RROEM04

(USB & Ethernet)

Communication Protocol V2.2

By

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Definitions

Request Frame Length / Response Frame Length

It is the number of bytes the specific frame is having. Frame length shall be calculated by adding total number of bytes starting from "Command Code" field to "Cyclic redundancy check field (CRC)" field. If a specific request is not having any data, the frame length for request and response will vary according to it.

Command Code

Command code is the code of specific command, which user wants to perform. Table-1, Table-2, Table-3, Table-4 and Table-5 and are having the list of different command codes supported by RRHFOEM04 (USB & Ethernet Kits).

ISO 15693 Command Code Descriptions

Sr. No.	Command Code	Description
1.	1001Hex	Single Slot Inventory
2.	1002Hex	16 Slot Inventory
3.	1003Hex	Select
4.	1004Hex	Quiet
5.	1005Hex	Reset
6.	1006Hex	Read Single Block
7.	1007Hex	Write Single Block
8.	1008Hex	Lock Block
9.	1009Hex	Read Multiple Blocks
10.	100AHex	Write AFI Flag
11.	100BHex	Lock AFI Flag
12.	100CHex	Write DSFID Flag
13.	100DHex	Lock DSFID Flag
14.	100EHex	Get System Information
15.	100FHex	Get Multiple Block Security Status
16.	1101Hex	Read EAS Flag
17.	1102Hex	Set EAS Flag
18.	1103Hex	Reset EAS Flag
19.	1104Hex	Lock EAS Flag
20.	1105Hex	Get Random Number
21.	1106Hex	Set Password
22.	1107Hex	Write Password
23.	1108Hex	Lock Password
24.	1109Hex	64Bit Password Protection
25.	110AHex	Page Protect
26.	110BHex	Lock Page Protect
27.	110CHex	Destroy
28.	110DHex	Enable Privacy Protection
29.	1110Hex	EAS/AFI Password Protection

30.	1111Hex	Write EAS ID
31.	1112Hex	Get NXP System Information
32.	1113Hex	Stay Quite Persistent
33.	1114Hex	Read Signature
34.	1201Hex	Write two Blocks(TAGIT)
35.	1202Hex	Lock Two Blocks(TAGIT)
36.	1F02Hex	Write Multiple Blocks

Table-1 (ISO 15693 Command Codes)

ISO 14443A Command Code Descriptions

Sr. No.	Command Code	Description
1.	2001Hex	Request
2.	2002Hex	Wake up
3.	2006Hex	Anti-collision
4.	2004Hex	Select
5.	2005Hex	Halt
6.	2101Hex	Mifare Authenticate
7.	2102Hex	Mifare Read
8.	2103Hex	Mifare Write
9.	2201Hex	Mifare UL Read
10.	2202Hex	Mifare UL Write
11.	2F01Hex	Inventory
12.	2F02Hex	Select Card
13.	2F03Hex	Select Any Card

Table-2 (ISO 14443A Command Codes)

RFID System Level Command Code Descriptions

Sr. No.	Command Code	Description
1.	0001Hex	Low Power Mode
2.	0002Hex	Normal Power Mode
3.	0003Hex	Set RF Power
4.	0004Hex	RF turn ON
5.	0005Hex	RF turn OFF

Table-3 (RFID System Level Command Codes)

RR System Level Command Code Descriptions

Sr. No.	Command Code	Description
1.	F000Hex	Get Reader Information
2.	F001Hex	Buzzer (Beep)
3.	F002Hex	Additional Frame (Valid only in USB and ISO15693 Protocol)
4.	FF03Hex	Reset Device / Restart Device

Table-4 (RR System Level Command Codes)

RROEM04 Ethernet Additional Command Code Descriptions

Sr. No.	Command Code	Description
1.	F007Hex	Enable 15693 Auto Inventory
2.	F008Hex	Enable 14443 Auto Inventory
3.	F009Hex	Disable All Auto Inventory
4.	F00AHex	Change Device IP
5.	F00BHex	Change Server Port
6.	F00CHex	Change Host IP
7.	F00DHex	Change Client Port
8.	F00EHex	Change Default Gateway
9.	F00FHex	Change Primary DNS
10.	F010Hex	Change Secondary DNS
11.	F011Hex	Change MAC Address
12.	F012Hex	Change Subnet Mask
13.	F013Hex	Change NBIOS Name
14.	F014Hex	Get TCP Info
15.	F015Hex	Turn Off Buzzer (Also available in USB)
16.	F016Hex	Turn On Buzzer (Also available in USB)
17.	F019Hex	Relay On Off
18.	F021Hex	Set Auto Inventory Status
19.	F022Hex	Relay Set (Auto Off)
20.	F023Hex	Get Auto Inventory Status
21.	F024Hex	Get RF Power
22.	F025Hex	Register(Mifare Tag Filtering)
23.	F026Hex	Get Default TCP Information
24.	F027Hex	Set Default TCP Information
25.	F028Hex	Reset to Default TCP Configuration

Table-5 (Ethernet Additional Command Codes)

Flags

Flags specify the action to be performed by VICC and whether the corresponding fields are present or not.

Sr. No.	Flag value	Flag type
1.	02Hex	Data rate flag
2.	20Hex	Address flag
3.	10Hex	Select flag
4.	40Hex	Option flag
5.	04Hex	Inventory flag

Table-6 (Flags)

Custom Request Data / Custom Response Data

Custom request or response data depends on the specific command.

Cyclic Redundancy Check

Cyclic redundancy check field is used to ensure that there is no data loss in the communication. It will be calculated for all the data from "Request Frame Length" or "Response Frame Length" frame to "Custom Request Data" or "Custom Response Data". In case the request or response is not having any custom data, it shall be calculated up to "Command Code" field. CRC is of 2 byte long and its structure is as shown below in Table-7 and the logic to calculate the cyclic redundancy check is provided in Table-8.

Cyclic redundancy check (16 bits)	
LSB (8 bit)	MSB (8bit)

Table-7 (Cyclic Redundancy Check Structure)

```
unsigned short CalcCRC(unsigned char data[], unsigned char len)
{
    unsigned short crc = 0xFFFF;
    unsigned char count, bitCount;

    for(count = 0; count < len; count++)        // Loop for each byte
    {
        crc ^= data[count];                     // Calc CRC main logic
        for(bitCount = 0; bitCount < 8; bitCount++)
            crc = (crc & 0x8000) ? (crc << 1) ^ 0x1021 : (crc << 1);
    }
    return(~crc);                               // Invert CRC before returning
}
```

Table-8 (Cyclic Redundancy Check Logic)

EAS Flag State

EAS flag is either set or reset. User can change the state of EAS flag using "Set EAS Flag" or "Reset EAS Flag" functions. "Check EAS Flag State" function can be used to get the current state of EAS flag. Table-9 is describing the possible states of EAS flag.

