

[groupx_goto_level]Initialize to send a group of shades to a level.

SERIAL INPUTS

[from_shadex]XSIG to shade module. Tie this signal to a shade modules [to_shade_processor] output. . See demo program for an example.

DIGITAL OUTPUTS

ANALOG OUTPUTS

SERIAL OUTPUTS

[to_shadex]XSIG to shade module. Tie this signal to a shade modules [from_shade_processor] input. See demo program for an example.

PARAMETERS

Qube IP AddressEnter the IP address of the QMotion Qube.
Groupx IDEnter the Group ID for [groupx_goto_level].

Signal and Parameter Descriptions –Shade Module

Bracketed signals such as “[signal_name]” are optional signals

DIGITAL INPUTS

[raise]	Pulse to raise a shade. The shade will start raising until it reaches the upper limit.
[lower]	Pulse to lower the shade. The shade will lower until it reaches the lower limit.
[stop]	Pulse to stop the shade from traveling.
[identify].....	Pulse to make the shade identify itself. The shade will travel up and down for approximately 20 seconds.

ANALOG INPUTS

[goto_level].....	Initialize to send the shade to a level where 0d corresponds to the lower limit and 65535d corresponds to the upper limit. Do not Ramp the input.
-------------------	---

SERIAL INPUTS

[from_shade_processor]	XSIG to processor module. Tie this signal to a processors [to_shadex] output. See demo program for an example.
------------------------------	--

DIGITAL OUTPUTS

[batbattery_low].....	Indicates the shade batteries are low. Signal is refreshed when [poll_status_of_all_shades] is pulsed.
-----------------------	--

ANALOG OUTPUTS

[level_fb_unseeded]	Actual level of shade as reported from the Qube where 0d corresponds to the lower limit and 65535d corresponds to the upper limit.
[level_fb_seeded]	level of shade, first seeded by [goto_level], then after a poll cycle occurs, level will be reseeded by actual feedback. 0d corresponds to the lower limit and 65535d corresponds to the upper limit. See demo program for example.
[upper_limit_cm_fb].....	actual upper limit as reported by Qube. Pulse [poll_attributes_of_all_shades] to refresh this output. 1d = 1cm
[lower_limit_cm_fb]	actual upper limit as reported by Qube. Pulse [poll_attributes_of_all_shades] to refresh this output. 1d = 1cm.
[number_of_actuations].....	actual number of actuations as reported by the Qube. Pulse [poll_attributes_of_all_shades] to refresh this output. 1d = 1 actuation.
[battery_level_percent_remaining].....	actual battery level remaining as reported by the Qube. Pulse [poll_attributes_of_all_shades] to refresh this output. 0d=0% 65535=100%.

SERIAL OUTPUTS

[to_shade_processor]	XSIG to processor module. Tie this signal to a processors [from_shadex] input. See demo program for an example.
----------------------------	---

PARAMETERS

Shade Address.....	Enter the shade address as its found the QMotion app described above.
--------------------	---

Support

This module is supported by ControlWorks Consulting, LLC. Should you need support for this module please email support@controlworks.com or call us at 440-449-1100. ControlWorks normal office hours are 9 AM to 5 PM Eastern, Monday through Friday, excluding holidays.

Before calling for support, please ensure that you have loaded and tested operation using the included demonstration program and touchpanel(s) to ensure that you understand the correct operation of the module. It may be difficult for ControlWorks to provide support until the demonstration program is loaded.

Updates, when available, are automatically distributed via Email notification to the address entered when the module was purchased. In addition, updates may be obtained using your username and password at <https://www.controlworks.com/Customers/Login.aspx>.

Distribution Package Contents

The distribution package for this module should include:

QMotion_Qadvanced_Processor_(ControlWorks)_v1.0.umc	Crestron User Module
QMotion_Qadvanced_Engine_V1.0_(ControlWorks).usp	..SIMPL+ file used within the processor module
QMotion_Qadvanced_Engine_V1.0_(ControlWorks).ush	..SIMPL+ header file
QMotion_Qadvanced_Shade_Control_(ControlWorks)_v1.0.umc	SIMPL+ file used within the processor module
Qmotion_Qadvanced_TSW1052_(ControlWorks)_v1.0.vtp	Demo touchpanel for TSW-1052
DIRECTV_IP_XPANEL_Demo(ControlWorks)_v1.1.vtpDemo XPANEL
Qmotion_Qadvanced_(ControlWorks)_v1.0.smwDemo program for PRO3 processor

Revision History

V1.2 caleb@controlworks.com 2017.02.08

- Additional adjustments of the TCP/IP Queue.
- Fixed issue where get attributes would poll the shades too quickly.
- Added ten additional groups.

