

# I-POLL<sup>2.0</sup> Interface

## Programmer's Guide

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## 1. Introduction

This is RSP(Reader Serial Protocol) Interface document for mobile readers that use serial communication. The device can be configured using commands and/or open configured values.

## 2. Application Range

This manual applies to the following devices:

- **I-POLL<sup>2.0</sup>**: UHF RFID Only / UHF RFID + Scanner(1D/2D)

## 3. Instructional Icons and Abbreviation

This document contains and uses the following symbols and abbreviation:

CMD	Command	Protocol
CR	Command Result	Protocol
CRC	Cyclic redundancy check	RFID
DR	Data Result	Protocol
EC	Error Code	Protocol
EPC	Electronic product code	RFID
END	End	Protocol
OR	Operation Result	Protocol
PARAM	Parameter	Protocol
PC	Protocol control	RFID
SP	Separation	Protocol
TID	Tag identification	RFID
VAL	Value	Protocol

## 4. Serial Communication Setup

In order to transfer data between host and device, setup the configuration as the following:

- Baud Rate: 115200
- Data: 8bit
- Parity: none
- Stop: 1bit
- Flow Control: none

## 5. Communication Protocol

Communication protocol is configured into frame, packet, and field. Frame is broken down to TX frame and RX frame. Each packet can be configured according to the following fields.

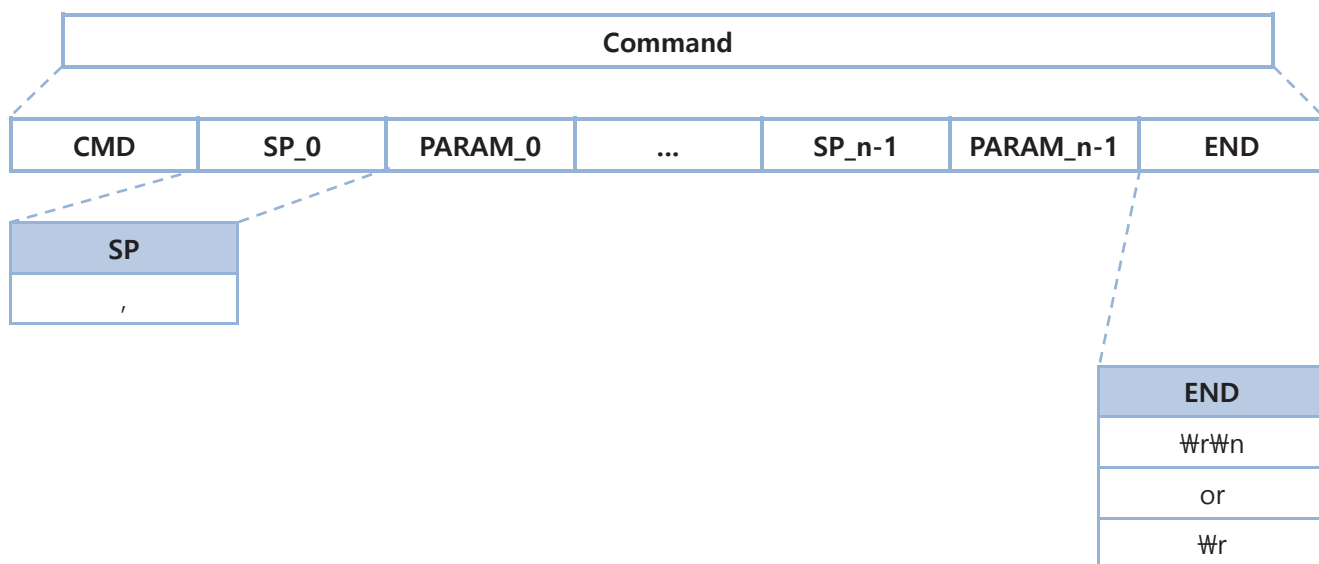
Frame	Packet	Field	Description
TX	Command	CMD	Command Field. Refer to <a href="#">Command Summary</a>
		SP	Separate each Field
		PARAM	Inputs parameter to its according Command.
		END	Ends Frame or Packet.
RX	Command	CR	Returns the Command results.
		SP	Separate each Field.
		VAL	Returns the values or error code retrieving status or configuration.
		END	Ends Frame or Packet.
	Data	DR	Returns data on tag or bar code.
		SP	Separate each Field.
		END	Ends Frame or Packet.
	Operation	OR	Returns processed value on Command sent by TX Frame.
		EC	Returns the error code processed on Command sent by TX Frame.
		SP	Separate each Field.
		CMD	Returns Command on process that has been finished.
		END	Ends Frame or Packet.

**Table 1. Communication Protocol**

- ✓ *Note. The composition of Packet and/or Frame of TX Frame and/or RX Frame may differ depending on Command.*

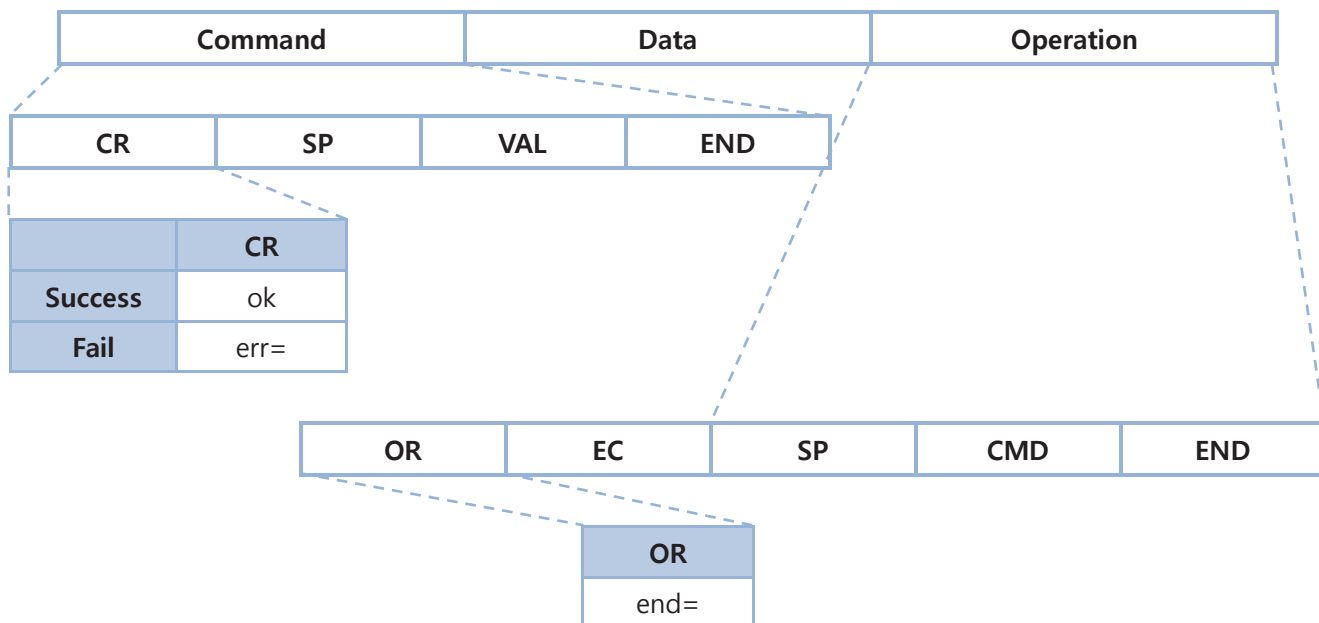
## 5.1. TX Frame

Command of TX Frame is composed of one CMD Field, one END Field, and several SP and/or PARAM Field..



## 5.2. RX Frame

RX Frame is composed of Command, Data, and Operation Packet; Refer to [Communication Protocol](#) to find more information on each Field.



## 6. Command Summary

		Name	Command	Supported Models	
				R-900	R-800
General Command	COMMON	<a href="#">Open_Comm</a>	WrWnWrWnWrWn	√	√
			or		
			WrWrWrWrWrWrWr	√	√
		<a href="#">Close_Comm</a>	bye	√	√
		<a href="#">Check_Comm</a>	WrWn	√	√
			or		
			Wr	√	√
		<a href="#">Set_Bt_Config</a>	br.bt.config	√	√
		<a href="#">Get_Bt_Name</a>	Br.bt.name		√
		<a href="#">Get_Bt_Mac</a>	br.bt.mac	√	√
		<a href="#">Upload_Data</a>	br.upl	√	√
		<a href="#">Clear_Data</a>	br.clrlist	√	√
		<a href="#">Set_Default_Param</a>	default	√	√
		<a href="#">Get_Param</a>	g	√	√
		<a href="#">Get_Version</a>	ver	√	√
		<a href="#">Pwr_Off</a>	br.off	√	
		<a href="#">Set_PwrOff_Delay</a>	br.autooff	√	
		<a href="#">Set_Timer</a>	time	√	√
		<a href="#">Set_Buzz_Vol</a>	br.vol	√	√
		<div> <a href="#">General Command</a>  COMMAND is supported on both R-900 and R-.   <b>6.1. COMMON</b>   Connects HOST with READER Device, and setup READER environment. </div>			
			br.beep	√	



6.1.1. Open\_Comm

Connects HOST with READER device. After RESET, this needs to be sent before other COMMAND in order to communicate with READER.

Command Packet Format

SP_0	PARAM_C

Response

END
WrWn

Example

RSP Command

DOT Simple Serial Commands

General Common

Open\_Comm

Close\_Comm

Check\_comm

Set\_Bt\_config

Get\_Bt\_Name

Get\_Bt\_Mac

Stop

Upload\_Data

Get\_Local\_Data\_Count

Clear\_Data

Set\_Default\_Param

Get\_Param

Get\_Version

Pwr\_Off

6.1.2. Close\_Comm

Ends connection with HOST and READER.

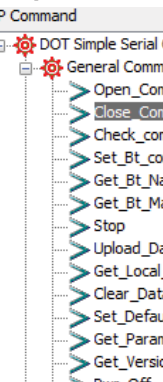
Command Packet Format

SP_0	PARAM_C

Response			Command
	SP		V
			<error>

### Example

#### 6.1.3. Check\_Comm

Checks the connection status of HOST and READER. This is ignored while the READER is working.

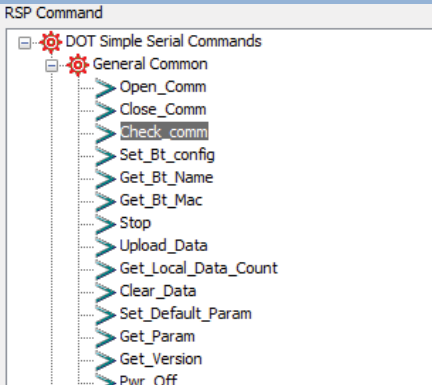
  

#### Command Packet Format

SP_0	PARAM_0

### Example



6.1.4. Set\_Bt\_Config

Configures the Bluetooth environment (Connection method, Local device name, PIN code) of READER. Re-connect after the configuration values have been changed. This function will work under Bluetooth connection, and will return ERROR on USB connection.

Command Packet Format

M_0	SP_1	PARAM_1	SP_2
de>	,	<PinCode>	,

Field Descriptions

Field	
<Mode>	2: Cannot connect the already connected 3: Connect with already connected
<PinCode>	4character decimal
<LocalName>	String (Character (D=May differ de

	<div><div>Response</div><div>&lt;RPT-900&gt;</div><div><div>Response</div><div><div>SP</div><div></div><div>"Relink c</div></div><div></div><div>a</div></div></div>		
	<div><div>&lt;RPT-100&gt;</div><div><div>Command</div><div><div>SP</div><div></div><div>"USB</div></div></div></div>		
	<div><div>Example</div><div><div>RSP Command</div><div><div>DOT Simple Serial Commands</div><div><div>General Common</div><div><div>Open_Comm</div><div>Close_Comm</div><div>Check_comm</div><div>Set_Bt_config</div><div>Get_Bt_Name</div><div>Get_Bt_Mac</div><div>Stop</div><div>Upload_Data</div><div>Get_Local_Data_Count</div><div>Clear_Data</div><div>Set_Default_Param</div><div>Get_Param</div><div>Get_Version</div><div>Pwr_Off</div></div></div></div></div></div>		
	<div><div>6.1.5. Get_Bt_Name</div><div>Retrieve Bluetooth DEVICE name of READER.</div></div>		
	<div>Command Packet Format</div>		

	<table><tr><th>CMD</th><th>SP_0</th><th>PARAM_0</th><th>END</th></tr><tr><td>br.bt.name</td><td>,</td><td></td><td>WrWn</td></tr></table>	CMD	SP_0	PARAM_0	END	br.bt.name	,		WrWn						
CMD	SP_0	PARAM_0	END												
br.bt.name	,		WrWn												
<b>Response</b>															
<table><tr><th colspan="4">Command</th></tr><tr><td></td><th>SP</th><td></td><td></td></tr><tr><td></td><td></td><td></td><td>&lt;bt</td></tr></table>				Command					SP						<bt
Command															
	SP														
			<bt												
<b>Response Field Descriptions</b>															
<table><tr><th>Field</th><th>Field Description</th></tr><tr><td>&lt;bt name&gt;</td><td>\$btname,X</td></tr></table>				Field	Field Description	<bt name>	\$btname,X								
Field	Field Description														
<bt name>	\$btname,X														
<b>Example</b>															
<div><div>RSP Command</div><div><div><div>DOT Simple Serial Commands</div><div><div>General Common</div><div><div>Open_Comm</div><div>Close_Comm</div><div>Check_comm</div><div>Set_Bt_config</div><div>Get_Bt_Name</div><div>Get_Bt_Mac</div><div>Stop</div><div>Upload_Data</div><div>Get_Local_Data_Count</div><div>Clear_Data</div><div>Set_Default_Param</div><div>Get_Param</div><div>Get_Version</div><div>Pwr_Off</div></div></div></div></div></div>															
<b>6.1.6. Get_Bt_Mac</b>															
Retrieve Bluetooth MAC Address of READER.															
<b>Command Packet Format</b>															
<table><tr><th>SP_0</th><th>PARAM_0</th></tr><tr><td></td><td></td></tr></table>				SP_0	PARAM_0										
SP_0	PARAM_0														
<b>Response</b>															

