

# The IC Controller Mitsubishi firmware description

The “IC-Mitsubishi” firmware is similar to the standard IC firmware but allows controlling a Mitsubishi lift. When a cardholder is granted access in the lift cabin reader, the controller sends to the Mitsubishi lift controller, via the Mitsubishi protocol, the command corresponding to the floor(s) the cardholder is able to reach and which lift door (front or rear) has to be opened at the floor. The cardholder rights, i.e. which floors he may access and when, and the door to open at each floor is programmed from the GuardPointPro platform. The command is sent to the lift controller via the port 2 (RS485) of the controller.

The Mitsubishi protocol is as follows:

1. **RS485, 9600BPS;**
2. **1 Start bit, 8 bits data, 1 parity bit, 1 stop bit;**
3. **Command structure:**

	D7	D6	D5	D4	D3	D2	D1	D0
Data 0	0x02							
Data 1	0x00							
Data 2	0x03							
Data 3	0x15							
Data 4	0x0a							
Data 5	0x00							
Data 6	0x00							
Data 7	0x00							
Data 8	0x88							
Data 9	F8	F7	F6	F5	F4	F3	F2	F1
Data 10	F16	F15	F14	F13	F12	F11	F10	F9
Data 11	F24	F23	F22	F21	F20	F19	F18	F17
Data 12	F32	F31	F30	F29	F28	F27	F26	F25
Data 13	F40	F39	F38	F37	F36	F35	F34	F33
Data 14	F48	F47	F46	F45	F44	F43	F42	F41
Data 15	F56	F55	F54	F53	F52	F51	F50	F49
Data 16	F64	F63	F62	F61	F60	F59	F58	F57
Data 17	R8	R7	R6	R5	R4	R3	R2	R1
Data 18	R16	R15	R14	R13	R12	R11	R10	R9
Data 19	R24	R23	R22	R21	R20	R19	R18	R17
Data 20	R32	R31	R30	R29	R28	R27	R26	R25
Data 21	R40	R39	R38	R37	R36	R35	R34	R33
Data 22	R48	R47	R46	R45	R44	R43	R42	R41
Data 23	R56	R55	R54	R53	R52	R51	R50	R49
Data 24	R64	R63	R62	R61	R60	R59	R58	R57
Data 25	CheckSUM = /(Data 1+ Data 2+ ...+Data 24)+1							
Data 26	0x03							

**Note1:** F – Front door; R – Rear door;

**Note2:** From data 9 to data 24, there are 16 bytes (128 bits) which are used for floor selection keys control, 1 = Floor selection key validated; 0 = Floor selection key invalidated;

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### 4. Control process:

After card swiped, the TPL controller sends the corresponding command to the lift controller.

If the command is received correctly, the lift controller will send ACK message as following:

Data 0	Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8
0x02	0x80	0x03	0x03	0x91	0xFF	0x00	0xEA	0x03

Then the IC controller will send GRANTED message to GuardPointPro.

If the IC controller does not receive the ACK message from the lift controller in 400ms, it will send the command again.

If this process failed after 3 times repeat, or the message answer gets a wrong CRC, GuardPointPro displays the message:

nn dd/mm/yy hh:mn:ss Satellite alarm 'SAT-16 100' - Polling error From controller 'IC-D4 Lift #01'

When the Mitsubishi lift controller answers back correctly, GuardPointPro display the message:

nn dd/mm/yy hh:mn:ss Satellite alarm 'SAT-16 100' - Com OK From controller 'IC-D4 Lift #01'