

### MR24FDB1 Frame Structure

Name	Start Code	Length Of data		Group	Class	Function	Data	CRC	
Seed Name		Length_L	Length_H	Command	Address 1	Address 2		crc16_L	crc16_H
Alternate seed name				Function Code	Function Class	Adress Code2			
Size	1 byte	1 byte	1 Byte	1 Byte	1 Byte	1 Byte	n Bytes	1 Byte	1 Byte

## Get Commands

Get Commands sends request for data. Module reports back with a Response packet

Function Group		Function Class		Function		Data	Notes
Name	Code	Name	Code	Name	Code		
Get	0x01						[Read] Get information, data reported back in response packet
		Identification	0x01				[Reporting Module Identification]
				Device id	0x01		Report device id
				Software	0x02		Report software version
				Hardware	0x03		Report hardware version
				Protocol	0x04		Report protocol version
		Radar info	0x03				Radar related information
				Presence	0x05		Report Presence
				Movement	0x06		Report movement strength
		System Params	0x04				System parameters
				Sensitivity	0x0C		Report sensitivity setting (threshold?)
				Scene	0x10		Report scene setting
		Fall Params	0x05				Fall Radar Related parameters
				Fall Function	0x0B		Report state of fall function
				Fall Warning Time	0x0C		Report fall warning time setting
				Fall Sensitivity	0x0E		Report fall sensitivity setting

## Set Commands

Set Commands write data to the module. Modul responds with corresponding response packet

Function Group		Function Class		Function		Data	Notes
Name	Code	Name	Code	Name	Code		
Set	0x02	Set parameters [Copy Order]					
		System Parameter	0x04	System parameters			
				Sensitivity	0x0C	0x01-0x0A	Set sensitivity [Threshold Gear]
				Scene	0x10		Set Scene
						0x00	Default
						0x01	Area Detection
						0x02	Bathroom
						0x03	Bedroom
						0x04	Living room
						0x05	Office
						0x06	Hotel
		Other Functions	0x05	Other parameters			
				Reboot	0x04		Reboot module
				Start Upgrade	0x08		Start firmware upgrade
						4 Bytes	Size of Firmware
						n bytes	Firmware version
				Upgrade Packet	0x09		Upgrade packet
						4 Bytes	Packet Offset
						1024 Bytes	Packet Data
				End Of Upgrade	0x0A	0x0F	Signal end of Upgrade
				Fall Enable	0x0B		Turn Fall function
						0x00	Disable
						0x01	Enable
				Fall Warning Time	0x0C		Set timing of fall warning
						0x00	1 Minute
						0x01	2 Minutes
						0x02	3 Minutes
						0x03	4 Minutes
						0x04	5 Minutes
						0x05	6 Minutes
						0x06	7 Minutes
						0x07	10 min
						0x08	15 min
						0x09	30 min
				Fall Sensitivity	0x0E	0x01 - 0xA	Default 0x04 , Higher → more sensitive

# Reponce Reports

Module responses to Get and Set commands

Function Group		Function Class		Function		Data	Notes
Name	Code	Name	Code	Name	Code		
Response	0x03	[Passive reporting] Responses to Get and Set					
		Identification	0x01				
				Device ID	0x01	12 Bytes	Device Identification (ASCII ?)
				Software Version	0x02	10 Bytes	Software Version (ASCII ?)
				Hardware Version	0x03	8 Bytes	Hardware Version (ASCII ?)
				Protocol Version	0x04	8 Bytes	Protocol Version (Binary ?)
		Radar info	0x03	Radar related responses			
				Presence	0x05	3 Bytes	[Enviroment]
						00 FF FF	Unoccupied
						01 00 FF	Stationary
						01 01 01	Movement
				Movement Intensity	0x06	4 Byte Float	[Signs Parameters]
		System Info	0x04	System related responses			
				Sensitivity	0x0C	0x01-0x0A	Current Sensitivity Setting (0x7 Default at startup)
				Scene Setting	0x10	0x01-0x05	Current Scene Setting (0x00 Default at startup)
		Other Info	0x05	Other Responses			
				Upgrade ACK	0x08		ACK/NACK response on Upgrade Start
						0x00	Fail
						0x01	Success
				Feedback OTA	0x09	0x0F	ACK respons after each packet received
				Fall Function Switch	0x0B		Fall Function enabled state
						0x00	Off - Fall function turned off
						0x01	On - Fall Function enabled (Default at startup)
				Fall Warning Time	0x0C	0x00 - 0x06	Current setting of fall warning time
						0x00	1 Minute
						0x01	2 Minutes
						0x02	3 Minutes
						0x03	4 Minutes
						0x04	5 Minutes
						0x05	6 Minutes
						0x06	7 Minutes
						0x07	10 min
						0x08	15 min
						0x09	30 min
				Fall Sensitivity	0x0E	0x01 - 0x0a	Current setting of fall sensitivity (0x04 Default at startup_

## Reports

Continuous periodic reports sent out by module at varying events / times

Function Group		Function Class		Function		Data	Notes
Name	Code	Name	Code	Name	Code		
Reports	0x04	Periodic Reports [Proactive Reports]					
		Identification	0x01				
				Software Version	0x02		Software upgrade complete reported after successful upgrade
		Radar	0x03				
				Presence	0x05	3 Bytes	Presence detection [Environment]
						00 FF FF	None [Unoccupied]
						01 00 FF	Presence [Someone is stationary]
						01 01 01	Movement [Some people exercise]
				Movement Strength	0x06	4 bytes Float	[Signs Parameters]
				Location / Direction	0x07	3 Bytes	Location Direction of detected movement [Approaching Away]
						01 01 01	None
						01 01 02	Close [Close to]
						01 01 03	Away [Stay Away]
						01 01 04	Unknown but observed (Vigorous movement / transverse ?)
						01 01 05	Unknown but observed
		Other Info	0x05				
				Heartbeat	0x01		Presence detection (Heartbeat / Breathing / Micro movments?)
						00 FF FF	Unoccupied
						01 00 FF	Stationary [Someone is stationary]
						01 01 01	Movement [Some people exercise]
				Abnormal Reset	0x02	0x0F	

## Fall reports

Module sends fall reports when fall detected and if Fall Enable is set

Function Group		Function Class		Function		Data	Notes
Name	Code	Name	Code	Name	Code		
Fall	0x06	Fall Radar reports					
		Alarm	0x01				
		Fall Alarm		0x01			
				0x00	Suspected Fall		
				0x01	Real Fall		
				0x02	No Fall		
		Fall Warning		0x02	0x00 - 0x04	Fall Warning count, 0 to 4	