		Command										
CR		SP										
				<mac								
err=				<erro								
<div>Response Field Descriptions</div> <table><tr><th>Field</th><th>Fe</th></tr><tr><td>&lt;mac address&gt;</td><td>\$btmac,XX</td></tr></table>							Field	Fe	<mac address>	\$btmac,XX		
Field	Fe											
<mac address>	\$btmac,XX											
<div>Example</div> <div>RSP Command</div> <div><div>DOT Simple Serial Commands</div><div><div>General Common</div><div><div>Open_Comm</div><div>Close_Comm</div><div>Check_comm</div><div>Set_Bt_config</div><div>Get_Bt_Name</div><div>Get_Bt_Mac</div><div>Stop</div><div>Upload_Data</div><div>Get_Local_Data_Count</div><div>Clear_Data</div><div>Set_Default_Param</div><div>Get_Param</div><div>Get_Version</div><div>Pwr Off</div></div></div></div>												
<div>6.1.7. Upload_Data</div> <div>Transmit saved data on READER memory.</div>												
<div>Command Packet Format</div> <table><tr><th>PARAM_0</th><th>SP_1</th></tr><tr><td>&lt;Index&gt;</td><td>,</td></tr></table>							PARAM_0	SP_1	<Index>	,		
PARAM_0	SP_1											
<Index>	,											
<div>Command Field Descriptions</div> <table><tr><th>Field</th><th>Value</th></tr><tr><td>&lt;Index&gt;</td><td>0~999</td></tr><tr><td>&lt;Count&gt;</td><td>1~100</td></tr></table>							Field	Value	<Index>	0~999	<Count>	1~100
Field	Value											
<Index>	0~999											
<Count>	1~100											
<div>Response</div>												

Command		
SP		
		<error>
Data		
SP		
Operation		
SP		
/e>	,	
Response Field Descriptions		
Field		
<memory data>	<index>:<c	
<b>Example</b>		
Uploading all data		
RSP Command		
DOT Simple Serial Commands		
General Common		
Open_Comm		
Close_Comm		
Check_comm		
Set_Bt_config		
Get_Bt_Name		
Get_Bt_Mac		
Stop		
Upload_Data		
Get_Local_Data_Count		
Clear_Data		
Set_Default_Param		
Get_Param		
Get_Version		
Pwr Off		
Uploading two data from third index,		

RSP Command

DOT Simple Serial Commands

General Common

Open\_Comm

Close\_Comm

Check\_comm

Set\_Bt\_config

Get\_Bt\_Name

Get\_Bt\_Mac

Stop

Upload\_Data

Get\_Local\_Data\_Count

Clear\_Data

Set\_Default\_Param

Get\_Param

Get\_Version

Pwr\_Off

6.1.8. Clear\_Data

Delete the data on READER memory.

Command Packet Format

SP_0	PARAM_0

Response

Command		
	SP	
		<error>

Operation

	SP	
de>	,	

Example



RSP Command

DOT Simple Serial Commands

General Common

Open\_Comm

Close\_Comm

Check\_comm

Set\_Bt\_config

Get\_Bt\_Name

Get\_Bt\_Mac

Stop

Upload\_Data

Get\_Local\_Data\_Count

Clear\_Data

Set\_Default\_Param

Get\_Param

Get\_Version

Pwr Off

6.1.9. Set\_Default\_Param

Resets READER configuration values. Refer to [Device Default Value](#) for more information on initial setting

Command Packet Format

SP_0	PARAM_0

Response

Command		
	SP	
		<err

Example

Reading RF Power after resetting to initial values then changing RF power to ,

RSP Command

DOT Simple Serial Commands

General Common

Open\_Comm
Close\_Comm
Check\_comm
Set\_Bt\_config
Get\_Bt\_Name
Get\_Bt\_Mac
Stop
Upload\_Data
Get\_Local\_Data\_Count
Clear\_Data
Set\_Default\_Param
Get\_Param
Get\_Version
Pwr Off

### 6.1.10. Get\_Param

Retrieves option value on Device, RFID and/or Scanner .

#### Command Packet Format

PARAM_0	SP_1
<Command>	,

#### Command Field Descriptions

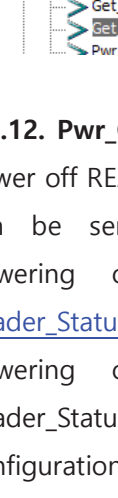
Field	
<Command>	<a href="#">alert</a> , <a href="#">br.ale</a> <a href="#">br.vol</a> , <a href="#">chs</a> , <a href="#">linkp</a> , <a href="#">rf.dat</a> <a href="#">rf.prefix</a> , <a href="#">rf.s</a> <a href="#">rf.tagfocus</a> , <a href="#">time</a>
<Param>	<Channel> <Index> ...

Response		
Command		
	SP	
	,	<op
		<e
Response Field Descriptions		
Field		
<option value>	Returns op information	
Example		
<div>RSP Command</div> <div><div><div><div><div></div><div>DOT Simple Serial Commands</div></div><div><div></div><div>General Common</div><div><div>Open_Comm</div><div>Close_Comm</div><div>Check_comm</div><div>Set_Bt_config</div><div>Get_Bt_Name</div><div>Get_Bt_Mac</div><div>Stop</div><div>Upload_Data</div><div>Get_Local_Data_Count</div><div>Clear_Data</div><div>Set_Default_Param</div><div>Get_Param</div><div>Get_Version</div><div>Pwr Off</div></div></div></div></div></div>		
<h3>6.1.11. Get_Version</h3> <p>Returns F/W version of READER.</p>		
Command Packet Format		
SP_0	PARAM_0	
Response		
Command		
	SP	
	,	<f/v
		<er

### Response Field Descriptions

Field	Field Description
<f/w version>	ver=x.x.x.x

### Example



The screenshot shows the 'RSP Command' menu with 'General Common' expanded. The 'Get Version' option is highlighted in blue.

#### 6.1.12. Pwr\_Off

Power off READER. Event message can be sent to HOST while powering off depending on [Reader\\_Status\\_Report](#) while powering off depending on Reader\_Status\_Report configuration.

### Command Packet Format

SP_0	PARAM_0

### Response

Command Response		
	SP	PARAM
		<error>

### Example

RSP Command

Open\_Comm

Close\_Comm

Check\_comm

Set\_Bt\_config

Get\_Bt\_Name

Get\_Bt\_Mac

Stop

Upload\_Data

Get\_Local\_Data\_Count

Clear\_Data

Set\_Default\_Param

Get\_Param

Get\_Version

Pwr\_Off

Set\_PwrOff\_Delay

Set\_Timer

6.1.13. Set\_PwrOff\_Delay

Set auto power off time when the READER is not in use. Retrieve current configuration value through [Get\\_Param](#) COMMAND.

Command Packet Format

PARAM_0	SP_1
<Delay>	,

Command Field Descriptions

Field	Value
<Delay>	0: Infinite 1~86400: (D=300
<Nv>	0: Disable 1: Enable

Response

Command		
	SP	
		<error

Example

Power Off Delay set to 60 seconds,

RSP Command

Get\_Bt\_Name

Get\_Bt\_Mac

Stop

Upload\_Data

Get\_Local\_Data\_Count

Clear\_Data

Set\_Default\_Param

Get\_Param

Get\_Version

Pwr\_Off

Set\_PwrOff\_Delay

Set\_Timer

Set\_Buzz\_Vol

Set\_Vib\_Enable

BEEP

Get Battery IV

6.1.14. Set\_Timer

The reader sets the time to the timer.

Get\_Param command can be used to get the current timer value.

Command Packet Format

SP_0	PARAM_0
,	<Time>

Command Field Descriptions

Field	Value
<Time>	0~0xFFFFFFFF

Response

Command		
	SP	Value
		<error code>

Example

RSP Command

Clear\_Data

Set\_Default\_Param

Get\_Param

Get\_Version

Pwr\_Off

Set\_PwrOff\_Delay

Set\_Timer

Set\_Buzz\_Vol

Set\_Vib\_Enable

BEEP

Get\_Battery\_LV

Battery\_State\_Report

Link\_State\_Report

Reader\_Status\_Report

Get\_Reader\_Status\_Word

General RFID

6.1.15. Set\_Buzz\_Vol

Set Buzzer volume. Retrieve current setting using [Get\\_Param](#).

Command Packet Format

PARAM_0	SP_1
<Volume>	,

Command Field Descriptions

Field	Value
<Volume>	0: Mute
	1: Min
	2: Max (D)
<Nv>	0: Disable
	1: Enable

Response

Command		
	SP	
		<error>

Example

Command		<div> <div>RSP Command</div> <ul style="list-style-type: none"> <li>Clear_Data</li> <li>Set_Default_Param</li> <li>Get_Param</li> <li>Get_Version</li> <li>Pwr_Off</li> <li>Set_PwrOff_Delay</li> <li>Set_Timer</li> <li>Set_Buzz_Vol</li> <li>Set_Vib_Enable</li> <li>BEEP</li> <li>Get_Battery_LV</li> <li>Battery_State_Report</li> <li>Link_State_Report</li> <li>Reader_Status_Report</li> <li>Get_Reader_Status_Word</li> <li>General RFID</li> </ul> </div>			
		Beep			
		<u>Get_Battery_LV</u>	br.batt	√	√
		<u>Link_Status_Report</u>	alert	√	√
		<u>Reader_Status_Report</u>	br.alert	√	√
	RFID	<u>Inventory</u>	i	√	√
		<u>Stop</u>	s	√	√
		<u>Set_Inventory_Report</u>	ireport	√	√
		<u>Select</u>	m	√	√
		<u>Read_Tag</u>	r	√	√
		<u>Write_Tag</u>	w	√	√
		<u>Kill_Tag</u>	kill	√	√
		<u>Lock_Tag</u>	lock	√	√
		<u>Perma_Lock_Tag</u>	lockperm	√	√
		<u>Set_Inventory_Param</u>	iparam	√	√
		<u>Set_Power</u>	txp	√	√
		오류! 참조 원본을 찾을 수 없습니다.	maxp	√	√
		<u>Set_Tx_Cycle</u>	txc	√	√
		<u>Set_Channel</u>	chs	√	√
		<u>Set_LBT</u>	lbt	√	√
		<u>Set_Link_Profile</u>	linkp	√	√
	COMMO	<u>COMMON</u>			
		<u>Set_Clear_Report</u> Set whether or not to transmit	clr		√



		event when memory data is deleted by reader's Clear button.			
		오류! 참조 원본을 찾을 수 없습니다.	oemif		√
		<a href="#">Get_Local_Data_Count</a>	Br.taglist		√
		<a href="#">Set_Vibrator</a>	br.vib		√
		<a href="#">Set_AutoMode_Delay</a>	br.autostop		√
		<a href="#">Set_Terminate_Character</a>	br.enter		√
		<a href="#">HID_Keyboard_Layout</a>	br.hidlayout		√
	RFID	<a href="#">Single_Search</a>	rf.ss		√
		<a href="#">Multi_Search</a>	rf.ms		√
		<a href="#">WildCard_Search</a>	rf.ws		√
		<a href="#">Set_Search_List</a>	rf.ssl		√
		<a href="#">Get_Search_List</a>	rf.gsl		√
		<a href="#">Clear_Search_List</a>	rf.csl		√
		<a href="#">Block_Write</a>	rf.bw		√
		<a href="#">Block_Erase</a>	rf.be		√
		<a href="#">Set_TagFocus</a>	rf.tagfocus		√
		<a href="#">Set_FastID</a>	rf.fastid		√
		<a href="#">RFID_Data_Format</a>	rf.data		√
		<a href="#">RFID_Transmission_Format</a>	rf.fixdata		√
		<a href="#">RFID_Prefix</a>	rf.prefix		√
		<a href="#">RFID_Suffix1</a>	rf.suffix1		√
		<a href="#">RFID_Suffix2</a>	rf.suffix2		√
		<a href="#">RFID_InvLcdOff</a>	rf.invlcdoff		√
	SCANNER	<a href="#">Scan_Get_Type</a>	sc.type		√
		<a href="#">Scan_Start</a>	sc.start		√
		<a href="#">Scan_Stop</a>	sc.stop		√
		<a href="#">Scan_Set_Param</a>	sc.param		√
		<a href="#">Scan_Default</a>	sc.default		√
		<a href="#">Scan_Version</a>	sc.ver		√
		<a href="#">Scan_FW_Update</a>	sc.fw		√
		<a href="#">Scan_Set_Report</a>	sc.report		√

**Table 2. Command Summary**

- Depending on the use of Command, it may be composed three ways as shown below:
  - COMMON Command: Used to control reader device.
  - RFID Command: Used to decode RFID Tag and configure setup.
  - SCANNER Command: Used to decode Barcode and configure setup.
- END Field is with "~~Wr~~Wn"(0x0D0A) or "~~Wr~~"(0x0D) value and is decided upon, [Open\\_Comm COMMAND](#). *This document explains Open\_Comm COMMAND and END Field value with "~~Wr~~Wn"format..*
- Parameter can be excluded. For example, in case of COMMAND such as Command,pa,pb,pc, in order to exclude pb PARAMETER, you only need to type Command,pa, ,pc.
- If COMMAND and/or PARAMETER has been misused, display '^'(0x5E) in front of wrong value.
- Send "\$>"(0x240x3E) when reader device is ready to receive COMMAND.