Sr. No.	Value	Description
1.	00Hex	EAS Flag is Reset (Inactive)
2.	01Hex	EAS Flag is Set (Active)

Table-9 (EAS Flag States)

DSFID

The full form of DSFID is Data Storage Format Identifier. It can be used when different tags are having the data in different format.

AFI

Application family identifier can be used if same type of tag is used for different applications, such as library and retail. User can read the AFI value and based on that, he can distinguish the tags used for different applications.

Error Code

Error code field includes and provides information about the error that occurred. The reader always returns FFFFHex error code.

Basic Communication Frame Format

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	XXXXHex
3.	Custom Request Data	X	XX...XXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	XXHex
2.	Command Code	2	XXXXHex
3.	Error Code	2	XXXXHex
4.	Custom Response Data	X	XX...XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

ISO 15693 Commands

Single Slot Inventory

Request (With AFI)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	1001Hex
3.	Flags	1	36Hex
4.	AFI	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (Without AFI)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1001Hex
3.	Flags	1	26Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	XXHex
2.	Command Code	2	1001Hex
3.	Error Code	2	XXXXHex
4.	Total no. of Received UID	1	XXHex
5.	UID	X	XXXX...XXXXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error code is FFFFHex then the length will be limited to 05Hex and also field 4 & 5 will be absent else error code is 0000Hex.
Total no. of Received UID: The total number of cards that exist in the reading area.
UID: UID of cards that are detected (Total no. of Received UIDs * 8 byte).

16 Slot Inventory

Request (With AFI)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	1002Hex
3.	Flags	1	16Hex
4.	AFI	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (Without AFI)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1002Hex
3.	Flags	1	06Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	XXHex
2.	Command Code	2	1002Hex
3.	Error Code	2	XXXXHex
4.	Total No. of Received UID	1	XXHex
5.	UID	X	XXXX...XXXXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error code is FFFFHex then the length will be limited to 05Hex and also field 4 and 5 will be absent else error code is 0000Hex.
Total no. of Received UID: The total number of cards that exist in the reading area.
UID: UID of cards which are detected (Total no. of Received UIDs * 8 byte).

Select

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	1003Hex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1003Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Flags(22Hex): Address flag and Data rate flag are set.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.
UID: UID of card to be selected.

Quiet

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	1004Hex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1004Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Flags (22Hex): Address flag and Data rate flag are set.
UID: UID of card to be set Quit.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Reset

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1005Hex
3.	Flags	1	02Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1005Hex
3.	Flags	1	12Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	1005Hex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1005Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.
UID: UID of card to be reset.

Read Single Block

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	06Hex
2.	Command Code	2	1006Hex
3.	Flags	1	02Hex or 42Hex
4.	Block Length	1	XXHex
5.	Block Number	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	06Hex
2.	Command Code	2	1006Hex
3.	Flags	1	12Hex or 52Hex
4.	Block Length	1	XXHex
5.	Block Number	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0EHex
2.	Command Code	2	1006Hex
3.	Flags	1	22Hex or 62Hex
4.	UID	8	XXXXXXXXHex
5.	Block Length	1	XXHex
6.	Block Number	1	XXHex
7.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	XXHex
2.	Command Code	2	1006Hex
3.	Error Code	2	XXXXHex
4.	Response Flag	1	XXHex
5.	Block Security Status	1	XXHex
6.	Data	X	XX…XX Hex
7.	Cyclic Redundancy Check	2	XXXXHex

Block Length: Number of bytes to be read.
Block Number: Block to be read. (Value lies between 00Hex to FFHex).
Error Code: If error code is FFFFHex then the length will be limited to 05Hex and Also field 4,5,6 will be absent else If error code is 0000Hex .
UID: UID of card to be read (only if address flag is set).
Response Flag: By default value is 00.
Block Security Status: This appears only when Option flag (0x40) is set.

Write Single Block

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	06+Block Len Hex
2.	Command Code	2	1007Hex
3.	Flags	1	02Hex or 42Hex
4.	Block Length	1	XXHex
5.	Block Number	1	XXHex
6.	Data	X	XX..XX Hex
7.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	06+Block Len Hex
2.	Command Code	2	1007Hex
3.	Flags	1	12Hex or 52Hex
4.	Block Length	1	XXHex
5.	Block Number	1	XXHex
6.	Data	X	XX..XX Hex
7.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0E + Block Len Hex
2.	Command Code	2	1007Hex
3.	Flags	1	22Hex or 62Hex
4.	UID	8	XXXXXXXXHex
5.	Block Length	1	XXHex
6.	Block Number	1	XXHex
7.	Data	X	XX…XXHex
8.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1007Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Block Length: Number of bytes to be written.
Block Number: Block to be written. (Value lies between 00Hex to FFHex).
Data: The data need be written.
UID: UID of card to be write (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Lock Block

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	1008Hex
3.	Flags	1	02Hex or 42Hex
4.	Block Number	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	1008Hex
3.	Flags	1	12Hex or 52Hex
4.	Block Number	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0DHex
2.	Command Code	2	1008Hex
3.	Flags	1	22Hex or 62Hex
4.	UID	8	XXXXXXXXHex
5.	Block Number	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1008Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Block Number: Block to be lock. (Value lies between 00Hex to FFHex).
UID: UID of card to be lock (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Read Multiple Blocks

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	07Hex
2.	Command Code	2	1009Hex
3.	Flags	1	02Hex or 42Hex
4.	Block Length	1	XXHex
5.	Block Number	1	XXHex
6.	Total Block	1	XXHex
7.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	07Hex
2.	Command Code	2	1009Hex
3.	Flags	1	12Hex or 52Hex
4.	Block Length	1	XXHex
5.	Block Number	1	XXHex
6.	Total Block	1	XXHex
7.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0FHex
2.	Command Code	2	1009Hex
3.	Flags	1	22Hex or 62Hex
4.	UID	8	XXXXXXXXHex
5.	Block Length	1	XXHex
6.	Block Number	1	XXHex
7.	Total Block	1	XXHex
8.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	6+ (Block No. * Block Len)Hex
2.	Command Code	2	1009Hex
3.	Error Code	2	XXXXHex
4.	Flags	1	XXHex
5.	Data	X	XX…XX Hex
6.	Cyclic Redundancy Check	2	XXXXHex

Block Length: Number of bytes to be read.
Block Number: Blocks to be read. (Value lies between 00 to FFHex).
Total Block: Number of simultaneous block to read.
Data: The data which is read from blocks.
UID: UID of card to be read (only if address flag is set).
Error Code: If error code is FFFFHex then the length will be limited to 05Hex and also field 4, 5 will be absent.

