Partner: Mitsubishi
Model: G50
Device Type: Multi-Zone HVAC

CERTIFIED **INTEGRATED** PARTNER

GENERAL INFORMATION

SIMPLWINDOWS NAME:	Mitsubishi G50 Group v1.1
CATEGORY:	HVAC
VERSION:	v1.1
SUMMARY:	This module will provide control of one (1) Group defined in a Mitsubishi G50 system controller via IP. Although this one Group configured in the G50 may consist of one or more air handlers (indoor units, Lossnay ERV's, etc.), this module will provide control of the units through this single Group definition. Up to 50 of these modules can be used at a time, one module per Group being controlled.
GENERAL NOTES:	All of the Mitsubishi air handlers, or Units, along with the Mitsubishi Centralized Controller (G50) communicate with each other via their M-Net Bus, which is Mitsubishi's proprietary network. The G50 is our gateway to the Mitsubishi Units. We communicate with the G50 via Ethernet, while the G50 communicates to all of the Mitsubishi Units via M-Net.

All Mitsubishi devices communicating to each other via the M-Net Bus are speedy. There is latency, however, between the G50 and Crestron interface via Ethernet. This latency consists of 12s needed for the G50 to respond to an operation or monitoring command that it receives. This time period is not affected by the amount of Mitsubishi Units used in the system (this 12s delay will always occur whether there are 50 units or 1 unit on the M-Net Bus). Any other commands sent to the G50 during this 12s processing period will be ignored and dropped, as there is no internal buffering present in the G50 to store commands.

So if a command is sent to a Mitsubishi Unit via the G50 using Crestron external control, the Unit itself may receive the command and update quickly, while the external control will receive confirmation 12s later. Although the length of this timeout cannot be decreased, these modules will address the issue by queuing any requested functions and sending as a batch command after the previous operation or monitoring command ACK or response is received. If numerous commands are sent, the absolute maximum delay expected is 40s between the last request via input signal to the module and receiving accurate feedback from all 50 Group definitions in the system.

This module works in conjunction with the Mitsubishi Master module, which takes all of the commands generated form the group modules and generates a command for multiple units as described above.

This module was tested with the Mitsubishi AG150. Mitsubishi uses the same protocol for their Centralized Controller units. This module should also work on the following models:

- GB50
- GB24
- G50

CRESTRON HARDWARE REQUIRED:	C2NENET-1, C2NENET-2, 3-Series processor
SETUP OF CRESTRON HARDWARE:	N/A
VENDOR FIRMWARE:	V2.30 (DB No. 01)
VENDOR SETUP:	G50 MUST be set to report Fahrenheit, not Celsius.
CABLE DIAGRAM:	N/A

CONTROL:

Drive_<On/Off>	D	Pulse to turn drive on or off.
Mode_*	D	Pulse to set the desired mode (Air conditioner only – Cool, Dry, Fan, Heat, Auto. Lossnay only – Heat Recovery, LC Auto, Bypass).
Air_Direction_*	D	Pulse to set the desired air direction (Air conditioner only).
Fan_Speed_*	D	Pulse to set the desired fan speed.
Set_Temp_Value_In	A	Use to assign set temp values using an analog init symbol.
Set_Temp_<Up/Down>	D	Pulse to set the requested set temp value.
From_Master	S	Serial feedback from the Mitsubishi Master module. The Master module has 50 serial output signals (one for each of the 50 potential Group modules being controlled). The group number assigned to a Master module serial output signal MUST match the group number assigned in the Group module's parameter field. That serial output signal from that Master module would then be routed to that group module.

CRESTRON

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FEEDBACK:

Drive_Is_<On/Off>	D	Indicates the current drive status.
Mode_Is_*	D	Indicates the current mode (Air conditioner only – Cool, Dry, Fan, Heat, Auto. Lossnay only – Heat Recovery, LC Auto, Bypass).
Air_Direction_Is_*	D	Indicates the current air direction (Air conditioner only).
Fan_Speed_Is_*	D	Indicates the current fan speed.
Set_Temp_Value	A	Analog value indicating the current set temp value.
Set_Temp_Text	S	Text field indicating the current set temp value.
Inlet_Temp_Text	S	Text field indicating the current inlet temp value.
*_Status_Queued	D	Latched high to indicate that a drive, mode, air direction, fan speed or set temp value change request has been made and is in the queue for delivery to the Mitsubishi controller to be processed.
*_Status_Updated	D	Latched high to indicate that a drive, mode, air direction, fan speed or set temp value change request has been delivered to the Mitsubishi controller and processed successfully.
To_Master	S	Serial commands to the Mitsubishi Master module. All Group modules' "To_Master" output signal must be routed to the Master module.

PARAMETER:

Group_Number	P	Indicates the group that this module is assigned to control. The group number assigned to a Master module serial output signal MUST match the group number assigned in this Group module's parameter field. That serial output signal from that Master module would then be routed to this group module only.

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TESTING:

OPS USED FOR TESTING:	v4.003.0015
SIMPL WINDOWS USED FOR TESTING:	4.03.20
DEVICE DB USED FOR TESTING:	73.00.001.00
CRES DB USED FOR TESTING:	54.05.005.00
SYMBOL LIBRARY USED FOR TESTING:	983
SAMPLE PROGRAM:	Mitsubishi G50 v1.0
REVISION HISTORY:	v1.0 – Initial Release v1.1 – Incorporated 3-series best practices in all Simpl+.

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