## 7. General Command

COMMAND is supported on both R-900 and R-.

### 7.1. COMMON

Connects HOST with READER Device, and setup READER environment.

#### 7.1.1. Open\_Comm

Connects HOST with READER device. After RESET, this needs to be sent before other COMMAND in order to communicate with READER.

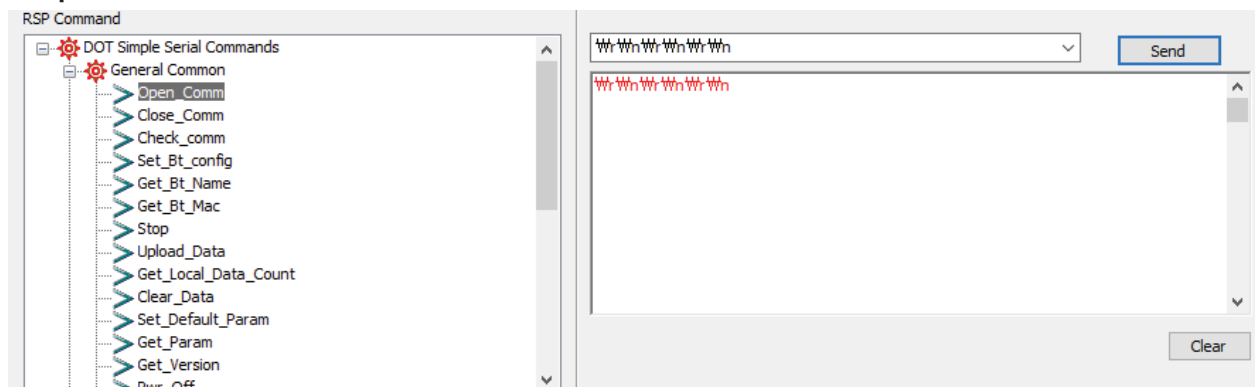
#### Command Packet Format

CMD	SP_0	PARAM_0	END
WrWnWrWnWrWn			WrWn

#### Response

END
WrWn

#### Example



### 7.1.2. Close\_Comm

Ends connection with HOST and READER.

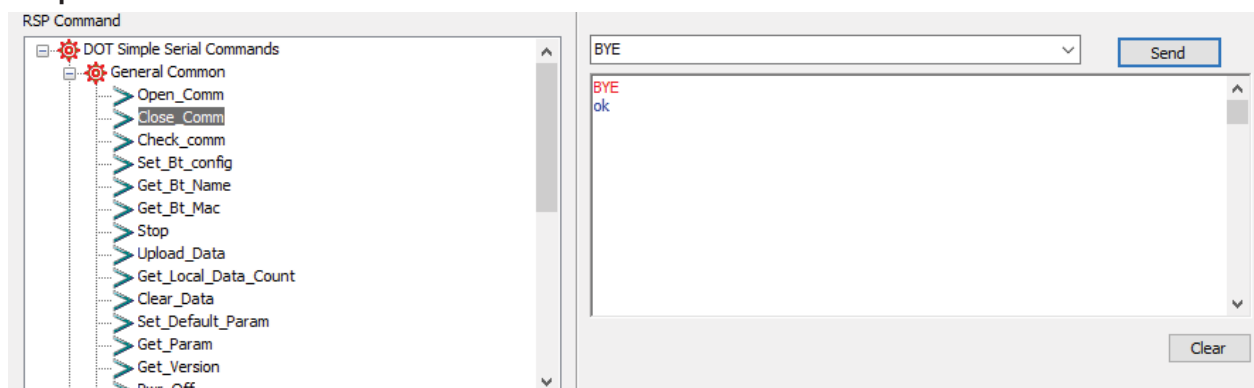
#### Command Packet Format

CMD	SP_0	PARAM_0	END
bye			WrWn

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



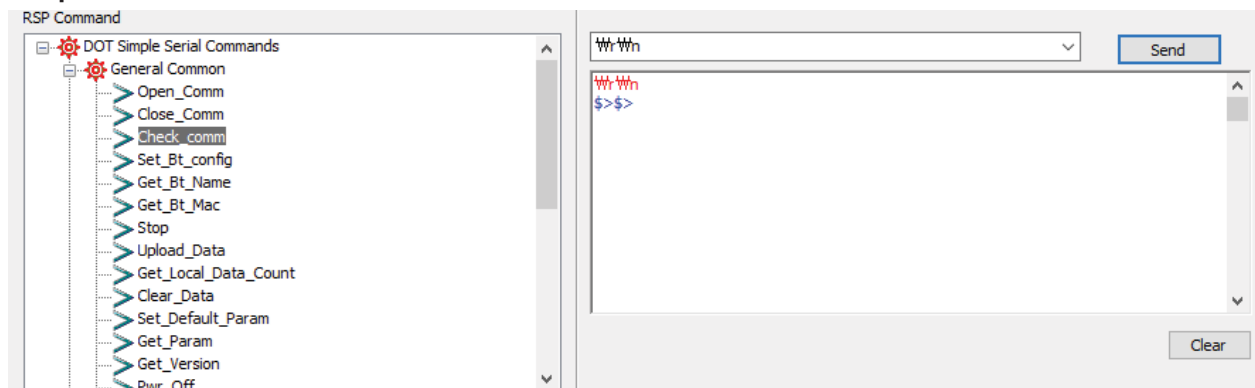
### 7.1.3. Check\_Comm

Checks the connection status of HOST and READER. This is ignored while the READER is working.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
			WrWn

#### Example



#### 7.1.4. Set\_Bt\_Config

Configures the Bluetooth environment (Connection method, Local device name, PIN code) of READER. Re-connect after the configuration values have been changed. This function will work under Bluetooth connection, and will return ERROR on USB connection.

##### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2	PARAM_2	END
br.bt.config	,	<Mode>	,	<PinCode>	,	<LocalName>	WrWn

##### Field Descriptions

Field	Value	Description
<Mode>	2: Cannot connect to other device other than the already connected device 3: Connect with other devices other than already connected device	<i>Not supported in R-800.</i>
<PinCode>	4 character decimal number (D=1234)	Enter PIN Code (4 digit decimal)
<LocalName>	String (Character string) (D=May differ depending on model)	Input DEVICE name with STRING (Character string) R-900: Max 30 character R-800: Max 15 character

##### Response

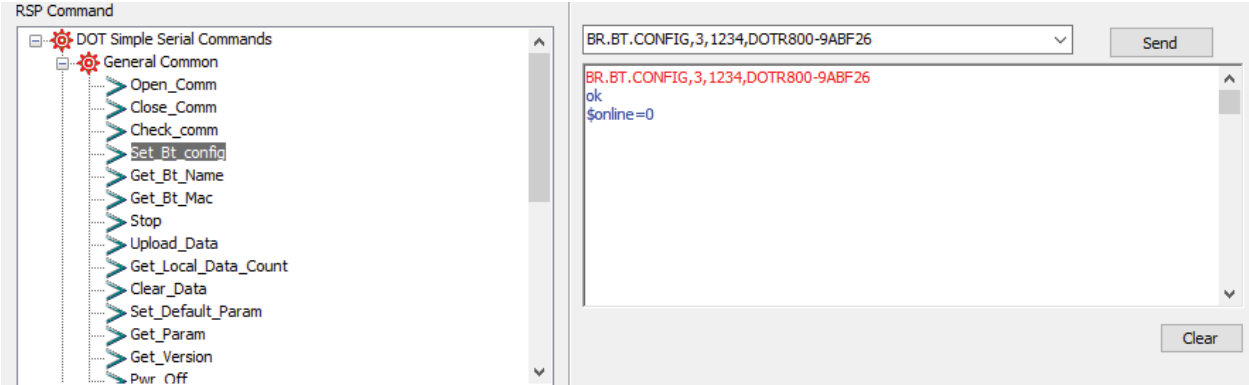
###### <RPT-900>

	Response			
	CR	SP	VAL	END
Success			<i>"Relink device after a while"</i>	WrWn
Fail				WrWn

###### <RPT-100>

	Command			
	CR	SP	VAL	END
Success	\$online=0			WrWn
Fail	err=		<i>"USB Connect"</i>	WrWn

## Example



### 7.1.5. Get\_Bt\_Name

Retrieve Bluetooth DEVICE name of READER.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
br.bt.name	,		WrWn

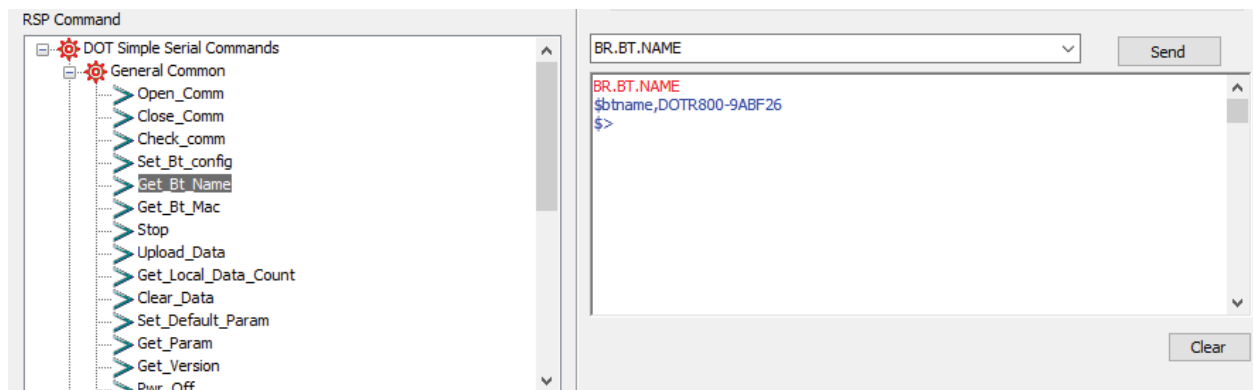
#### Response

	Command			
	CR	SP	VAL	END
Success			<bt name>	WrWn

#### Response Field Descriptions

Field	Format	Description
<bt name>	\$btname,XXXX	The Device name may differ depending on model.

#### Example





### 7.1.6. Get\_Bt\_Mac

Retrieve Bluetooth MAC Address of READER.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
br.bt.mac			WrWn

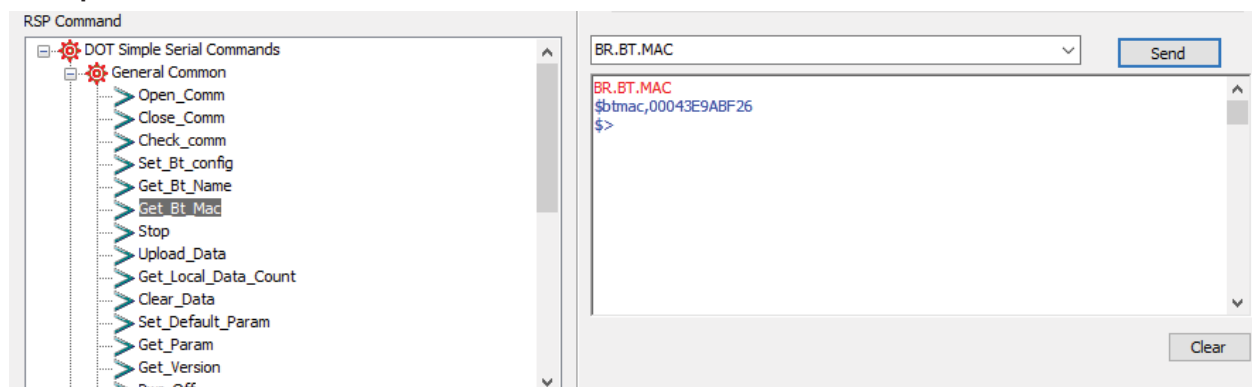
#### Response

	Command			
	CR	SP	VAL	END
Success			<mac address>	WrWn
Fail	err=		<error code>	WrWn

#### Response Field Descriptions

Field	Format	Description
<mac address>	\$btmac,XXXXXXXXXXXX	12 digit MAC address

#### Example



### 7.1.7. Upload\_Data

Transmit saved data on READER memory.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
br.upl	,	<Index>	,	<Count>	WrWn

#### Command Field Descriptions

Field	Value	Description
<Index>	0~999	Input number of data list.
<Count>	1~100	Assign quantity of data to read from assigned index.