Write AFI Flag

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	100AHex
3.	Flags	1	02Hex or 42Hex
4.	AFI	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	100AHex
3.	Flags	1	12Hex or 52Hex
4.	AFI	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0DHex
2.	Command Code	2	100AHex
3.	Flags	1	22Hex or 62Hex
4.	UID	8	XXXXXXXXHex
5.	AFI	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	100AHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of card whose AFI needs to be written (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Lock AFI Flag

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	100BHex
3.	Flags	1	02Hex or 42Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	100BHex
3.	Flags	1	12Hex or 52Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	100BHex
3.	Flags	1	22Hex or 62Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	100BHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of card whose AFI needs to be lock (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Write DSFID Flag

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	100CHex
3.	Flags	1	02Hex or 42Hex
4.	DSFID	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	100CHex
3.	Flags	1	12Hex or 52Hex
4.	DSFID	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0DHex
2.	Command Code	2	100CHex
3.	Flags	1	22Hex or 62Hex
4.	UID	8	XXXXXXXXHex
5.	DSFID	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	100CHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of card whose DSFID needs to be written (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Lock DSFID Flag

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	100DHex
3.	Flags	1	02Hex or 42Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	100DHex
3.	Flags	1	12Hex or 52Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	100DHex
3.	Flags	1	22Hex or 62Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	100DHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of card whose DSFID needs to be lock (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Get System Information

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	100EHex
3.	Flags	1	02Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	100EHex
3.	Flags	1	12Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	100EHex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	06 + Info Len Hex
2.	Command Code	2	100EHex
3.	Error Code	2	XXXXHex
4.	Flags	1	XXHex
5.	Data	X	XX...XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of the card which is placed near the reader.
Error Code: If error code is FFFFHex then the length will be limited to 05Hex and also field 4, 5 will be absent else error code is 0000Hex.
Data: It contains UID and status of AFI & DSFID flags.

Get Multiple Block Security Status

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	06Hex
2.	Command Code	2	100FHex
3.	Flags	1	02Hex
4.	Block Number	1	XXHex
5.	No. of Total Block	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	06Hex
2.	Command Code	2	100FHex
3.	Flags	1	12Hex
4.	Block Number	1	XXHex
5.	No. of Total Block	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0EHex
2.	Command Code	2	100FHex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Block Number	1	XXHex
6.	No. of Total Block	1	XXHex
7.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	06 + Total Hex
2.	Command Code	2	100FHex
3.	Error Code	2	XXXXHex
4.	Flags	1	XXHex
5.	Data	X	XX…XX Hex
6.	Cyclic Redundancy Check	2	XXXXHex

Block Number: The Block to be read. (Value lies between 00 to FFHex).
No. of Total Block: Number of simultaneous block whose security status needs to be read.
Data: It consist block security status read from the blocks.
UID: UID of card placed near the reader (only if address flag is set).
Error Code: If error code is FFFFHex then the length will be limited to 05Hex and Also field 4, 5 will be absent else error code is 0000Hex.

Read EAS Flag

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1101Hex
3.	Flags	1	02Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1101Hex
3.	Flags	1	12Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	1101Hex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	06Hex
2.	Command Code	2	1101Hex
3.	Error Code	2	XXXXHex
4.	State	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of card whose EAS needs to be read (only if address flag is set).
Error Code: If error code is FFFFHex then the length will be limited to 05Hex and also field 4 will be absent.
State: It contains the EAS flag Status (00Hex or 01Hex).

Set EAS Flag

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1102Hex
3.	Flags	1	02Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1102Hex
3.	Flags	1	12Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	1102Hex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1102Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of card whose EAS needs to be set (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Reset EAS Flag

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1103Hex
3.	Flags	1	02Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1103Hex
3.	Flags	1	12Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	1103Hex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1103Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of card whose EAS needs to be reset (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Lock EAS Flag

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1104Hex
3.	Flags	1	02Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1104Hex
3.	Flags	1	12Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	1104Hex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1104Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of card whose EAS needs to be lock (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Get Random Number

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1105Hex
3.	Flags	1	02Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1105Hex
3.	Flags	1	12Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	1105Hex
3.	Flags	1	22Hex
4.	UID	8	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	07Hex
2.	Command Code	2	1105Hex
3.	Error Code	2	XXXXHex
4.	Random Number	2	XXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.
Random Number: it is containing two bytes. It can be any between 0000 to FFFF Hex.

Set Password

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	1106Hex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Password Identifier	1	XXHex
6.	Password	4	XX…XXHex
7.	Cyclic Redundancy Check	2	XXXXHex

Flags: 0x02, 0x12 and 0x22 and Option Flag
UID: UID of card or Tag (only if address flag(0x22) is set).
Password Identifier: There are 5 types of Password Identifier which are mentioned below.

1. Read – 0x01
2. Write – 0x02
3. Privacy – 0x04
4. Destroy – 0x08
5. EAS/AFI – 0x10

Password: it is containing 4 bytes password of tag. Default password for fresh tag is **00000000** for Read, write and EAS/AFI when **0F0F0F0F** for Privacy and Destroy

Note: *There is Internally sent Get Random Number commands by reader itself if you send Set Password Commands. So, no need to send get Random Number commands.*
This Commands will accept only Addressed and selected mode flags.
If Enable privacy is Set, then only send Tag password with Without address flag.

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1106Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Write Password

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	1107Hex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Password Identifier	1	XXHex
6.	Password	4	XX…XXHex
7.	Cyclic Redundancy Check	2	XXXXHex

The WRITE PASSWORD command enables a new password to be written into the related memory if the related old password has already been transmitted with a SET PASSWORD command and the addressed password is not locked.

Flags: 0x02, 0x12 and 0x22 and Option Flag

UID: UID of card or Tag (only if address flag(0x22) is set).

Password Identifier: There are 5 types of Password Identifier which are mentioned below.

1. **Read** – 0x01
2. **Write** – 0x02
3. **Privacy** – 0x04
4. **Destroy** – 0x08
5. **EAS/AFI** – 0x10

Password: it is containing 4 bytes password of tag. Default password for fresh tag is **00000000** for Read, write and EAS/AFI when **0F0F0F0F** for Privacy and Destroy

Note: *There is Internally sent Get Random Number commands by reader itself if you send write password Commands. So, no need to send get Random Number commands.*

This Commands will accept only addressed and selected mode flags.