V1.1 caleb@controlworks.com 2017.01.27

- Fixed issue where queue could exceed bounds leading to no communication.
- Turned off remaining print statements that should have been debug print.

V1.0 caleb@controlworks.com 2016.08.01

- initial release

Development Environment

This module version was developed on the following hardware and software. Different versions of hardware or software may or may not operate properly. If you have questions, please contact us.

Manufacturer Hardware	Software Version
Qube Firmware	2.1.5
Crestron Hardware	Firmware Version
Crestron AV3 Processor	1.501.0013
Software	Software Version
SIMPL Windows	4.03.24
Vision Tools Pro-e	6.0.07
Smart Graphics Controls	2.09.06.01
Crestron Database	57.00.003.00
Device Database	76.05.002.00

ControlWorks Consulting, LLC Module License Agreement

Definitions:

ControlWorks, We, and Us refer to ControlWorks Consulting, LLC, with headquarters located at 701 Beta Drive, Suite 22 Mayfield Village, Ohio 44143-2330. *You and Dealer* refer to the entity purchasing the module. *Client and End User* refer to the person or entity for whom the Crestron hardware is being installed and/or will utilize the installed system. *System* refers to all components described herein as well as other components, services, or utilities required to achieve the functionality described herein. *Module* refers to files required to implement the functionality provided by the module and may include source files with extensions such as UMC, USP, SMW and VTP. *Demo Program* refers to a group of files used to demonstrate the capabilities of the Module, for example a SIMPL Windows program and VisionTools Touchpanel file(s) illustrating the use of the Module but not including the Module. *Software* refers to the Module and the Demo Program.

Disclaimer of Warranties

ControlWorks Consulting, LLC software is licensed to You as is. You, the consumer, bear the entire risk relating to the quality and performance of the Software. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from any defect in the Software, even if ControlWorks Consulting, LLC had reason to know of the possibility of such damage. If the Software proves to have defects, You and not Us must assume the cost of any necessary service or repair resulting from such defects.

Provision of Support

We provide limited levels of technical support only for the most recent version of the Module as determined by Us. We do not provide support for previous version of the module, modifications to the module not made by Us, to persons who have not purchased the module from Us. In addition, we may decline to provide support if the Demo Program has not been utilized. We may withdraw a module from sale and discontinue providing support at any time and for any reason, including, for example, if the equipment for which the Module is written is discontinued or substantially modified. The remainder of your rights and obligations pursuant to this license will not be affected should ControlWorks discontinue support for a module.

Modification of Software

You may not decrypt (if encrypted), reverse engineer, modify, translate, disassemble, or de-compile the Module in whole or part. You may modify the Demo Program. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from You modifying the Software in any manner.

Indemnification/Hold Harmless

ControlWorks, in its sole and absolute discretion may refuse to provide support for the application of the Module in such a manner that We feel has the potential for property damage, or physical injury to any person. Dealer shall indemnify and hold harmless ControlWorks Consulting LLC, its employees, agents, and owners from any and all liability, including direct, indirect, and consequential damages, including but not limited to personal injury, property damage, or lost profits which may result from the operation of a program containing a ControlWorks Consulting, LLC Module or any component thereof.

License Grant

Software authored by ControlWorks remains the property of ControlWorks. ControlWorks grants You the non-exclusive, non-transferable, perpetual license to use the Software authored by ControlWorks as a component of Systems programmed by You. This Software is the intellectual property of ControlWorks Consulting, LLC and is protected by law, including United States and International copyright laws. This Software and the accompanying license may not be transferred, resold, or assigned to other persons, organizations or other Crestron Dealers via any means.

The use of this software indicates acceptance of the terms of this agreement.

Copyright (C) 2016 ControlWorks Consulting, LLC All Rights Reserved – Use Subject to License.
US Government Restricted Rights. Use, duplication or disclosure by the Government is subject to restrictions set forth in subparagraphs (a)-(d) of FAR 52.227-19.