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

Data		
DR	SP	END
<memory data>		WrWn

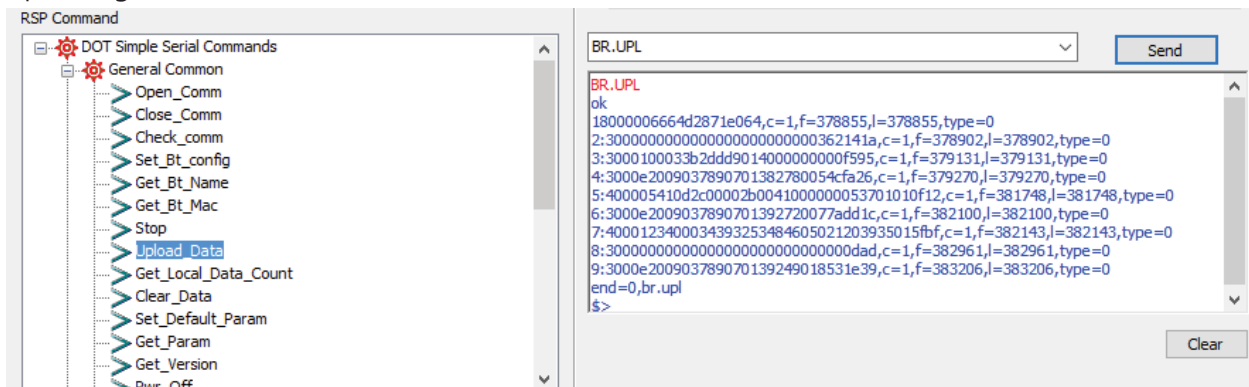
Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	br.upl	WrWn

#### Response Field Descriptions

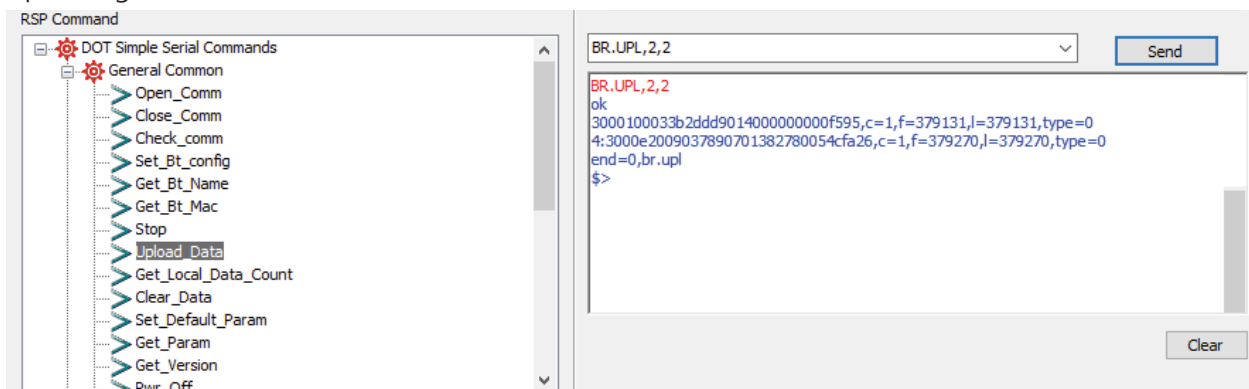
Field	Format
<memory data>	<index>:<data>,c=<read count>,f=<first read time>,l=<last read time>,t=<type>

#### Example

## Uploading all data



Uploading two data from third index,



### 7.1.8. Clear\_Data

Delete the data on READER memory.

#### Command Packet Format

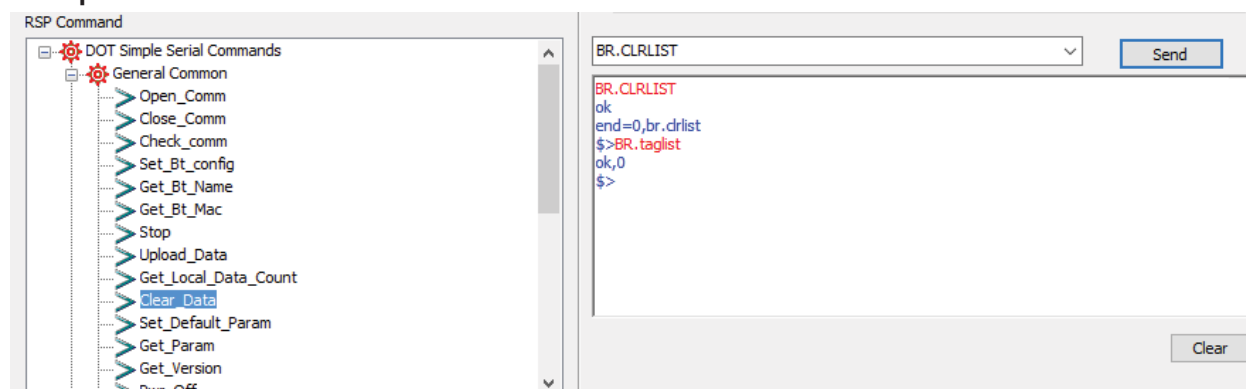
CMD	SP_0	PARAM_0	END
br.clrlst			WrWn

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	br.clrlst	WrWn

#### Example



### 7.1.9. Set\_Default\_Param

Resets READER configuration values. Refer to [Device Default Value](#) for more information on initial setting

#### Command Packet Format

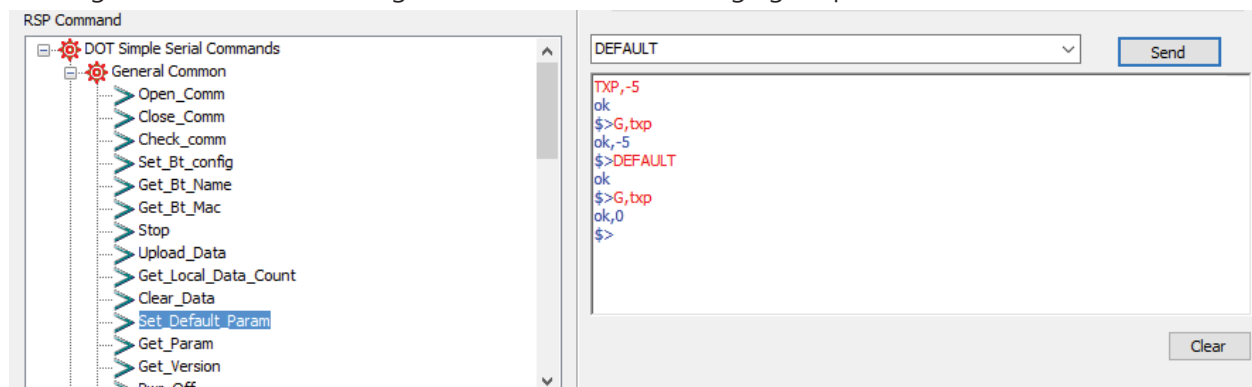
CMD	SP_0	PARAM_0	END
default			WrWn

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example

Reading RF Power after resetting to initial values then changing RF power to ,



### 7.1.10. Get\_Param

Retrieves option value on Device, RFID and/or Scanner .

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
g	,	<Command>	,	<Param>	WrWn

#### Command Field Descriptions

Field	Value	Description
<Command>	<a href="#">alert</a> , <a href="#">br.alert</a> , <a href="#">br.autooff</a> , <a href="#">br.vib</a> , <a href="#">br.vol</a> , <a href="#">chs</a> , <a href="#">iparam</a> , <a href="#">ireport</a> , <a href="#">lbt</a> , <a href="#">linkp</a> , <a href="#">rf.data</a> , <a href="#">rf.fastid</a> , <a href="#">rf.fixdata</a> , <a href="#">rf.prefix</a> , <a href="#">rf.suffix1</a> , <a href="#">rf.suffix2</a> , <a href="#">rf.tagfocus</a> , <a href="#">sc.param</a> , <a href="#">sc.report</a> <a href="#">time</a>	Input COMMAND according to option value.
<Param>	<Channel>, <Index> ...	Input PARAMETER. This is ignored when PARAMETER is not in use. ex) g,chs,0: Retrieves all channel number being used. g,chs,1: Retrieves usage status on channel 1. g,m,1: Retrieves select configuration value on index 1.

#### Response

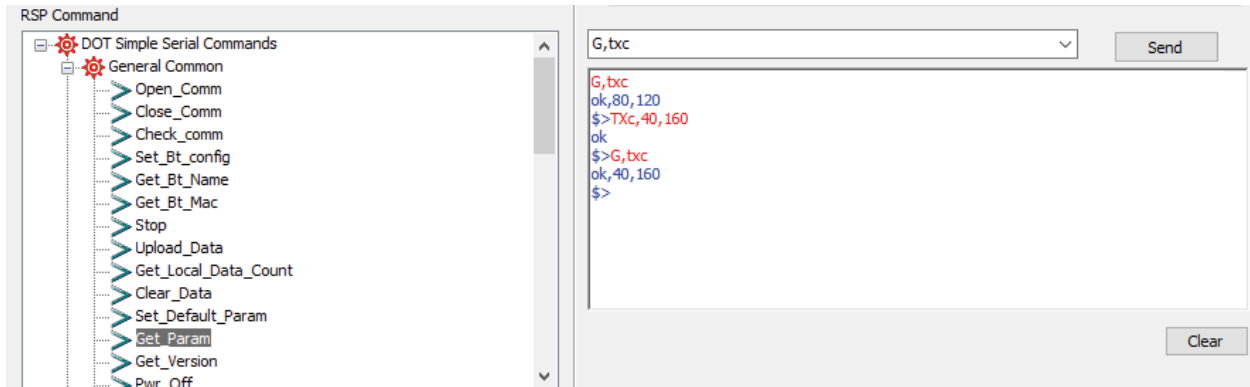
	Command			
	CR	SP	VAL	END
Success	ok	,	<option value>	WrWn
Fail	err=		<error code>	WrWn

#### Response Field Descriptions

Field	Description
<option value>	Returns option value. Format may differ depending on COMMAND. For more

information on COMMAND refer to Field information.

## Example



### 7.1.11. Get\_Version

Returns F/W version of READER.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
ver			WrWn

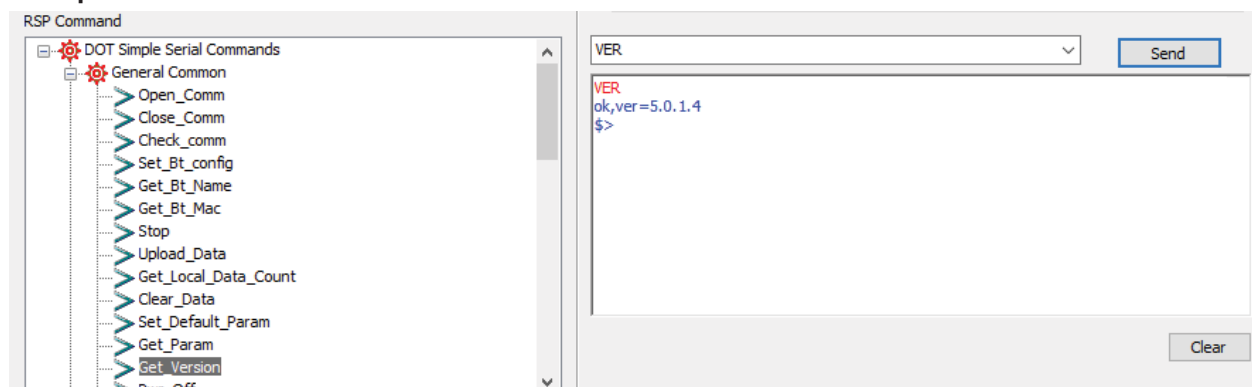
#### Response

	Command			
	CR	SP	VAL	END
Success	ok	,	<f/w version>	WrWn
Fail	err=		<error code>	WrWn

#### Response Field Descriptions

Field	Format	Description
<f/w version>	ver=x.x.x.x	Returns F/W version in 4 digits.

#### Example





### 7.1.12. Pwr\_Off

Power off READER. Event message can be sent to HOST while powering off depending on [Reader\\_Status\\_Report](#) while powering off depending on Reader\_Status\_Report configuration.

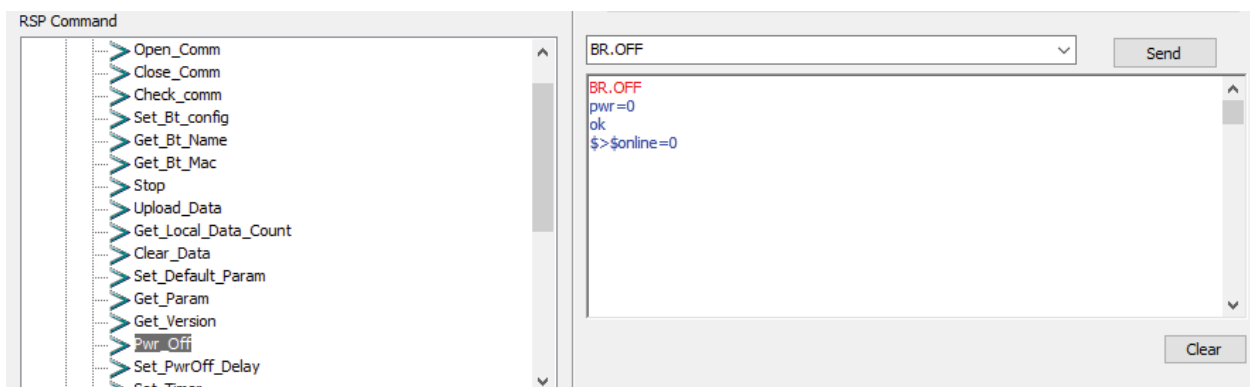
#### Command Packet Format

CMD	SP_0	PARAM_0	END
br.off			WrWn

#### Response

	Command Response			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



### 7.1.13. Set\_PwrOff\_Delay

Set auto power off time when the READER is not in use. Retrieve current configuration value through [Get\\_Param](#) COMMAND.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
br.autooff	,	<Delay>	,	<Nv>	WrWn

#### Command Field Descriptions

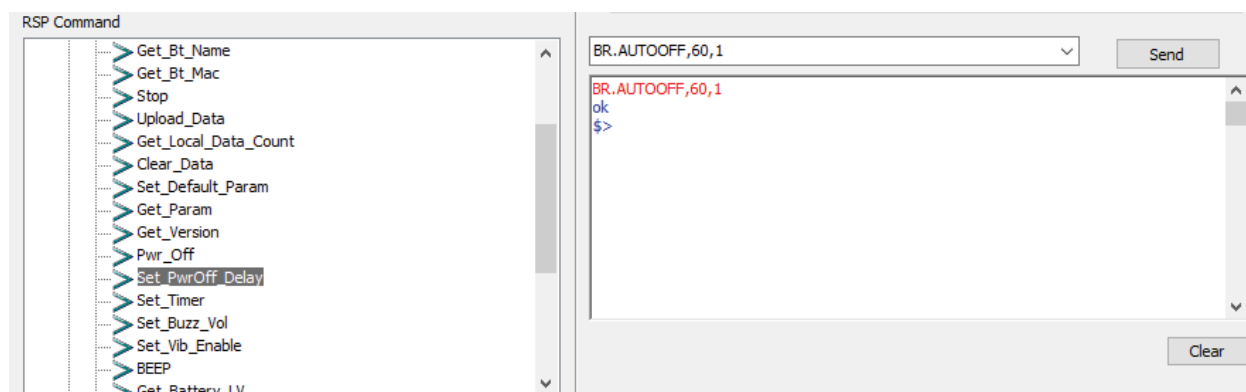
Field	Value	Description
<Delay>	0: Infinite	Input auto power off time. (unit. sec)
	1~86400: (D=300)	Input values above 86400secs(24hrs) will be set to 0.
<Nv>	0: Disable	Input in order to enter setting values to internal memory.
	1: Enable	Settings will remain even after powering off-on the device when Enabled .