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1107Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Lock Password

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	1108Hex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Password Identifier	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

The LOCK PASSWORD command enables the addressed password to be locked if the related password has already been transmitted with a SET PASSWORD command. A locked password cannot be changed.

Flags: 0x02, 0x12 and 0x22 and Option Flag

UID: UID of card or Tag (only if address flag(0x22) is set).

Password Identifier: There are 5 types of Password Identifier which are mentioned below.

1. Read – 0x01
2. Write – 0x02
3. Privacy – 0x04
4. Destroy – 0x08
5. EAS/AFI – 0x10

This Commands will accept only addressed and selected mode flags.

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1108Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

64Bit Password Protection

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	1109Hex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

The 64-bit PASSWORD PROTECTION command enables Read and Write passwords are required to get access to password protected blocks (pages).
This mode can be enabled if the Read and Write passwords have been transmitted first with a SET PASSWORD command. If the 64-bit password protection is enabled, both passwords are required for read & write access to protected blocks (pages).
Once the 64-bit password protection is enabled, a change back to 32-bit password protection (read and write password) is not possible.
Flags: 0x02, 0x12 and 0x22 and Option Flag
UID: UID of card or Tag (only if address flag(0x22) is set).
This Commands will accept only addressed and selected mode flags.

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1109Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Page Protect

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	110AHex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Block Address	1	XXHex
6.	Protection Status	1	XXHex
7.	Cyclic Redundancy Check	2	XXXXHex

Page protect command defines the access conditions for the pages.
The related passwords (Read and Write password) have been transmitted first with the SET PASSWORD command.
Flags: 0x02, 0x12 and 0x22 and Option Flag
UID: UID of card or Tag (only if address flag(0x22) is set).
Block Address: 0 to 78 where 0-19 blocks = page L and 20-78 blocks = page H.

Protection Status:

Bit	Value	Description
0	0	Page L is not read protected
	1	Page L is read protected
1	0	Page L is not write protected
	1	Page L is write protected
2	0	RFU
3	0	RFU
4	0	Page H is not read protected
	1	Page H is read protected
5	0	Page H is not write protected
	1	Page H is write protected
6	0	RFU
7	0	RFU

The information about the stored settings of the Block Address Pointer and access conditions can be read with the GET NXP SYSTEM INFORMATION command.
***Note**: If the block address is set to block 0, the entire user memory (block 0 to block 78) is defined as Page H.*
This Commands will accept only addressed and selected mode flags.

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	110AHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Lock Page Protect

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	110BHex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Block Address	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

The LOCK PAGE PROTECTION CONDITION command locks the protection pointer address and the status of the page protection conditions if the Read and Write passwords have been transmitted first with the SET PASSWORD command.
Flags: 0x02, 0x12 and 0x22 and Option Flag
UID: UID of card or Tag (only if address flag(0x22) is set).
Block Address: 0 to 78 where 0-19 blocks = page L and 20-78 blocks = page H.
The information about the stored settings of the Block Address Pointer and access conditions can be read with the GET NXP SYSTEM INFORMATION command.
***Note**: If the block address is set to block 0, the entire user memory (block 0 to block 78) is defined as Page H.*
This Commands will accept only addressed and selected mode flags.

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	110BHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Destroy

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	110CHex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Password	4	XX…XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

The DESTROY command enables the Tag Label IC to be destroyed if the Destroy password is correct. This command is irreversible, and the Tag will never respond to any command again. The DESTROY command can only be executed in addressed or selected mode.

Flags: 0x02, 0x12 and 0x22 and Option Flag
UID: UID of card or Tag (only if address flag(0x22) is set).
Password: It is Destroy password

Note: *There is not needing to send X'or Password using Random Number. Reader will get Random number by itself.*

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	110CHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Enable Privacy

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	110DHex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Password	4	XX…XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

The ENABLE PRIVACY command enables tag to be set to Privacy mode if the Privacy password is correct. The Tag will not respond to any command except GET RANDOM NUMBER and SET PASSWORD.

To get out of the Privacy status, the valid Privacy password must be transmitted to the tag with the SET PASSWORD command in None Address mode.

Flags: 0x02, 0x12 and 0x22 and Option Flag
UID: UID of card or Tag (only if address flag(0x22) is set).
Password: It is Privacy password

Note: *There is not needing to send X'or Password using Random Number. Reader will get Random number by itself.*

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	110DHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Password Protect EAS/AFI

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	1110Hex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

The PASSWORD PROTECT EAS/AFI command enables the password protection for EAS and/or AFI if the EAS/AFI password is first transmitted with the SET PASSWORD command.

Option flag set to logic 0: EAS will be password protected.
Option flag set to logic 1: AFI will be password protected.

Once the EAS/AFI password protection is enabled, it is not possible to change back to unprotected EAS and/or AFI.

Flags: 0x02, 0x12 and 0x22, option flag is Flag's 6th bit from LSB (0).
UID: UID of card or Tag (only if address flag(0x22) is set).
Password: It is Privacy password

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1110Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Write EAS ID

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	1111Hex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	EAS ID	2	XXXXHex
6.	Cyclic Redundancy Check	2	XXXXHex

The command WRITE EAS ID enables a new EAS Identifier to be stored in the corresponding configuration memory. If EAS is password protected (for Set and Reset EAS) the EAS password must be first transmitted with the SET PASSWORD command.

Flags: 0x02, 0x12 and 0x22 and Option Flag
UID: UID of card or Tag (only if address flag(0x22) is set).
EAS ID: it is Containing 2 bytes data.

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1111Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Get NXP System Information

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	1112Hex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

The command GET NXP SYSTEM INFORMATION command provides information about the IC access conditions and supported features.

Flags: 0x02, 0x12 and 0x22 and Option Flag
UID: UID of card or Tag (only if address flag(0x22) is set).
EAS ID: it is Containing 2 bytes data.

