

EZX10RF INSTEON Messages/Commands



The following information is intended to aid in programming a PC application to support EZX10RF. 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. EZX10RF assigned codes by SmartLabs are: DevCat: 0x03, SubDevCat: 0x0d.

| 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 | EZX10RF responds with an Extended-length Product Data Response message. |
| Device Text String Request | SD | 0x03 | 0x02 | EZX10RF responds with an Extended-length Device Text String Response message. |
| 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 | EZX10RF first returns an ACK message, then it sends a <i>SET Button Pressed</i> 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 EZX10RFxx. |
| 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. |
| EZX10RF Control | SD | 0xF0 | Subcommand | |
| | | | 0x00 Load Initialization Values | Resets EZX10RF 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 | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|---|--|---------|--------------------------------|----|--|----|------------------------------------|----|------------------------|----|--|-------|---|-------|--|---|---|---|---|
| Command Name | SE DAB | Cmd 1 | Cmd 2 | Description | | | | | | | | | | | | | | | | | | |
| 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 Bits 6-7: 00: X10 OFF command 01: X10 DIM command 10: X10 ON command 11: X10 BRIGHT command | A code was received for which an unlinked record exists. See below for message format. The Command 2 byte encodes the type of command received and the Code Record (virtual input) number that was activated. | | | | | | | | | | | | | | | | | | |
| Notes: | | | | | | | | | | | | | | | | | | | | | | |
| 1) 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 writable ("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. | | <table border="1"> <thead> <tr> <th>Address</th> <th>Description (rw)</th> </tr> </thead> <tbody> <tr><td>00</td><td>Last X10 House/Unit Code received (r)</td></tr> <tr><td>01</td><td>Last X10 Command Code received (r)</td></tr> <tr><td>02</td><td>Firmware revision (r)</td></tr> <tr><td>03</td><td>Special Register (EEPROM LOADED) (r)</td></tr> <tr><td>04-35</td><td>X10 Address Filter Register (16 X 16 bits array of 32 bytes).</td></tr> <tr><td>36-43</td><td>Active Code Record Buffer—See below (rw)</td></tr> </tbody> </table> | | | Address | Description (rw) | 00 | Last X10 House/Unit Code received (r) | 01 | Last X10 Command Code received (r) | 02 | Firmware revision (r) | 03 | Special Register (EEPROM LOADED) (r) | 04-35 | X10 Address Filter Register (16 X 16 bits array of 32 bytes). | 36-43 | Active Code Record Buffer—See below (rw) | | | | |
| Address | Description (rw) | | | | | | | | | | | | | | | | | | | | | |
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| 36-43 | Active Code Record Buffer—See below (rw) | | | | | | | | | | | | | | | | | | | | | |
| 2) ACTIVE CODE RECORD BUFFER layout: The internal database holds a record for each recognized (learned) X10 House/Unit 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. | | <table border="1"> <thead> <tr> <th>Byte</th> <th>Description (all bytes are rw)</th> </tr> </thead> <tbody> <tr><td>0</td><td>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</td></tr> <tr><td>1</td><td>X10 Code: House/Unit</td></tr> <tr><td>2</td><td>X10 Command (Not Used)</td></tr> <tr><td>3</td><td>Group: The assigned INSTEON group (1-20)</td></tr> <tr><td>4</td><td>Cmd1H: Command 1 sent on ON signal (off to on)</td></tr> <tr><td>5</td><td>Cmd1L: Command 2 sent on ON signal (off to on)</td></tr> <tr><td>6</td><td>Cmd2H: Command 1 sent on OFF signal (on to off)</td></tr> <tr><td>7</td><td>Cmd2L: Command 2 sent on OFF signal (on to off)</td></tr> </tbody> </table> | | | 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 | X10 Code: House/Unit | 2 | X10 Command (Not 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) |
| Byte | Description (all bytes are rw) | | | | | | | | | | | | | | | | | | | | | |
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| 1 | X10 Code: House/Unit | | | | | | | | | | | | | | | | | | | | | |
| 2 | X10 Command (Not Used) | | | | | | | | | | | | | | | | | | | | | |
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| 6 | Cmd2H: Command 1 sent on OFF signal (on to off) | | | | | | | | | | | | | | | | | | | | | |
| 7 | Cmd2L: Command 2 sent on OFF signal (on to off) | | | | | | | | | | | | | | | | | | | | | |
| 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. | | | | | | | | | | | | | | | | | | | | | | |

| 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 Bits 6-7: 00: X10 OFF command 01: X10 DIM command 10: X10 ON command 11: X10 BRIGHT command | The Command 2 byte encodes the type of command received and the Code Record (virtual input) number that was activated. |



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