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example

Power Off Delay set to 60 seconds,



#### 7.1.14. Set\_Timer

The reader sets the time to the timer. [Get\\_Param](#) command can be used to get the current timer value.

##### Command Packet Format

CMD	SP_0	PARAM_0	END
time	,	<Time>	WrWn

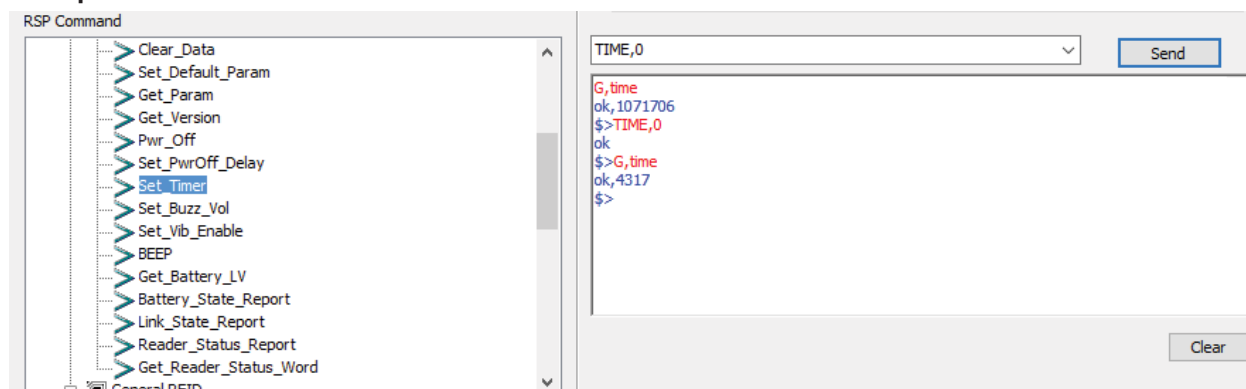
##### Command Field Descriptions

Field	Value	Description
<Time>	0~0xFFFFFFFF	타이머 초기값을 입력합니다. (unit. msec)

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

##### Example



### 7.1.15. Set\_Buzz\_Vol

Set Buzzer volume. Retrieve current setting using [Get\\_Param](#).

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
br.vol	,	<Volume>	,	<Nv>	WrWn

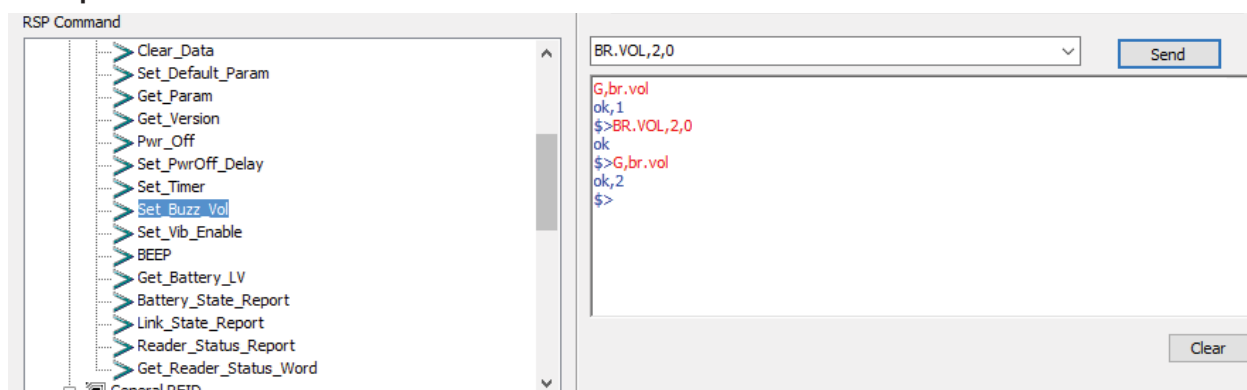
#### Command Field Descriptions

Field	Value	Description
<Volume>	0: Mute	Input Buzzer volume.
	1: Min	
	2: Max (D)	
<Nv>	0: Disable	Input to save settings in memory. Settings will be kept when Enable.
	1: Enable	

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



### 7.1.16. Beep

Turn Beep buzzer On or Off.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
br.beep	,	<On>	WrWn

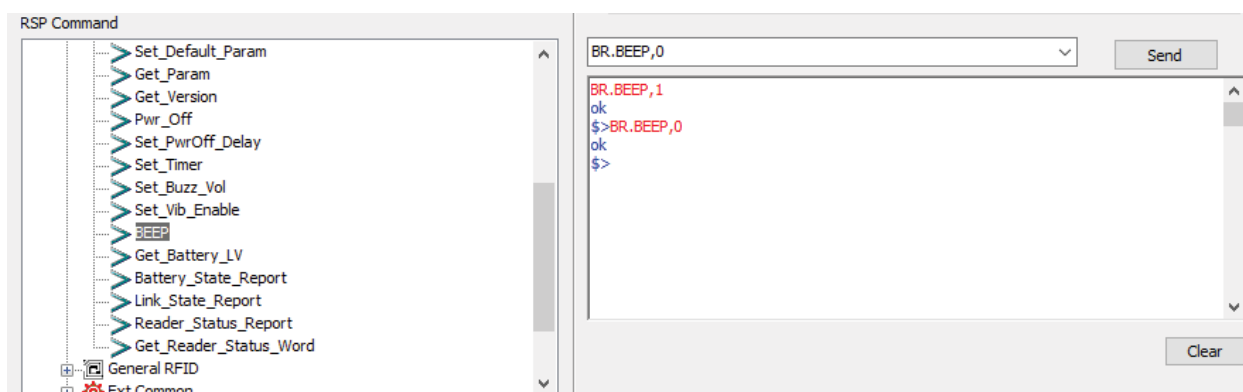
#### Command Field Descriptions

Field	Value	Description
<On>	0: Beep Off 1: Beep On	Turn Beep buzzer on or off.

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



### 7.1.17. Get\_Battery\_LV

Retrieves battery level.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
br.batt	,	<Test>	WrWn

#### Command Field Descriptions

Field	Value	Description
<Test>	0: Disable (D) 1: Enable	<i>R-800 only supports Disable.</i>

#### Response

	Command			
	CR	SP	VAL	END
Success	ok	,	<battery Level>	WrWn
Fail	err=		<error code>	WrWn

#### Response Field Descriptions

Field	Format	Description
<battery Level>	<Level>,x=0xXXXXXX	Format returned depends on <Test>field setting.

#### Example



### 7.1.18. Link\_Status\_Report

Sends an event to the host when reader's connection status changes. [Get\\_Param](#) command can be used to retrieve the current setting.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
alert	,	<Report>	WrWn

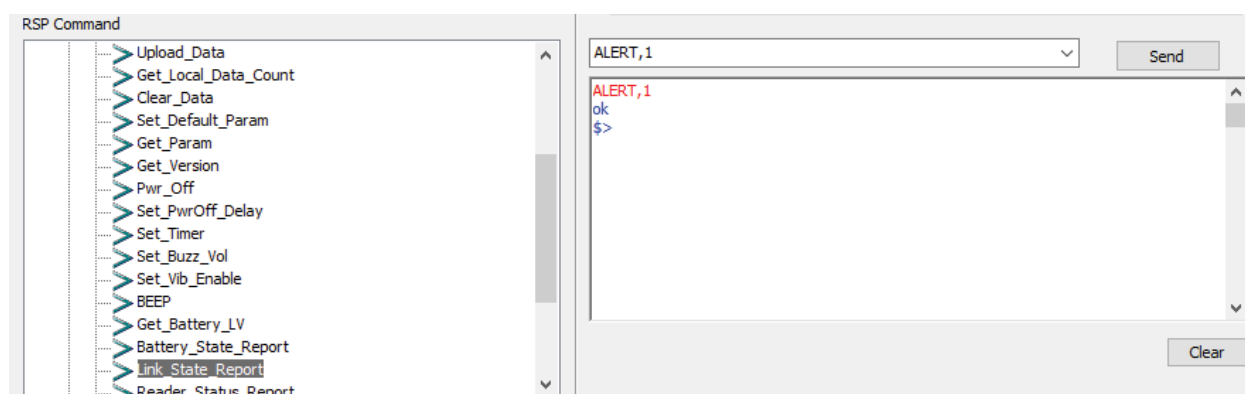
#### Command Field Descriptions

Field	Value	Description
<Report>	0: Disable 1: Enable (D)	Enter whether to send reader link state changes to the host. Output is \$online=x

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



### 7.1.19. Reader\_Status\_Report

Sends an event to the host when the state of reader changes. [Get\\_Param](#) command can be used to retrieve the current settings.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2
br.alert	,	<Link>	,	<Trigger>	,
PARAM_2	SP_3	PARAM_3	SP_4	PARAM_4	END
<LowBattery>	,	<AutoOff>	,	<Power>	WrWn

#### Command Field Descriptions

Field	Value	Description
<Link>	0: Disable 1: Enable (D)	Transmit \$online=x<END> format to host when link state changes during Enable.
<Trigger>	0: Disable 1: Enable (D)	Transmit \$trigger=x<END> format to host when trigger state changes during Enable.
<LowBattery>	0: Disable 1: Enable (D)	Transmit \$lowbat=x<END> format to host when low battery state changes during Enable.
<AutoOff>	0: Disable 1: Enable (D)	Transmit \$autooff=1<END> form to host when Auto Off is Enable. <i>Not supported in RPT-100.</i>
<Power>	0: Disable 1: Enable (D)	Transmit \$pwr=0<END> format when reader is powered off during Enable.

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn



## Example

RSP Command

- Clear\_Data
- Set\_Default\_Param
- Get\_Param
- Get\_Version
- Pwr\_Off
- Set\_PwrOff\_Delay
- Set\_Timer
- Set\_Buzz\_Vol
- BEEP
- Get\_Battery\_LV
- Battery\_State\_Report
- Link\_State\_Report
- Reader\_Status\_Report

BR.ALERT,0,1,0,0,0

Send

```
$trigger=3,$batt=0
$trigger=2,$batt=0
$trigger=1,$batt=0
$trigger=0,$batt=0
BR.ALERT,0,0,0,0,0
ok
$>BR.ALERT,0,1,0,0,0
ok
$>$trigger=1,$batt=0
$trigger=0,$batt=0
```

Clear

## 7.2. RFID

Used to read RFID tag and configure the RFID environment

### 7.2.1. Inventory

Start RFID Inventory. Retrieve tag ID values.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2	PARAM_2	END
i	,	<Single>	,	<Select>	,	<Timeout>	WrWn

#### Field Descriptions

Field	Value	Description
<Single>	0: Continuous (D) 1: Single	Sets whether to stop reading when reading single tag.
<Select>	0: Non-Select Mode (D) 1: Non-Select Mode 2: Exclusion Select Mode 3: Select Mode	Sets whether to read only selected tags. For the Select setting, see the <a href="#">Select</a> command.
<Timeout>	0: Infinite (D) 1 ~ 0xFFFFFFFF: Timeout	Sets Inventory Timeout value. (unit. msec)

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

Data					
DR_1	SP	DR_2	SP	DR3	END
<tag id>	,	<time>	,	<rssI>	WrWn

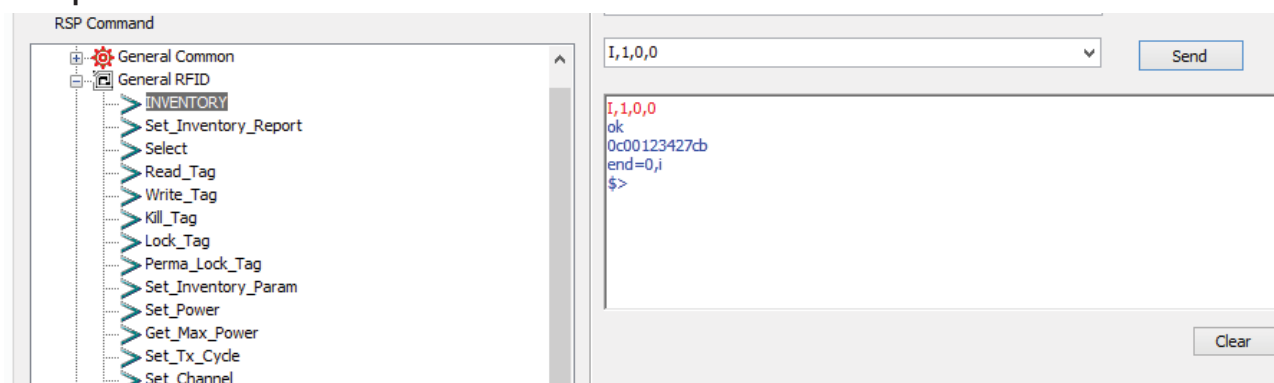
Operation
-----------

OR	EC	SP	CMD	END
end=	<error code>	,	i	WrWn

### Response Field Descriptions

Field	Format	Description
<tag id>	PC + EPC + CRC	PC Length: 1word EPC Length: Variable(depends on PC) CRC Length: 1word May differ depending on <a href="#">RFID_Data_Format</a> setting.
<time>	t=XXXXXX	Outputs the read time. May differ depending on <a href="#">Set_Inventory_Report</a> setting.
<rss>	s=-XX.X	Outputs the received signal strength. May differ depending on <a href="#">Set_Inventory_Report</a> setting.