Note: *There is not needing to send X'or Password using Random Number. Reader will get Random number by itself.*

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	0CHex
2.	Command Code	2	1112Hex
3.	Error Code	2	XXXXHex
4.	Actual protection pointer address	1	XXHex
5.	Actual protection conditions for the password protection	1	XXHex
6.	Actual lock bits	1	XXHex
7.	Supported commands and features	4	XX…XXHex
8.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

• 0: feature disabled • 1: feature enabled

Actual protection conditions for the password protection

Bit	Feature
0(LSB)	Page L read password protection status
1	Page L write password protection status
2-3	RFU
4	Page H read password protection status
5	Page H write password protection status
6-7	RFU

Actual lock bits

Bit	Feature
0(LSB)	AFI Lock Bit
1	EAS Lock Bit
2	DSFID Lock Bit
3	Password protection pointer address, and access conditions lock bit
4-7	RFU

Feature flags bits

Bit	Feature
0(LSB)	User memory password protection supported
1	Counter feature supported
2	EAS ID supported by EAS ALARM command
3	EAS password protection supported
4	AFI password protection supported
5	Extended mode supported by INVENTORY READ command
6	EAS selection supported by extended mode in INVENTORY READ command
7	RFU
8	READ SIGNATURE command supported
9	Password protection for READ SIGNATURE command supported
10	STAY QUIET PERSISTENT command supported
11	RFU
12	ENABLE PRIVACY command supported
13	DESTROY command supported
14-30	RFU
31	Additional 32 bits feature flags are transmitted

Stay Quite Persistent

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0CHex
2.	Command Code	2	1113Hex
3.	Flags	1	22Hex
4.	UID	8	XX…XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

When receiving the STAY QUIET PERSISTENT command, the tag enters the persistent quiet state and will not send back a response.
Remark: The STAY QUIET PERSISTENT command provides the same behaviour as the mandatory STAY QUIET command with the only difference at a reset (power off).
The label IC will turn to the ready state, if the power off time is exceeding the persistent time.
The Tag will exit the persistent quiet state
when: • reset (power off) exceeding the persistent time,
• receiving a SELECT request. It shall then go to the Selected state.
• receiving a RESET TO READY request. It shall then go to the Ready state.

UID: UID of card or Tag

Read Signature

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	XXHex
2.	Command Code	2	1114Hex
3.	Flags	1	XXHex
4.	UID	8	XX…XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

The READ SIGNATURE command returns an IC specific, 32-byte ECC signature, to verify NXP Semiconductors as the silicon vendor. The signature is programmed at chip production and cannot be changed afterwards.

Flags: 0x02, 0x12 and 0x22 and Option Flag
UID: UID of card or Tag (only if address flag(0x22) is set).

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1114Hex
3.	Error Code	2	XXXXHex
4.	Signature	32	XX...XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Write Two Blocks (TAGIT)

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0DHex
2.	Command Code	2	1201Hex
3.	Flags	1	42Hex
4.	Block Number	1	XXHex
5.	Data	8	XX..XX Hex
6.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0DHex
2.	Command Code	2	1201Hex
3.	Flags	1	52Hex
4.	Block Number	1	XXHex
5.	Data	8	XX..XX Hex
6.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	15Hex
2.	Command Code	2	1201Hex
3.	Flags	1	62Hex
4.	UID	8	XXXXXXXXHex
5.	Block Number	1	XXHex
6.	Data	8	XX…XXHex
7.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1201Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Block Number: Blocks to be write. (Value lies between 00 to FFHex).
Data: The data need be written.
UID: UID of card to be write (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Lock Two Blocks (TAGIT)

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	1202Hex
3.	Flags	1	42Hex
4.	Block Number	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	1202Hex
3.	Flags	1	52Hex
4.	Block Number	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0DHex
2.	Command Code	2	1202Hex
3.	Flags	1	62Hex
4.	UID	8	XXXXXXXXHex
5.	Block Number	1	XXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1202Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Block Number: Blocks to be lock. (Value lies between 00 to FFHex).
Data: The data need be locked.
UID: UID of card to be lock (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Full Inventory

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1F01Hex
3.	Flags	1	06Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Request (Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	1F01Hex
3.	Flags	1	26Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	XXHex
2.	Command Code	2	1F01Hex
3.	Error Code	2	XXXXHex
4.	Total No. of Received UIDs	1	XXHex
5.	Total Received UIDs x8	X	XXXX...XXXXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error code is FFFFHex then the length will be limited to 05Hex. Also field 4 and 5 will be absent.
Total no. of Received UID: The total number of cards that exist in the reading area.
UID: UID of cards that are detected (Total no. of Received UIDs * 8 byte).

Write Multiple Blocks

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	7+ (8 * Total Block)Hex
2.	Command Code	2	1F02Hex
3.	Flags	1	02Hex or 42Hex
4.	Block Length	1	XXHex
5.	Block Address	1	XXHex
6.	Total Block	1	XXHex
7.	Data	X	XX…XXHex
8.	Cyclic Redundancy Check	2	XXXXHex

Request (With Select Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	7+ (8 * Total Block)Hex
2.	Command Code	2	1F02Hex
3.	Flags	1	12Hex or 52Hex
4.	Block Length	1	XXHex
5.	Block Address	1	XXHex
6.	Total Block	1	XXHex
7.	Data	X	XX…XXHex
8.	Cyclic Redundancy Check	2	XXXXHex

Request (With Address Flag)

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0F+ (8 * Total Block)Hex
2.	Command Code	2	1F02Hex
3.	Flags	1	22Hex or 62Hex
4.	UID	8	XXXXXXXXHex
5.	Block Length	1	XXHex
6.	Block Address	1	XXHex
7.	Total Block	1	XXHex
8.	Data	X	XX…XXHex
9.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	1F02Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Block Length: Number of bytes to be written.
Block Number: No. of block from which to be written (Value lies between 00 to FFHex).
Total Block: Number of simultaneous block to be written.
Data: The data need be written.
UID: UID of card to be write (only if address flag is set).
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

ISO 14443A Commands

Request Command

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	2001Hex
3.	Custom Data	1	26Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	07Hex
2.	Command Code	2	2001Hex
3.	Error Code	2	XXXXHex
4.	Response	2	XXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Custom Data: It is set to 26 (26 is request idle command in short frame format).
Error Code: If error occurs then it returns error code as FFFFHex and also field 4 is absent else error code is 0000Hex.
Response: Contains two bytes ATQ (Answer To Request) response from the card.

Wake Up

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	2002Hex
3.	Custom Data	1	52Hex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	07Hex
2.	Command Code	2	2002Hex
3.	Error Code	2	XXXXHex
4.	Response	2	XXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Custom Data: It is set to 52 (52 is wakeup all command in short frame format).
Error Code: If error occurs then it returns error code as FFFFHex and also field 4 is absent else error code is 0000Hex.
Response: Contains two bytes ATQ (Answer To Request) response from the card.

