EZSnsRF INSTEON Messages/Commands

The following information is intended to aid in programming a PC application to support EZSnsRF The comprehensive INSTEON command set was established with and certified by SmartLabs to ensure interoperability and future expansion. Manufacturers of INSTEON applications follow this command set to ensure maximum customer satisfaction with INSTEON products. In the tables that follow, the column heading **SE DAB** denotes whether the command is Standard-length (**S**) or Extended-length (**E**), and whether it is a Direct (**D**), ALL-Link (**A**), or Broadcast (**B**) command. EZSnsRF assigned codes by SmartLabs are: DevCat: 0x07, SubDevCat: 0x05.

INSTEON Standard-Length Direct Messages/Commands

Command Name	SE DAB	Cmd 1	Cmd 2	Description
Assign to ALL-Link Group	**SD**	**0x01**	**0x00 - 0xFF** Group Number	Used during INSTEON device linking session. Assigns a status snapshot to an ALL-Link group.
Delete from ALL-Link Group	**SD**	**0x02**	**0x00 - 0xFF** Group Number	Used during unlinking session. Deletes a status snapshot from an ALL-Link group.
Product Data Request	**SD**	**0x03**	**0x00**	EZSNSRF responds with an Extended-length **Product Data Response** message.
FxName Request	**SD**	**0x03**	**0x01**	EZSNSRF responds with an Extended-length **FxName** message (string is EZSnsRF.)
Enter Link Mode	**SD**	**0x09**	**0x00 - 0xFF** Group Number	Enters linking mode. Use to add links.
Enter Unlink Mode	**SD**	**0x0A**	**0x00 - 0xFF** Group Number	Enters unlinking mode. Use to delete links.
ID Request	**SD**	**0x10**	**0x00**	EZSNSRF first returns an ACK message, then it sends a *SET Button Pressed* Broadcast message, but it does not enter Linking Mode.
Set Address MSB	**SD**	**0x28**	**0x00—0xFF** High byte of 16-bit address	Sets Most-significant byte of EEPROM address for peek or poke. Set to 0x00 for access to EZSNSRFxx.
Poke (see note 2)	**SD**	**0x29**	**0x00 - 0xFF** value of parameter to store	Puts the byte in Cmd 2 into the parameter **RAM** location pointed to by PARPTR which is then incremented. **To make permanent, follow this with the "Load EEPROM from RAM" command.**
Peek (see note 1)	**SD**	**0x2B**	**0x00 - 0xFF** PARPTR value	Sets Cmd 2 value into PARPTR. Cmd 2 of the ACK message returns the byte pointed to PARPTR.
EZSNSRF Control	**SD**	**0xF0**	Subcommand	
			0x00 Load Initialization Values	Resets EZSNSRF to its factory default settings
			0x01 Write a code record	Writes the code record buffer area into permanent memory based on the last code received.
			0x02 Read a code record	Reads a code record from permanent memory into the record buffer based on the last code received.
			0x03 Get a code record	Respond with an extended command containing the code record buffer based on the last code received.
Specific Code Record Read	**SD**	**0xF1**	**0x00—0x13** The record number.	Solicit an extended message with the specified code record

INSTEON Extended-Length Direct Messages/Commands

Command Name	SE DAB	Cmd 1	Cmd 2	Description
Product Data Response	**ED**	**0x03**	**0x00**	**Extended Data as follows**: **D1**: 0x00, **D2-D4**: Product Key, **D5**: DevCat, **D6**: SubCat, **D7**: 0xFF, **D8**: 0xFF. **D9-D14**: don't care
FX Username Response	**ED**	**0x03**	**0x01**	**Extended data as follows: D1—D8**: Code FX User Name, **D9—D14**: don't care
Device Text String Response	**ED**	**0x03**	**0x02**	D1-D14 contain the ASCII device text string—Either null delimited or all 14 bytes
Code record request Response	**ED**	**0xF1**	**0x00—0x13** (record number)	D1—D8 Code record data
Specific Code Record Write	**ED**	**0xF2**	**0x00—0x13** The record number.	Write the record with the data in D1-D8

INSTEON Standard-Length Broadcast Messages/Commands

SET Button Pressed Slave	**SB**	**0x01**	None	Linking Mode as a Slave device
Status Change	**SB**	**0x27**	**Bits 0-5:** 0x00—0x13—Code Record number	A code was received for which an **unlinked** record exists. See below for message format. The Command 2 byte encodes the Code Record (virtual input) number that was activated.

Notes:

1) **EZSNSRF Memory Layout:** The range of fixed (EEPROM) and volatile (RAM) locations accessible for Peek and Poke (if applicable) correspond to the map on the right. The "rw" notation indicates whether the location is read only ("r"), or both readable and writeable ("rw") when followed with the "RAM to EEPROM" command. Note that some locations are directly accessible with Standard Direct Commands. Also note that the MSB of the peek address must be first set to 0x00 for these locations to be accessible.

2) **ACTIVE CODE RECORD BUFFER layout**: The internal database holds a record for each recognized (learned) code. The code being acted upon is held in a buffer that is accessible (rw). Commands are available to read a given database record into this buffer, or to write the buffer into a given database record.

An INSTEON group command is sent for a code with a linked record (both "in use" and "linked" flags set). An INSTEON broadcast message is sent for a code where only the "in use" flag is set.

Address	Description (rw)
0x00	Special Register (CONFIGURATION) (r)
0x02	Firmware revision (r)
0x03	Special Register (EEPROM LOADED) (r)
0x04—0x0B	Active Code Record Buffer—See below (rw)

Byte	Description (all bytes are rw)
0	Flags: Bit 7—Set if the record is in use Bit 6—Set if the record has an INSTEON link Bits 0:4—Timer in .5 sec increments
1	CodeL: LSB of Code
2	CodeH: MSB of Code (only 4 bits used)
3	Group: The assigned INSTEON group (1-20)
4	Cmd1H: Command 1 sent on ON signal (off to on)
5	Cmd1L: Command 2 sent on ON signal (off to on)
6	Cmd2H: Command 1 sent on OFF signal (on to off)
7	Cmd2L: Command 2 sent on OFF signal (on to off)

Broadcast Message Format

Byte	Field	Example	Description
1-3	FROM Address	00.22.34	INSTEON address of the device sending the broadcast
4-6	TO Address	03.0d.ff	The TO address field contains the Device Type (03.0d) followed by FF.
7	Flags	1000xxxx	Indicates type of message
8	Command 1	0x27	Code to indicate Status Change Broadcast message
9	Command 2	**Bits 0-5:** 0x00—0x13—Code Record number	The Command 2 byte encodes the Code Record (virtual input) number that was activated.

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