### Example



The screenshot shows the RSP Command interface. On the left, a tree view under 'General Common' shows 'General RFID' expanded, with 'INVENTORY' selected. Below it, a list of commands is shown: Set\_Inventory\_Report, Select, Read\_Tag, Write\_Tag, Kill\_Tag, Lock\_Tag, Perma\_Lock\_Tag, Set\_Inventory\_Param, Set\_Power, Get\_Max\_Power, Set\_Tx\_Cycle, and Set\_Channel. On the right, a text input field contains 'I,1,0,0'. Below it, a 'Send' button is visible. The response window shows the following text: 'I,1,0,0', 'ok', '0c00123427cb', 'end=0,i', and '\$>'. A 'Clear' button is at the bottom right of the response window.

### 7.2.2. Stop

Abort the operation for the instruction currently being executed.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
S			WrWn

#### Response

Operation				
OR	EC	SP	CMD	END
end=	-1	,	<command>	WrWn

#### Response Field Descriptions

Field	Description
<command>	Return command that has stopped working.

#### Example

RSP Command

General Common

Open\_Comm

Close\_Comm

Check\_comm

Set\_Bt\_config

Get\_Bt\_Name

Get\_Bt\_Mac

Stop

Upload\_Data

Get\_Local\_Data\_Count

Clear\_Data

Set\_Default\_Param

Get\_Param

Get\_Version

Pwr\_Off

S

Send

```

I
ok
3000222233334444013727500730f658
30003005fb63ac1f3841ec880467f29e
300010000000000000000b00109f55c7
400005410d2c00002b0041000000053701010f12
30000000000000000000a0010336045
S
30003005fb63ac1f3841ec880467f29e
end=-1,i
$>

```

Clear

### 7.2.3. Set\_Inventory\_Report

During [Inventory](#), set data transfer format. [Get\\_Param](#) command can be used to retrieve current settings.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
ireport	,	<Time>	,	<Rssi>	WrWn

#### Command Field Descriptions

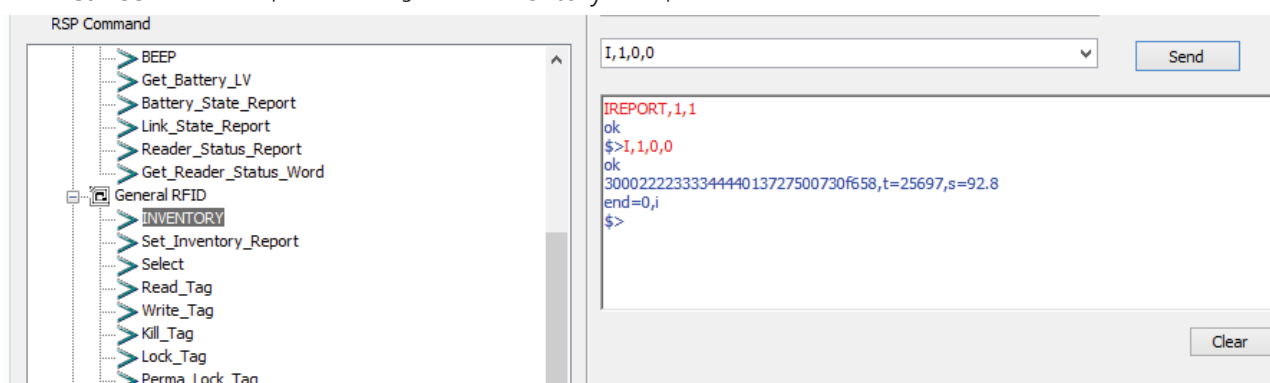
Field	Value	Description
<Time>	0: Disable (D)	When reading tag, input whether to output timer time. Output in t=XXXXXX format.
	1: Enable	
<Rssi>	0: Disable	When reading tag, input whether to output RSSI output. Output in s=-XX.X format.
	1: Enable (D)	

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example

TIME. & RSSI value are output after setting it in the Inventory to output.



#### 7.2.4. Select

Read only the information of specific tags, use the Select command to set the tag information.

[Get\\_Param](#) command can be used to retrieve the current settings.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2	PARAM_2	SP_3
m	,	<Index>	,	<Length>	,	<MemBank>	,
PARAM_3	SP_4	PARAM_4	SP_5	PARAM_5	SP_6	PARAM_6	END
<Offset>	,	<SelectData>	,	<Target>	,	<Action>	WrWn

#### Command Field Descriptions

Field	Value	Description
<Index>	0~7	Input index number of the list for setting Select. Up to eight can be saved.
<Length>	0~255	Input the data length for setting Select (unit. bit). 0 disables Select.
<MemBank>	0: RESERVED 1: EPC 2: TID 3: USER	Input the tag memory bank of the data located. Refer to <a href="#">UHF Tag Logical Memory Map</a> .
<Offset>	0~255	Input the Offset of address located where the data of memory bank exists. (unit. bit)
<SelectData>	Hex String	Input data to configure Select setting.
<Target>	0: Inventoried (S0) 1: Inventoried (S1) 2: Inventoried (S2) 3: Inventoried (S3) 4: Select (D)	Generally set as 4 to use Select function.
<Action>	0~7 (D=1)	Generally set to 0 when specifying only one tag, 1 when specifying multiple tags, or 4 when excluding only one tag.

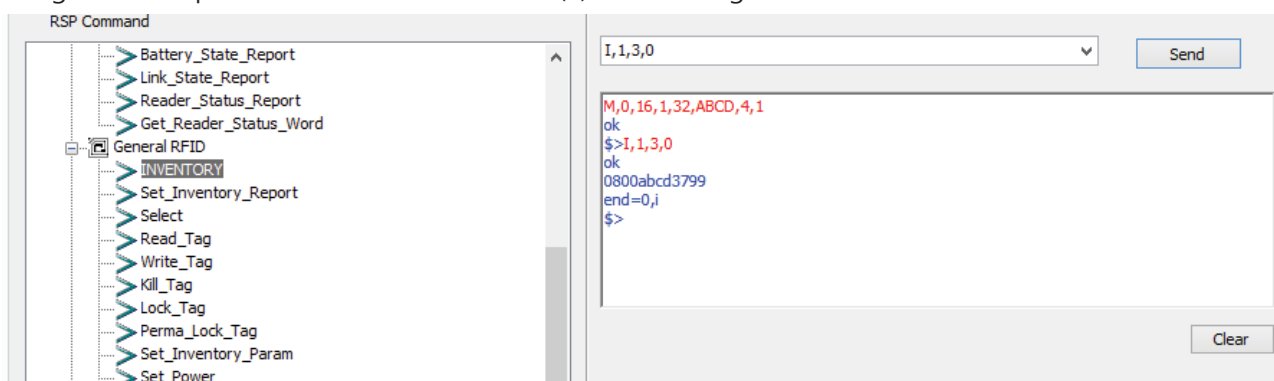
Action	Tag Matching	Tag Not-Matching
000	assert <b>SL</b> or <b>inventoried</b> → A	deassert <b>SL</b> or <b>inventoried</b> → B
001	assert <b>SL</b> or <b>inventoried</b> → A	do nothing
010	do nothing	deassert <b>SL</b> or <b>inventoried</b> → B
011	negate <b>SL</b> or (A → B, B → A)	do nothing
100	deassert <b>SL</b> or <b>inventoried</b> → B	assert <b>SL</b> or <b>inventoried</b> → A
101	deassert <b>SL</b> or <b>inventoried</b> → B	do nothing
110	do nothing	assert <b>SL</b> or <b>inventoried</b> → A
111	do nothing	negate <b>SL</b> or (A → B, B → A)

## Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

## Example

When selecting the first four digits of ABCD tag of EPC ID(16bit) with EPC ID value of 0800ABCD and using <Select> parameter set to Select Mode(3) after setting index 0 as shown below:



### 7.2.5. Read\_Tag

Read data from tag memory.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2	PARAM_2	SP_3
r	,	<Length>	,	<MemBank>	,	<Offset>	,
PARAM_3	SP_4	PARAM_4	SP_5	PARAM_5	SP_6	PARAM_6	END
<AccPwd>	,	<Single>	,	<Select>	,	<Timeout>	WrWn

#### Command Field Descriptions

Field	Value	Description
<Length>	1~255 (D=1)	Input length of data to read. (unit. word)
<MemBank>	0: RESERVED 1: EPC 2: TID 3: USER	Input memory bank of tag to read. Refer to <a href="#">UHF Tag Logical Memory Map</a> .
<Offset>	0~255	Input Offset value of address of data to read. (unit. word)
<AccPwd>	Hex or Dec Value (D=0) ex) 0x10101010 or 269488144	Input Access Password.
<Single>	0: Continuous (D) 1: Single	Sets to stop when one tag is read.
<Select>	0: Non-Select Mode (D) 1: Non-Select Mode 2: Exclusion Select Mode 3: Select Mode	Sets whether to read data of Select tags only. Refer to <a href="#">Select</a> command for Select setting.
<Timeout>	0: Infinite (D) 1 ~ 0xFFFFFFFF: Timeout	Sets Timeout value. (unit. msec)

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn



	Data			
	DR_1	SP	DR_2	END
Success	<read data>	,	<tag id>	WrWn
Fail	<acc error>	,	<tag id>	WrWn

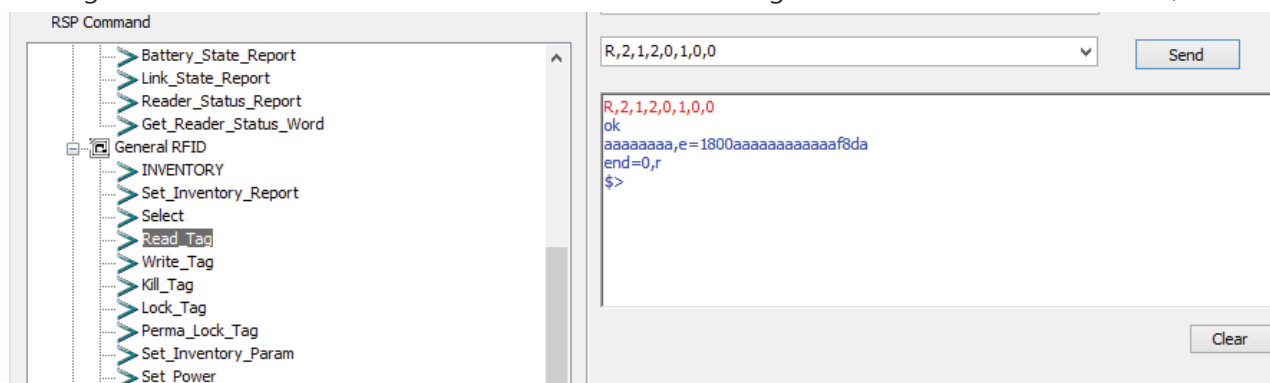
Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	r	WrWn

### Response Field Descriptions

Field	Format	Description
<read data>	hex string	Return read data from designated memory area.
<tag id>	e=XXXX...	Return ID value of tag from access tag. May differ depending on <a href="#">RFID_Data_Format</a> settings.
<acc error>	err_tag=XX or err_op=XX	Return access error.