Anti-collision

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	2006Hex
3.	Cascade Level	1	XXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	09Hex
2.	Command Code	2	2006Hex
3.	Error Code	2	XXXXHex
4.	UID	4	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Cascade Level: If cascade level is 1 then its value is 93Hex, if cascade level is 2 then its value is 95Hex and cascade level is 3 then its value is 97Hex.
Error Code: If error occurs then it returns error code as FFFFHex and also field 4 is absent else error code is 0000Hex.
UID: Contains UID of card (4 Byte).

Select Command

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	08Hex
2.	Command Code	2	2004Hex
3.	Cascade Level	1	XXHex
4.	UID	4	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	06Hex
2.	Command Code	2	2004Hex
3.	Error Code	2	XXXXHex
4.	SAK	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Cascade Level: If cascade level is 1 then its value is 93Hex, if cascade level is 2 then its value is 95Hex and cascade level is 3 then its value is 97Hex.
UID: UID of card to be selected (4 Byte).
Error Code: If error occurs then it returns error code as FFFFHex and also field 4 is absent otherwise error code is 0000Hex.
SAK: SAK (Select Acknowledge) If it contains value 00 then no further increase in cascade level and indicated complete UID and if the cascade bit of SAK is set then it is indicate requirement of further anti-collision loops with increased cascade level.

HALT

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	2005Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	2005Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Mifare Authenticate

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	0FHex
2.	Command Code	2	2101Hex
3.	UID	4	XXXXXXXXHex
4.	Block No.	1	XXHex
5.	Key Type	1	XXHex
6.	Key	6	XXXX..XXXXHex
7.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	2101Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

UID: UID of tag to be Authenticate.
Block No.: Number of blocks to Authenticate.
Key Type: For keyA it's value is 60Hex and for keyB it's value is 61Hex.
Key: It is 6byte key which is defined by user.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Mifare Read

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	2102Hex
3.	Block No.	1	XXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	14Hex
2.	Command Code	2	2102Hex
3.	Error Code	2	XXXXHex
4.	Data	16	XX..XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Block No.: Number of block to read.
Error Code: If error occurs then it returns error code as FFFFHex and also field 4 is absent otherwise error code is 0000Hex.
Data: Data to be read from the card.

Mifare Write

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	14Hex
2.	Command Code	2	2103Hex
3.	Block No.	1	XXHex
4.	Data	16	XX..XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	2103Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Block No.: Number of block to be written.
Data: Data written to the card.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Mifare UL Read

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	2201Hex
3.	Block No.	1	XXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	15Hex
2.	Command Code	2	2201Hex
3.	Error Code	2	XXXXHex
4.	Data	16	XX..XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Block No.: Number of block to read.
Error Code: If error occurs then it returns error code as FFFFHex and also field 4 is absent otherwise error code is 0000Hex.
Data: Data read from the card.

Mifare UL Write

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	14Hex
2.	Command Code	2	2202Hex
3.	Block No.	1	XXHex
4.	Data	16	XX..XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	2202Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Block No.: Number of block to be written.
Data: Data written to the card.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Inventory (14443A)

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	2F01Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	XXHex
2.	Command Code	2	2F01Hex
3.	Error Code	2	XXXXHex
4.	UID Length	1	XXHex
5.	UID	X	XXXX…XXXXHex
6.	Cyclic Redundancy Check	2	XXXXHex

UID Length: UID Length = 4 for 4 byte UID
UID Length = 7 for 7 byte UID
UID Length = 10 for 10 byte UID

UID: Contains UID of card near to the reader.

Error Code: If error occurs then it returns error code as FFFFHex and also field 4 & 5 are absent otherwise error code is 0000Hex.

Select Card

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	08Hex
2.	Command Code	2	2F02Hex
3.	UID Length	1	XXHex
4.	UID	4	XXXXXXXXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	2F02Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

UID Length: UID Length = 4 for 4 byte UID
UID Length = 7 for 7 byte UID
UID Length = 10 for 10 byte UID

UID: Contains UID of card to be select.

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Select Any Card

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	2F03Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	2F03Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

RFID System Level Commands

Low Power Mode

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	0001Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	0001Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Normal Power Mode

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	0002Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	0002Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Set RF Power

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	04Hex
2.	Command Code	2	0003Hex
3.	Power Level	1	XXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	0003Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Power Level: For 100mW its value is 01Hex and for 200mW its value is 02Hex.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

RF Turn On

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	0004Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	0004Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

RF Turn OFF

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	0005Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	0005Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

RR System Level Command

Get Reader Information

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F000Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	15Hex
2.	Command Code	2	F000Hex
3.	Error Code	2	XXXXHex
4.	Serial Number	16	XX…XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error code is FFFFHex then the length will be limited to 05Hex and also field 4 will be absent.
Serial Number: It is 16byte and it contains data including software version, hardware version and serial no. of reader.

Buzzer(Beep)

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F001Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F001Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Additional Frame

(Valid only if no. of Received UIDs > 7)

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F002Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	XXHex
2.	Command Code	2	F002Hex
3.	Error Code	2	XXXXHex
4.	No. of Additional UID	1	XXHex
5.	UID	X	XXXX…XXXXHex
6.	Cyclic Redundancy Check	2	XXXXHex

No. of Additional UID: No. of tags above 7.
UID: UIDs of additional tags (Additional tags = (tags>7)).
Error Code: If error code is FFFFHex then the length will be limited to 05Hex and also field 4 and 5 will be absent.

Reset Device / Restart Device

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	FF03Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	FF03Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

RROEM04 Ethernet Additional Command Code

Enable 15693 Auto Inventory (To be deprecated)

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F007Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	0EHex
2.	Command Code	2	F007Hex
3.	Error Code	2	XXXXHex
4.	No. of Total UID	1	XXHex
5.	UID	8	XXXX….XXXXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns error code as FFFFHex and also field 4 and 5 are absent otherwise error code is 0000Hex.
No. of Total UID: The total number of tags that exist in the reading area.
UID: UID of tags which are detected (Total no. of Received UIDs * 8 byte).

Enable ISO14443A Auto Inventory (To be deprecated)

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F008Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	XXHex
2.	Command Code	2	F008Hex
3.	Error Code	2	XXXXHex
4.	No. of Total UID	1	XXHex
5.	UID	X	XXXX….XXXXHex
6.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns error code as FFFFHex and also field 4 and 5 are absent otherwise error code is 0000Hex.
No. of Total UID: The total number of tags that exist in the reading area.
UID: UID of tags which are detected (Total no. of Received UIDs * X byte).

