

AMX module for iRoom's iBezel



1 – Summary

This document will assist AMX programmers and installers with the integration of this module into their AMX program.

The module was designed to integrate an iRoom iBezel dock into an AMX system.

2 – Resources and Assumptions

2.1 – Supported Systems

The module has been designed for use with an AMX control system with Ethernet capability. A Demo project is provided. This project is not intended for end users, but is provided so that all features of the module can be demonstrated and exercised.

2.2 – Software and Firmware

This module was developed using the following firmware and software versions. Ensure you are using the same version or newer.

AMX NetLinx Studio: 3.3.1.525

iRoom iBezel: 1.4.34

2.3 – Assumptions

It is assumed that you already have a good understanding of AMX Programming and integration. Knowledge of TCP/IP networking would also be beneficial.

It is assumed that the iBezel device is installed and functioning correctly. The iBezel device must be connected to the same LAN as the AMX processor for TCP/IP control.

3 – AMX Modules

3.1 – Module Format

The iRoom project module has been provided in a zip package called "iRoom_iBezel_AMX_[version].zip". Copy the "tko" file to your project folder and add it in to your project. A demo file has been provided for demonstration / evaluation of the module and is not intended for direct integration into your project.

3.2 – Module Features

The module supports the functions listed in the table below.

Commands

Beep	Cause dock to emit an audible beep
DockControl	Operate the dock (dock / undock)
Relay	Operate the I/O relay in the iBezel
LED	Control intensity of buttons LED backlight
Music	Control the playback.
Volume	Control the volume level.

Events

Button	Receive events when dock buttons are pressed / released
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Proximity
Inputs

Receive event with IR Proximity Sensor is activated
receive events when digital inputs change state

3.3 – Using the module in your program

Copy the “iRoom_iBezel.tko” file from the zip file to your AMX project folder and add it to your project. Next, add parameter definitions and a define_module line to your master source file, similar to the following:

```
define_module 'iRoom_iBezel' IROOM_IBEZEL(  
    vdvIRoom_iBezel,  
    dvIRoom_iBezel,  
    iBezel_IP,  
    iBezel_PORT  
    IBEZEL_BUTTONS,  
    IBEZEL_DIGITALINPUTS,  
    IBEZEL_OTHER,  
    IBEZEL_LEVELS
```

The module parameters are as follows:

Parameters	Details
vdvIRoom_iBezel	The virtual device used for communication between the program and the switcher module. Define a device in the virtual device range.
dvIRoom_iBezel	The physical device for the switcher. Define a device in the IP device range.
iBezel_IP	The IP address of the iBezel.
iBezel_PORT	The TCP port of the iBezel (default port = 13601).
IBEZEL_BUTTONS	Integer Array of Channel Code constant Integer IBEZEL_BUTTONS[] = { BTN_HOME, BTN_1, BTN_2, BTN_3, BTN_4, BTN_5, BTN_6, BTN_7, BTN_8 };

IBEZEL_DIGITALINPUTS	<p>Integer Array of Channel Code</p> <pre>constant Integer IBEZEL_DIGITALINPUTS[] = { DIG_INPUT_0, DIG_INPUT_1, DIG_INPUT_2, DIG_INPUT_3, DIG_INPUT_4, DIG_INPUT_5, DIG_INPUT_6, DIG_INPUT_7, DIG_INPUT_8 };</pre>
IBEZEL_OTHER	<p>Integer Array of Channel Code</p> <pre>constant Integer IBEZEL_OTHER[] = { PROXIMITY_SENSOR, PLUGDRIVE_DOCKED, CLACKDRIVE_CLOSED, DOCK_FEEDBACK, RELAY_FEEDBACK, IBEZEL_TOUCHCODE };</pre>
IBEZEL_LEVELS	<p>Integer Array of Channel Code</p> <pre>constant Integer IBEZEL_LEVELS[] = { HOME_BUTTON_LEVEL, LED_1_LEVEL, LED_2_LEVEL, LED_3_LEVEL, LED_4_LEVEL, LED_5_LEVEL, LED_6_LEVEL, LED_7_LEVEL, LED_8_LEVEL, IRDETECTOR_LEVEL, VOLUME_LEVEL }</pre>

3.4 – Testing the modules using the supplied test harness

The supplied demo test harness may be used to test the module. The test harness includes a UI module which controls the iBezel with commands sent via the virtual device. The commands are sent to the module using **send_command**. For instance:

send_command vdvIRoom_iBezel, 'LED_HOME 75';

...will set the level of the Home Button LED to 75%

All commands supported by the module are listed below.

Command	Details
BEEP <time>;	Causes the Dock to emit an audible beep for the specified duration (in tenths of seconds) e.g. the following will emit a beep for second 100 is 10 seconds
DOCK OPEN; DOCK CLOSE; DOCK TOGGLE;	Controls the dock operation
RELAY OPEN; RELAY CLOSE; RELAY TOGGLE;	Controls the operation of the relay in the iBezel
LED_HOME <level>; LED_<number> <level>;	Sets the LED intensity <level> 0-100% <number> 1-8 (ID of the LED controlled)
MUSIC PLAY; MUSIC PAUSE; MUSIC PLAYPAUSE; MUSIC NEXT; MUSIC PREV;	Controls the operation the play transport controls.
VOLUME GET; VOLUME UP; VOLUME DOWN; VOLUME MUTE; VOLUME UNMUTE; VOLUME MUTE_TOGGLE;	Controls the operation of the volume. The limits are 0% to 100% in steps of 5%.
CLEAR_ALL;	Clear cached Data from vdvIRoom_iBezel
REQUEST_ALL;	Gets all information regarding the status of the system.

REBOOT;	Reboots the system
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The test harness supplied allows the exercise basic functionality and displays status.

4 – Feedback from the module

The following table contains feedback received by the module:

data_event	Details
<code>VERSION <value>;</code>	Module version
<code>STATUS <number>=<explanation>;</code>	The current status of the device. Number = 1 (Good and waiting for commands) Number = 2 (Processing commands. Any commands sent will be queued) Number = 3 (There's a problem. Most likely a bad command or connection)

Feedback of button presses, proximity sensor, digital inputs, and other features are received through AMX channel_events on the [vdrvRoom_iBezel](#)

Channel Function	Array Name (define for module parameters)	Index in Array
Home Button	IBEZEL_BUTTONS	1
Quick Access Buttons 1 to 8	IBEZEL_BUTTONS	2 to 9
Digital inputs 0 to 8	IBEZEL_DIGITALINPUTS	1 to 9
Proximity sensor	IBEZEL_OTHER	1
Plug-drive	IBEZEL_OTHER	2
Clack-drive	IBEZEL_OTHER	3
Dock	IBEZEL_OTHER	4
Relay	IBEZEL_OTHER	5
IDock Mode (iBezel or TouchCode)	IBEZEL_OTHER	6

Feedback of LED received through AMX level_events on the [vdrvRoom_iBezel](#)

Level	Array Name (define for module parameters)	Channel Number
Home Button LED	IBEZEL_LEVELS	1 (0%, 25%, 50%, 75%,100%)
LED Buttons 1 to 8	IBEZEL_LEVELS	2 to 9 (0%, 25%, 50%, 75%,100%)
IR Detection	IBEZEL_LEVELS	10 (The limits are 70 to 254)

Volume Level	IBEZEL_LEVELS	11 (The limits are 0% to 100% in steps of 5%.)
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5 – Troubleshooting and tips

5.1 – Communication failure

Check the IP address of the iBezel is correctly entered in the module.

If the commands sent to the iBezel do not seem to be working, check that you can ping the device from a pc.