### Example

Reading 2word data "aaaaaaaa" from EPC bank address 2 of tag with EPC ID of 0xaaaaaaaaaaaaa,



### 7.2.6. Write\_Tag

Write data on tag memory.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2
W	,	<Length>	,	<MemBank>	,
PARAM_2	SP_3	PARAM_3	SP_4	PARAM_4	SP_5
<Offset>	,	<WriteData>	,	<AccPwd>	,
PARAM_5	SP_6	PARAM_6	SP_7	PARAM_7	END
<Single>	,	<Select>	,	<Timeout>	WrWn

#### Command Field Descriptions

Field	Value	Description
<Length>	1~255	Input length of data to write. (unit. word)
<MemBank>	0: RESERVED 1: EPC 2: TID 3: USER	Input memory bank of tag to write. Refer to <a href="#">UHF Tag Logical Memory Map</a> .
<Offset>	0~255	Input Offset value of data on address.(unit. word)
<WriteData>	Hex String	Input data to write. (Length * 4digit)
<AccPwd>	Hex or Dec Value (D=0)	Input Access Password. ex) 0x10101010 or 269488144
<Single>	0: Continuous (D) 1: Single	Sets to stop when one tag is written.
<Select>	0: Non-Select Mode (D) 1: Non-Select Mode 2: Exclusion Select Mode 3: Select Mode	Sets whether to write data of Select tags only. Refer to <a href="#">Select</a> command for Select setting.
<Timeout>	0: Infinite (D) 1 ~ 0xFFFFFFFF: Timeout	Set Timeout value. (unit. msec)

## Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

	Data			
	DR_1	SP	DR_2	END
Success	ok	,	<tag id>	WrWn
Fail	<acc error>	,	<tag id>	WrWn

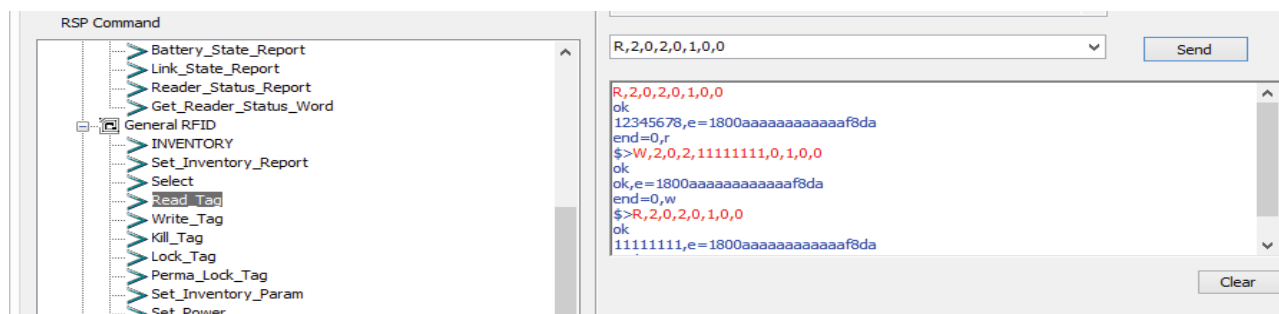
Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	w	WrWn

## Response Field Descriptions

Field	Format	Description
<tag id>	e=XXXX...	Return ID value of tag from accessed tag. May differ depending on <a href="#">RFID_Data_Format</a> .
<acc error>	err_tag=XX or err_op=XX	Return access error.

## Example

Writing 2word data "11111111" from RESERVED bank address 2 of tag with EPC ID of 0xaaaaaaaa,



### 7.2.7. Kill\_Tag

Disable the use of tag.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1
kill	,	<KillPwd>	,	<Single>
SP_2	PARAM_2	SP_3	PARAM_3	END
,	<Select>	,	<Timeout>	WrWn

#### Command Field Descriptions

Field	Value	Description
<KillPwd>	Hex or Dec Value	Input Kill Password. 0 cannot be used for Kill Password. Change Kill Password before usage. ex) 0x10101010 or 269488144
<Single>	0: Continuous (D) 1: Single	Sets to stop when one tag is written.
<Select>	0: Non-Select Mode (D) 1: Non-Select Mode 2: Exclusion Select Mode 3: Select Mode	Sets whether to write data of Select tags only. Refer to <a href="#">Select</a> command for Select setting.
<Timeout>	0: Infinite (D) 1 ~ 0xFFFFFFFF: Timeout	Set Timeout value. (unit. msec)

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

	Data			
	DR_1	SP	DR_2	END
Success	ok	,	<tag id>	WrWn
Fail	<acc error>	,	<tag id>	WrWn

Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	kill	WrWn

### Response Field Descriptions

Field	Format	Description
<tag id>	e=XXXX...	Return ID value of tag from accessed tag. May differ depending on <a href="#">RFID_Data_Format</a> .
<acc error>	err_tag=XX or err_op=XX	Return access error.

### Example

*Kill action will work normally even if there is Err\_op=9 response as Tag Kill will stop the operation of Tag.*

RSP Command

- Battery\_State\_Report
- Link\_State\_Report
- Reader\_Status\_Report
- Get\_Reader\_Status\_Word
- General RFID
  - INVENTORY
  - Set\_Inventory\_Report
  - Select
  - Read\_Tag
  - Write\_Tag
  - Kill\_Tag
  - Lock\_Tag
  - Perma\_Lock\_Tag
  - Set\_Inventory\_Param
  - Set\_Power

s

Send

```

KILL,0x12345678,1,0,0
ok
err_op=9,e=3000300833b2ddd901400000005423ca
end=0,kill
$>I,0,0,0
ok
s
end=-1,i
$>

```

Clear

### 7.2.8. Lock\_Tag

Locks or un-locks the Password field or EPC, TID, USER memory bank of reserved memory bank.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2	PARAM_2	SP_3
lock	,	<UserBank>	,	<TidBank>	,	<EpcBank>	,
PARAM_3	SP_4	PARAM_4	SP_5	PARAM_5	SP_6	PARAM_6	SP_7
<AccPwdBank>	,	<KillPwdBank>	,	<AccPwd>	,	<Single>	,
PARAM_7	SP_8	PARAM_8	END				
<Select>	,	<Timeout>	WrWn				

#### Command Field Descriptions

Field	Value	Description
<UserBank>	0: Un-Lock 1: Lock	Input whether to Lock or Un-Lock. Leaving out will remain its current status.
<TidBank>	0: Un-Lock 1: Lock	Input whether to Lock or Un-Lock. Leaving out will remain its current status.
<EpcBank>	0: Un-Lock 1: Lock	Input whether to Lock or Un-Lock. Leaving out will remain its current status.
<AccPwdBank>	0: Un-Lock 1: Lock	Input whether to Lock or Un-Lock. Leaving out will remain its current status.
<KillPwdBank>	0: Un-Lock 1: Lock	Input whether to Lock or Un-Lock. Leaving out will remain its current status.
<AccPwd>	Hex or Dec Value (D=0)	Input Access Password. ex) 0x10101010 or 269488144
<Single>	0: Continuous (D) 1: Single	Sets to stop when one tag is written.
<Select>	0: Non-Select Mode (D) 1: Non-Select Mode 2: Exclusion Select Mode 3: Select Mode	Sets whether to write data of Select tags only. Refer to <a href="#">Select</a> command for Select setting.
<Timeout>	0: Infinite (D) 1 ~ 0xFFFFFFFF: Timeout	Set Timeout value. (unit. msec)

## Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

	Data			
	DR_1	SP	DR_2	END
Success	ok	,	<tag id>	WrWn
Fail	<acc error>	,	<tag id>	WrWn

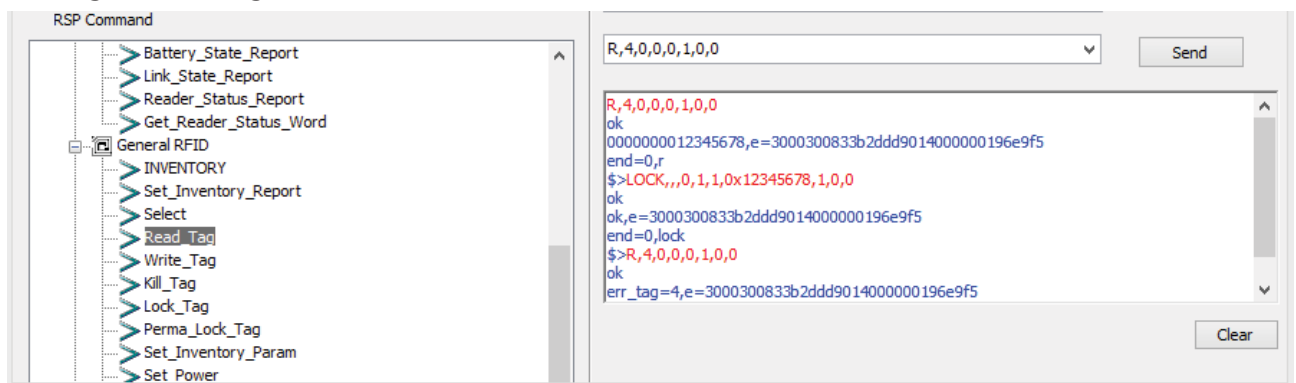
Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	lock	WrWn

## Response Field Descriptions

Field	Format	Description
<tag id>	e=XXXX...	Return the tag ID value that has been accessed. May differ depending on <a href="#">RFID_Data_Format</a> .
<acc error>	err_tag=XX or err_op=XX	Return access error.

## Example

Reading after locking Access Password and Kill Password field of RESERVED bank,



### 7.2.9. Perma\_Lock\_Tag

Permanently lock or un-lock the Password field or EPC, TID, USER memory bank of reserved memory bank.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2	PARAM_2	SP_3
lockperm	,	<UserBank>	,	<TidBank>	,	<EpcBank>	,
PARAM_3	SP_4	PARAM_4	SP_5	PARAM_5	SP_6	PARAM_6	SP_7
<AccPwdBank>	,	<KillPwdBank>	,	<AccPwd>	,	<Single>	,
PARAM_7	SP_8	PARAM_8	END				
<Select>	,	<Timeout>	WrWn				

#### Command Field Descriptions

Field	Value	Description
<UserBank>	0: Un-Lock 1: Lock	Input whether to permanently Lock or Un-Lock. Leaving out will remain its current status.
<TidBank>	0: Un-Lock 1: Lock	Input whether to permanently Lock or Un-Lock. Leaving out will remain its current status.
<EpcBank>	0: Un-Lock 1: Lock	Input whether to permanently Lock or Un-Lock. Leaving out will remain its current status.
<AccPwdBank>	0: Un-Lock 1: Lock	Input whether to permanently Lock or Un-Lock. Leaving out will remain its current status.
<KillPwdBank>	0: Un-Lock 1: Lock	Input whether to permanently Lock or Un-Lock. Leaving out will remain its current status.
<AccPwd>	Hex or Dec Value (D=0)	Input Access Password. ex) 0x10101010 or 269488144
<Single>	0: Continous (D) 1: Single	Sets to stop when one tag is written.
<Select>	0: Non-Select Mode (D) 1: Non-Select Mode 2: Exclusion Select Mode 3: Select Mode	Sets whether to write data of Select tags only. Refer to <a href="#">Select</a> command for Select setting.
<Timeout>	0: Infinite (D)	Set Timeout value. (unit. msec)



	1 ~ 0xFFFFFFFF: Timeout	
--	-------------------------	--

## Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

	Data			
	DR_1	SP	DR_2	END
Success	ok	,	<tag id>	WrWn
Fail	<acc error>	,	<tag id>	WrWn

Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	lockperm	WrWn

## Response Field Descriptions

Field	Format	Description
<tag id>	e=XXXX...	Return the tag ID value that has been accessed. May differ depending on <a href="#">RFID_Data_Format</a> .
<acc error>	err_tag=XX or err_op=XX	Return access error.

## Example

Reading after permanently locking Access Password and Kill Password field of RESERVED bank,

RSP Command

- Battery\_State\_Report
- Link\_State\_Report
- Reader\_Status\_Report
- Get\_Reader\_Status\_Word
- General RFID
  - INVENTORY
  - Set\_Inventory\_Report
  - Select
  - Read\_Tag
  - Write\_Tag
  - Kill\_Tag
  - Lock\_Tag
  - Perma\_Lock\_Tag
  - Set\_Inventory\_Param
  - Set\_Power

LOCKPERM,0,0,0,1,0,0x12345678,1,0,0

Send

```

LOCKPERM,,,,,1,1,0x12345678,1,0,0
ok
ok,e=3000300833b2ddd9014000000196e9f5
end=0,lockperm
$>LOCKPERM,,,,,0,0,0x12345678,1,0,0
ok
err_tag=4,e=3000300833b2ddd9014000000196e9f5
end=0,lockperm
$>

```

Clear

### 7.2.10. Set\_Inventory\_Param

Set options (Session, Q, Inventory Flag) to be applied in Inventory mode. The [Get\\_Param](#) command can be used to retrieve the current settings.

#### Command Packet Format

CMD	SP_0	PARAM0	SP_1	PARAM_1	SP_2	PARAM_2	END
iparam	,	<Session>	,	<Q>	,	<Inventory Flag>	WrWn

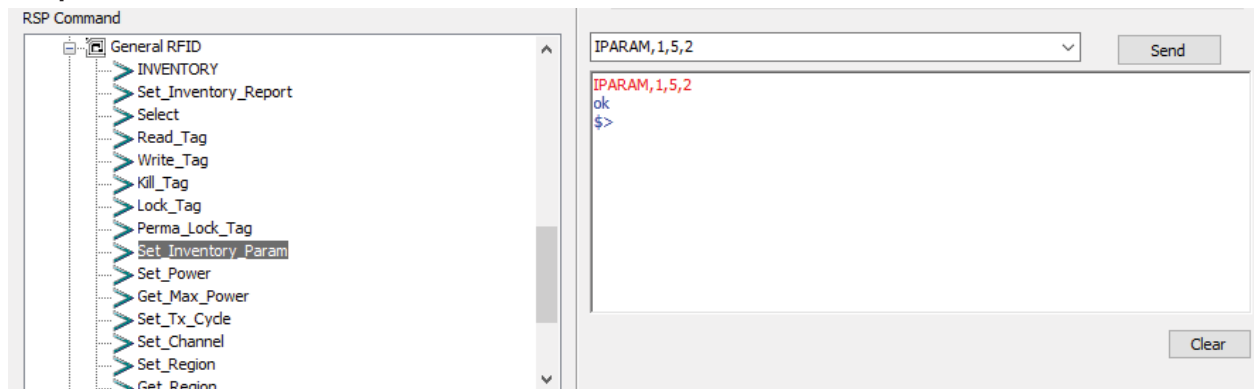
#### Command Field Descriptions

Field	Value	Description
<Session>	0: Session_0 1: Session_1 (D) 2: Session_2 3: Session_3	Sets the Inventory Flag return time when reading tag. Session_0: None Session_1: 500msec < persistence < 5sec Session_2: 2sec < persistence Session_3: 2sec < persistence
<Q>	0~15: (D=5)	Set the Q value. Generally when there are fewer tags, it uses a low value and when there are many tags it sets a high value. ( $Q = 2^n$ )
<Inventory Flag>	0: A (D) 1: B 2: AB	Sets the Inventory Flag of the tags to read. A: Inventory Flag reads tags only in the A state. B: Inventory Flag reads tags only in the B state. AB: Inventory Flag reads tags in both A or B state.