Disable All Auto Inventory (To be deprecated)

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F009Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F009Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change Device IP Address

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	07Hex
2.	Command Code	2	F00AHex
3.	Device IP Address	4	XXXX….XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F00AHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Device IP Address: Device IP address to be changed.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change Server Port

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	F00BHex
3.	Port Number	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F00BHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Port Number: Server port number to be changed.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change Host IP Address

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	07Hex
2.	Command Code	2	F00CHex
3.	Host IP Address	4	XXXX…XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F00CHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Host IP Address: Host IP address to be changed.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change Client Port

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	F00DHex
3.	Port Number	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F00DHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Port Number: Client port number to be changed.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change Default Gateway Address

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	07Hex
2.	Command Code	2	F00EHex
3.	Gateway Address	4	XXXX…XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F00EHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Gateway Address: Gateway address to be changed.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change Primary DNS Address

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	07Hex
2.	Command Code	2	F00FHex
3.	Primary DNS Address	4	XXXX…XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F00FHex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Primary DNS Address: Primary DNS address to be changed.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change Secondary DNS Address

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	07Hex
2.	Command Code	2	F010Hex
3.	Primary DNS Address	4	XXXX…XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response (without Error)

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F010Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Secondary DNS Address: Secondary DNS address to be changed..
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change MAC Address

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	09Hex
2.	Command Code	2	F011Hex
3.	MAC Address	6	XXXX…XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F011Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

MAC Address: MAC address to be changed.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change Subnet Mask

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	07Hex
2.	Command Code	2	F012Hex
3.	Subnet Mask	4	XXXX…XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F012Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Subnet Mask: Subnet Mask to be changed..
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Change NBIOS Name

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	13Hex
2.	Command Code	2	F013Hex
3.	NBIOS Name	16	XXXX…XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F013Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

NBIOS Name: NBIOS name to be changed.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Get TCP Information

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F014Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response (without Error)

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	37Hex
2.	Command Code	2	F014Hex
3.	Error Code	2	0000Hex
4.	IP Address	4	XXXX…XXXXHex
5.	Mask Address	4	XXXX…XXXXHex
6.	Gateway Address	4	XXXX…XXXXHex
7.	Primary DNS Address	4	XXXX…XXXXHex
8.	Secondary DNS Address	4	XXXX…XXXXHex
9.	Server IP Address	4	XXXX…XXXXHex
10.	Device MAC Address	6	XXXX…XXXXHex
11.	Client Port	2	XXXX…XXXXHex
12.	Server Port	2	XXXX…XXXXHex
13.	NBIOS Name	16	XXXX…XXXXHex
14.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns error code as FFFFHex and also field 4 to 13 are absent otherwise error code is 0000Hex.
IP Address: Contains previously set IP address.
Mask Address: Contains previously set Mask address.
Gateway Address: Contains previously set gateway address.
Primary DNS Address: Contains previously set primary DNS address.
Secondary DNS Address: Contains previously set secondary DNS address.
Server IP Address: Contains previously set server IP address.
Device MAC Address: Contains previously set device MAC address.
Client Port: Contains previously set client port.
Server Port: Contains previously set server port.
NBIOS Name: Contains previously set NBIOS name.

Turn Off Buzzer

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F015Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F015Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Turn On Buzzer

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F016Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F016Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Relay On Off

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	F019Hex
3.	Relay No.	1	XXHex
4.	Relay Status	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F019Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Relay No.: Relay 1 or Relay 2 which user want to change
Relay Status: On or Off Relay Status
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Set Auto Inventory Status

User can set Auto Inventory enable or disable and other parameters using this command.

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	22Hex
2.	Command Code	2	F021Hex
3.	Auto Inventory Flags	1	XXHex
4.	Relay Modes	2	XXXXHex
5.	Relay Time	4	XX.. XXHex
6.	Key Type A or B	1	XXHex
7.	Block No.	1	XXHex
8.	Key	6	XXXX...XXXXHex
9.	Data	16	XX..XXHex
10.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F021Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Auto Inventory Flags: This is used to set Auto Inventory enable or disable.

Auto inventory Flags parameter: -

Sr.No.	Parameter	Length(bits)	Bits No.
1.	ISO15693 Flag	1	0 (LSB)
2.	ISO14443A Flag	1	1
3.	Log Required - ISO14443A	1	2
4.	Auto Relay Triger - ISO14443A	1	3
5.	Log Required - ISO15693	1	4
6.	Auto Relay Triger - ISO15693	1	5
7.	Tag Filtering - ISO14443A	1	6
8.	RFU	1	7 (MSB)

Relay Modes:-

Sr.No.	Parameter	Length(bits)	Bits No.
1.	Relay 1 Modes	2	0 (LSB),1
2.	Relay 2 Modes	2	2,3
3.	RFU	4	4 to 7(MSB)

Relay Modes: There are three types of Relay Modes.

Bits no.(1,3)	Bits no.(0,2)	Mode
0	0	Single Relay Mode
0	1	Continuous Relay Mode
1	x	No change Relay Mode

1) Single Relay Mode :- when Tag detect Relay on one Time and off after set time.

2) Continuous Relay Mode:- when Tag detect Relay on and on until tag is in Range and off after set time if tag out of Range.

3) No change Relay Mode :- There is not any changes in Relay.

Relay Time:- Relay automatically off after this time. its in multiple off 100ms.
Ex. If we need to set Relay Time 1sec then Relay Time value is 10.
10 *100 = 1000ms= 1sec.

Key Type: For key A, its value is 60Hex and for key B, its value is 61Hex.
Block No.: Number of blocks for Tag filtering.
Key: It is 6byte key which is defined by user.
Data: Data written to the card.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Set Relay (Auto Off)

This command ON Selected Relay and automatically OFF after set time.

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	05Hex
2.	Command Code	2	F022Hex
3.	Relay No.	1	XXHex
4.	Relay Time	1	XXHex
5.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F022Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Relay No.: Its Relay 1 or Relay 2
Relay Time: Relay automatically off after this time its in multiple off 100ms.
Ex. If we need to set Relay Time 1sec then Relay Time value is 10.
10 *100 = 1000ms= 1sec.
Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Get Auto Inventory Status

User gets All Auto inventory parameter if previously set.

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F023Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length (Byte)	Data
1.	Response Frame Length	1	22Hex
2.	Command Code	2	F023Hex
3.	Error Code	2	XXXXHex
4.	Auto Inventory Flags	1	XXHex
5.	Relay Modes	2	XXXXHex
6.	Relay Time	4	XX.. XXHex
7.	Key Type A or B	1	XXHex
8.	Block No.	1	XXHex
9.	Key	6	XXXX...XXXXHex
10.	Data	16	XX..XXHex
11.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Auto Inventory Flags: This is used to set Auto Inventory enable or disable.

