

SeedStudio MR24FDB1 Presence radar API

Packet structure

Start Code	Length		Group	Class	Function	Data	CRC	
	Low	High					Low	High
1 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte	N Bytes	1 Byte	1 Byte

Start code = 0x55

$$\begin{aligned} \text{Length} &= \text{Length} + \text{Group} + \text{Class} + \text{Function} + \text{Data} + \text{CRC} \\ &= 2 + 1 + 1 + 1 + 1 + N + 2 \\ &= 7+N \end{aligned}$$

CRC computed over all bytes including start code but excluding CRC

Get commands

Get commands sends request for information, the data is returned in a Responce packet

Class Name	Code	Group Name	Code	Function Name	Code	Data	Description
Get	0x01						
		Identification	0x01	Get identifying information from module			
				Device Id	0x01		Get device Id
				Software Ver	0x02		Get software version
				Hardware Ver	0x03		Get hardware version
				Protocol Ver	0x04		Get protocol version
		Sensor	0x03	Get Sensor / Radar related information			
				Presence	0x05		Get presence
				Movement	0x06		Get movement strength
		System	0x05	System related parameters			
				Sensistivity	0x0C		Get sensitivity setting
				Scene	0x10		Get scene setting
				Unoccupied Timer	0x12		Get unoccupied timer value
		Other	0x06	Other parameters			
				Fall enable state	0x08		Get status of fall enable switch
				Fall Warning Time	0x0C		Get fall warning time setting
				Fall Sensitivity	0x0E		Get fall sensitivity setting

Set commands

Set commands write data, returns a response packet

Class Code Name		Group Name	Code	Function Name	Code	Data	Description
Set	0x02						
		System	0x04	System Parameters			
				Sensitivity	0x0C	0x01-0x0A	Set sensitivity, Higher value more sensitive
				Scene	0x10	0x00-0x06	Set scene
						0x00	Default
						0x01	Area Detection
						0x02	Bathroom
						0x03	Bedroom
						0x04	Living Room
						0x05	Office
						0x06	Hotel
				Unoccupied Timer	0x12		Get unoccupied timer value
						0x00	Disable
						0x01	10 Sec
						0x02	30 Sec
						0x03	1 Min
						0x04	2 Min
						0x05	5 Min
						0x06	10 Min
						0x07	30 Min
						0x08	60 Min
		Other	0x05				
				Reboot	0x04		Reboot module
				Start Upgrade	0x08	4 to N bytes	Start Firmware upgrade
						4 Bytes	Firmware Size
						N Bytes	Version
				Upgrade Packet	0x09	4 - 1024 Bytes	Upgrade packet
						4 Bytes	Offset
						N Bytes	Data
				End Of Upgrade	0x0A	0x0F	Signal end of upgrade
				Fall Enable	0x0B	1 Byte	Enable / Disable fall function
						0x00	Disable
						0x01	Enable
				Fall Warning time	0x0C	0x01-0x09	Set timing of fallwarning
						0x00	1 Min
						0x01	2 Min
						0x02	3 Min
						0x03	4 Min
						0x04	5 Min
						0x05	6 Min
						0x06	7 Min
						0x07	10 Min
						0x08	15 Min
						0x09	30 Min
				Fall Sensitivity	0x0E	0x01-0x0A	Default 0x04, Higher vale more sensitive

Response Reports

Responses to Get and Set commands

Class Name	Code	Group Name	Code	Function Name	Code	Data	Description
Response	0x02						Get identifying information from module
Identification		0x01		Device Id	0x01	12 Bytes	Device Id
				Software Ver	0x02	10 Bytes	Software version
				Hardware Ver	0x03	8 Bytes	Hardware version
				Protocol Ver	0x04	8 Bytes	Pprotocol version
Sensor		0x03		Sensor / Radar related information			
				Presence	0x05	3 Bytes	Presence
						0x00 FF FF	No Presence detected
						0x01 00 FF	Stationary presence
						0x01 01 01	Moving precence
				Movement	0x06	4 Bytes float	Movement strength
System		0x04		System related			
				Sensitivity	0x0C	0x01 - 0x0A	Sensitivity (0x07 default at startup)
				Scene	0x10	0x00 - 0x06	Scene, see Set command above for details
				Unoccupied Timer	0x12	0x00 - 0x08	Unoccupied timeout value, see Set command above
Other		0x05		Other Reports			
				Upgrade Start ACK	0x08		ACK/NACK on Upgrade Start
						0x00	Fail
						0x01	Success
				Upgrade Pkt ACK	0x09	0x0F	ACK after each packet received
				Fall Enable	0x0B		Fall Enable state
						0x00	Disable - Fall detection off
						0x01	Enable - Fall detection enabled
				Fall Warning Time	0x0C	0x00 - 0x06	Fall warning time setting, See Set command above
				Fall Sensitivity	0x0E	0x01 - 0x0A	Get fall sensitivity setting

Reports

Responses to Get and Set commands

Class Name	Code	Group Name	Code	Function Name	Code	Data	Description
Report	0x04						
Identification		0x01					Get identifying information from module
				Upgrade Complete	0x02		Reported after successful upgrade
Sensor		0x03					Sensor / Radar related information
				Presence	0x05	3 Bytes	Presence
						0x00 FF FF	No Presence detected
						0x01 00 FF	Stationary presence
						0x01 01 01	Moving presence
				Movement	0x06	4 Bytes float	Movement strength
				Location	0x07	3 Bytes	Location or Direction of movement
						0x01 01 01	No presence or movement detected
						0x01 01 02	Close
						0x01 01 03	Far
						0x01 01 04	Approaching
						0x01 01 05	Leaving
Other		0x05					System related parameters
				Heartbeat	0x01	3 Bytes	Heartbeat presence detection
						0x00 FF FF	No presence detected
						0x01 00 FF	Stationary
						0x01 01 01	Movement
				Abnormal Reset	0x02	0x0F	Module crashed and rebooted

Fall Reports

Sent if Fall Enable is set and a fall is detected

Class Name		Group Name	Function Name	Code	Data	Description
Fall	0x004	Alarm	Fall Alarm	0x01	0x01 - 0x02	Fall alarm
					0x00	Suspected fall
					0x01	Real fall
					0x02	No Fall
			Fall Warning	0x03	0x00 - 0x04	Fall Warning count