Auto inventory Flags parameter: -

Sr.No.	Parameter	Length(bits)	Bits No.
1.	ISO15693 Flag	1	0 (LSB)
2.	ISO14443A Flag	1	1
3.	Log Required - ISO14443A	1	2
4.	Auto Relay Triger - ISO14443A	1	3
5.	Log Required - ISO15693	1	4
6.	Auto Relay Triger - ISO15693	1	5
7.	Tag Filtering - ISO14443A	1	6
8.	RFU	1	7 (MSB)

Relay Modes:-

Sr.No.	Parameter	Length(bits)	Bits No.
1.	Relay 1 Modes	2	0 (LSB),1
2.	Relay 2 Modes	2	2,3
3.	RFU	4	4 to 7(MSB)

Relay Modes: There are three types of Relay Modes.

Bits no.(1,3)	Bits no.(0,2)	Mode
0	0	Single Relay Mode
0	1	Continuous Relay Mode
1	x	No change Relay Mode

1) Single Relay Mode :- when Tag detect Relay on one Time and off after set time.

2) Continuous Relay Mode:- when Tag detect Relay on and on until tag is in Range and off after set time if tag out of Range.

3) No change Relay Mode :- There is not any changes in Relay.

Relay Time:- Relay Time is in multiple of 100ms.for ex. If we need to set Relay Time 1sec then Relay Time value is 10. Ex. 10 *100 = 1000ms = 1sec.
Key Type: For key A, its value is 60Hex and for key B, its value is 61Hex.
Block No.: Number of blocks for Tag filtering.
Key: It is 6byte key which is defined by user.
Data: Data written to the card.

Get RF Power

User Get power level of reader which was set by user.

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F024Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	06Hex
2.	Command Code	2	F024Hex
3.	Error Code	2	XXXXHex
4.	Power Level	1	XX Hex
5.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.
Power Level: For 100mW its value is 01Hex and for 200mW its value is 02Hex.

Register(Mifare Tag Filtering)

This Command Write data of Tag in specific data block and change keys and access condition in sector trailer

Request

Sr. No.	Parameter	Length (Byte)	Data
1.	Request Frame Length	1	22Hex
2.	Command Code	2	F025Hex
3.	Block No.	1	XXHex
4.	Data	16	XX..XXHex
5.	Key A	6	XX...XXHex
6.	Key B	6	XX...XXHex
7.	Access Condition	2	XXXXHex
8.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F025Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Block No.: Number of block to be written.
Data: Data written to the card.
Key A: It is updated 6-byte Key A data.
Key B: It is updated 6-byte Key B data.
Access Conditions:
Access condition for sector trailer and data blocks.

Sr. No.	**Access Condition**	Length (Byte)	Data
1.	Sector Trailer	1	XXHex
2.	Data Block	1	XXHex

1)Sector Trailer:
There are two sector Trailer condition available:1)Key A Read Write (Default) = 00Hex
2)Key A Read ,Key B Read Write = 01Hex

2)Data Block:
There are three Data Block condition available: 1)Key A/B Read Write (Default) = 00Hex
2)Key A/B Read Only = 01Hex
3)Key A/B Read ,Key B Write =02Hex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

Get Default TCP Information

Users get Default Tcp parameter information which is saved in Eeprom.

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F026Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response (without Error)

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	27Hex
2.	Command Code	2	F026Hex
3.	Error Code	2	0000Hex
4.	Reader IP Address	4	XXXX…XXXXHex
5.	Mask Address	4	XXXX…XXXXHex
6.	Gateway Address	4	XXXX…XXXXHex
7.	Primary DNS Address	4	XXXX…XXXXHex
8.	Secondary DNS Address	4	XXXX…XXXXHex
9.	Host IP Address	4	XXXX…XXXXHex
10.	Device MAC Address	6	XXXX…XXXXHex
11.	Host Port	2	XXXX…XXXXHex
12.	Reader Port	2	XXXX…XXXXHex
14.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns error code as FFFFHex and field 4 to 13 are absent otherwise error code is 0000Hex.
Reader IP Address: Contains Client set default Reader IP address.
Mask Address: Contains Client set default Mask address.
Gateway Address: Contains Client set default gateway address.
Primary DNS Address: Contains Client set default primary DNS address.
Secondary DNS Address: Contains Client set default secondary DNS address.
Host IP Address: Contains Client set default Host IP address.
Device MAC Address: Contains Client set default device MAC address.
Host Port: Contains Client set default Host port.
Reader Port: Contains Client set default Reader port.

Set Default TCP Information

This command set client default Reset parameter in Eeprom, there is no any changes in current Tcp Parameter.

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	1FHex
2.	Command Code	2	F027Hex
3.	Reader IP Address	4	XXXX…XXXXHex
4.	Reader Port	2	XXXX…XXXXHex
5.	Host IP Address	4	XXXX…XXXXHex
6.	Host Port	2	XXXX…XXXXHex
7.	Mask Address	4	XXXX…XXXXHex
8.	Gateway Address	4	XXXX…XXXXHex
9.	Primary DNS Address	4	XXXX…XXXXHex
10.	Secondary DNS Address	4	XXXX…XXXXHex
11.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F027Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Reader IP Address: Contains IP address which user want to set.
Reader Port: Contains Reader port which user want to set.
Host IP Address: Contains client IP address which user want to set.
Host Port: Contains client port which user want to set.
Mask Address: Contains Mask address which user want to set.
Gateway Address: Contains gateway address which user want to set.
Primary DNS Address: Contains DNS address which user want to set.
Secondary DNS Address: Contains secondary DNS address which user want to set.
Error Code: If error occurs then it returns error code as FFFFHex and field 4 to 13 are absent otherwise error code is 0000Hex.

Reset to Default TCP Configuration

This command Reset all TCP information of Reader to client default set configuration and soft Reset to Reader.

Request

Sr. No.	Parameter	Length	Data
1.	Request Frame Length	1	03Hex
2.	Command Code	2	F028Hex
3.	Cyclic Redundancy Check	2	XXXXHex

Response

Sr. No.	Parameter	Length	Data
1.	Response Frame Length	1	05Hex
2.	Command Code	2	F028Hex
3.	Error Code	2	XXXXHex
4.	Cyclic Redundancy Check	2	XXXXHex

Error Code: If error occurs then it returns FFFFHex otherwise 0000Hex.