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

## Example



### 7.2.11. Set\_Power

By changing the RF output power, you can adjust the reading distance of the tags; the higher the power, the higher the battery consumption. [Get\\_Param](#) command can be used to retrieve the current settings.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
txp	,	<Power>	WrWn

#### Command Field Descriptions

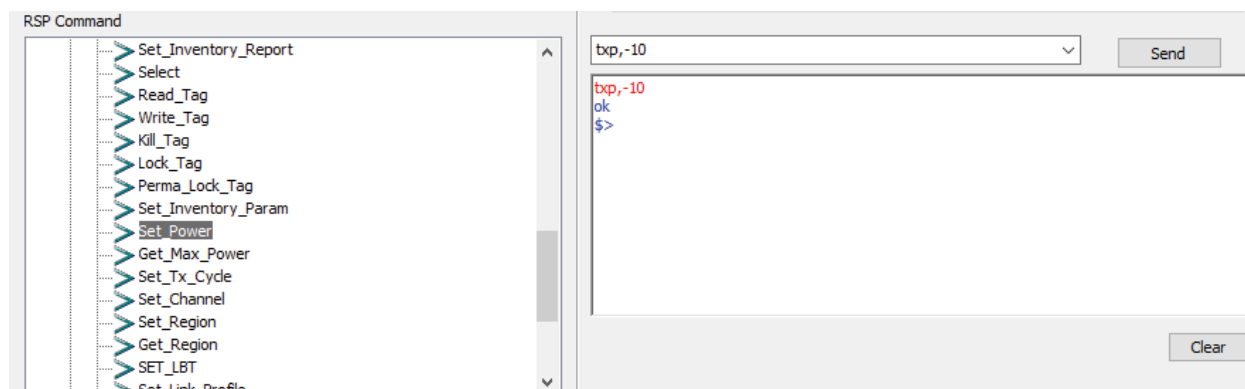
Field	Value	Description
<Power>	0 ~ (-MaxPower) (D=0)	Enter the amount of attenuation at maximum power. Only 0 or negative numbers are possible. error ! Reference source not found. You can know the maximum power supported by the reader in the reader from the reader through the command. (unit 1dB)

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example

-10 dB in attenuation when attenuating.



### 7.2.12. Get\_Max\_Power

Retrieve RF max power supported on the reader

#### Command Packet Format

CMD	SP_0	PARAM_0	END
maxp			WrWn

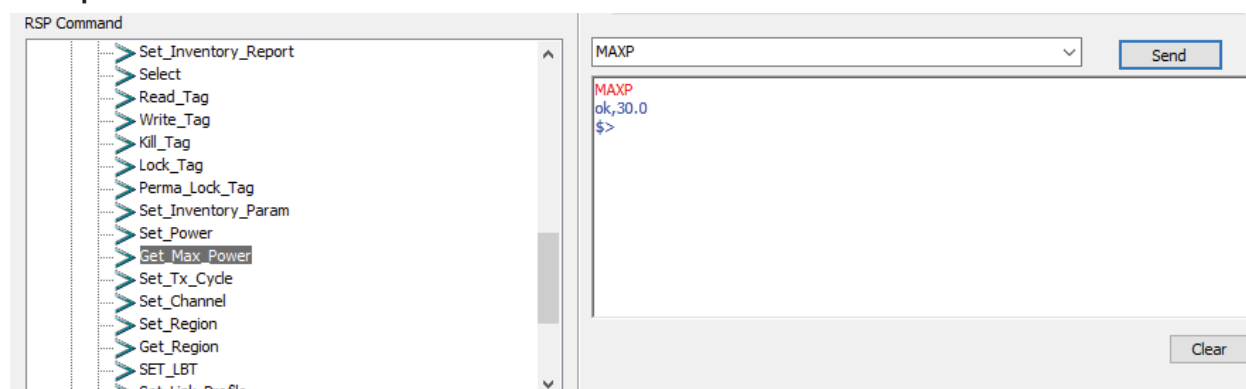
#### Response

	Command			
	CR	SP	VAL	END
Success	ok	,	<max power>	WrWn
Fail	err=		<error code>	WrWn

#### Response Field Descriptions

Field	Format	Description
<max power>	XX.X	Return RF max power

#### Example



### 7.2.13. Set\_Tx\_Cycle

With Tx On/Off cycle change, it can be adjusted reading speed of tags. When is on-time longer, battery consumption will be higher. Obtain current setting value through [Get\\_Param](#) command

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
txc	,	<On>	,	<Off>	WrWn

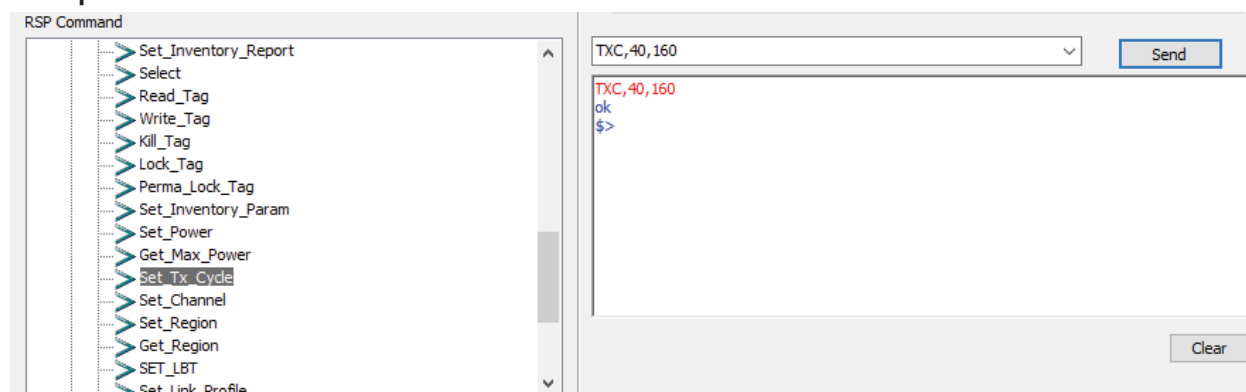
#### Command Field Descriptions

Field	Value	Description
<On>	40~400	Input Tx On time (unit. msec)
<Off>	0~255	Input Tx Off time (unit. msec)

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



#### 7.2.14. Set\_Channel

Enables / disables the specified frequency channel. Obtain currently active channel information when set <Param> to 0 of [Get\\_Param](#) command

##### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
chs	,	<Channel>	,	<Enable>	WrWn

##### Command Field Descriptions

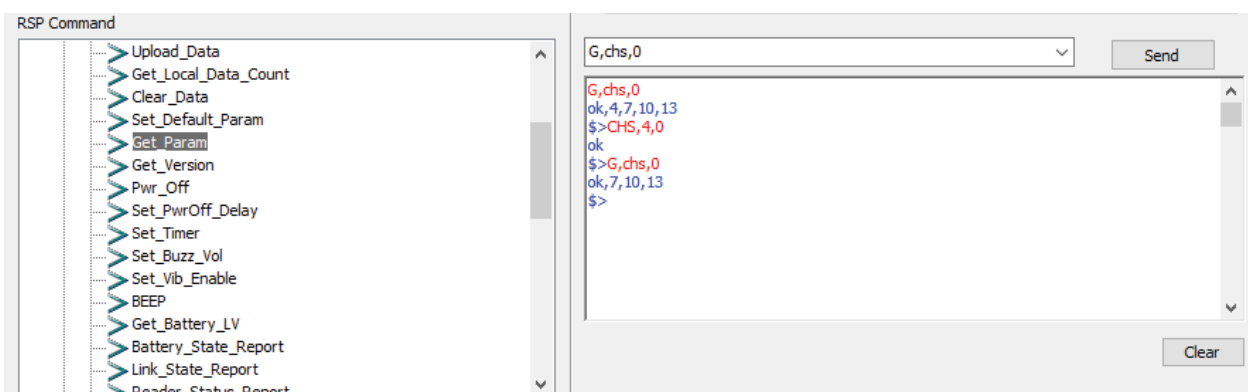
Field	Value	Description
<Channel>	1~	Input frequency channel number
<Enable>	0: Disable 1: Enable	Input if channel is used

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

##### Example

In case of enable channel 4 by [Set\\_Channel](#) command



### 7.2.15. Set\_LBT

In case of Japanese version, set to LBT mode. Obtain current setting value by [Get\\_Param](#)

#### Command Packet Format

CMD	SP_0	PARAM_0	END
lbt	,	<Enable>	WrWn

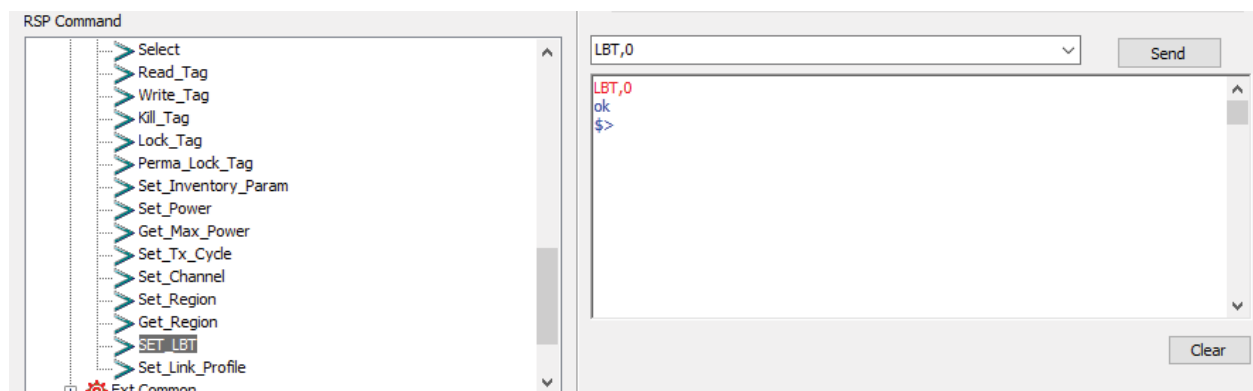
#### Command Field Descriptions

Field	Value	Description
<Enable>	0: Disable 1: Enable (D)	Input if LBT mode is enable or disable

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example





### 7.2.16. Set\_Link\_Profile

Set RF Transceiver Link Profile for Reader. Obtain current setting value by [Get\\_Param](#) command

#### Packet Format

CMD	SP_0	PARAM_0	END
linkp	,	<Profile>	WrWn

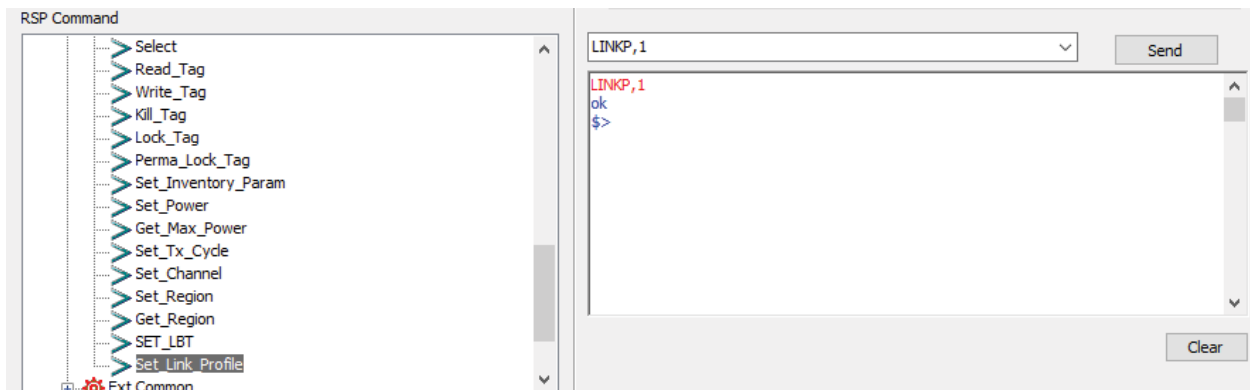
#### Field Descriptions

Field	Model	Value	Description				
<Profile>	R-900	0~5 (D=2)	Profile	Modulation	DeModulation	Frequency (KHz)	Data Rate (kbps)
			0	DSB-ASK	FM0	40	40
			1	DSB-ASK	Miller Subcarrier 2	160	80
			2	PR_ASK	Miller Subcarrier 4	250	62.5
			3	PR_ASK	Miller Subcarrier 4	300	75
			4	DSB-ASK	FM0	400	400
			5	PR_ASK	Miller Subcarrier 2	250	125
	R-800	0~3 (D=1)	Profile	Modulation	DeModulation	Frequency (KHz)	Data Rate (kbps)
			0	DSB-ASK	FM0	40	40
			1	PR-ASK	Miller Subcarrier 4	250	32.5
			2	PR_ASK	Miller Subcarrier 4	300	75
			3	DSB-ASK	FM0	400	400

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



## Expanded Command

This command is added at **I-POLL<sup>2.0</sup>** model.

### 7.3. COMMON

#### 7.3.1. Set\_Clear\_Report

Set whether or not to transmit event when memory data is deleted by reader's Clear button.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
clr	,	<Clear>	WrWn

#### Command Field Descriptions

Field	Value	Description
<Clear>	0: Disable 1: Enable (D)	When set to Enable, In case of clearing data in internal memory, It is transmitted to the host in the form of \$clear <END>.

#### Response

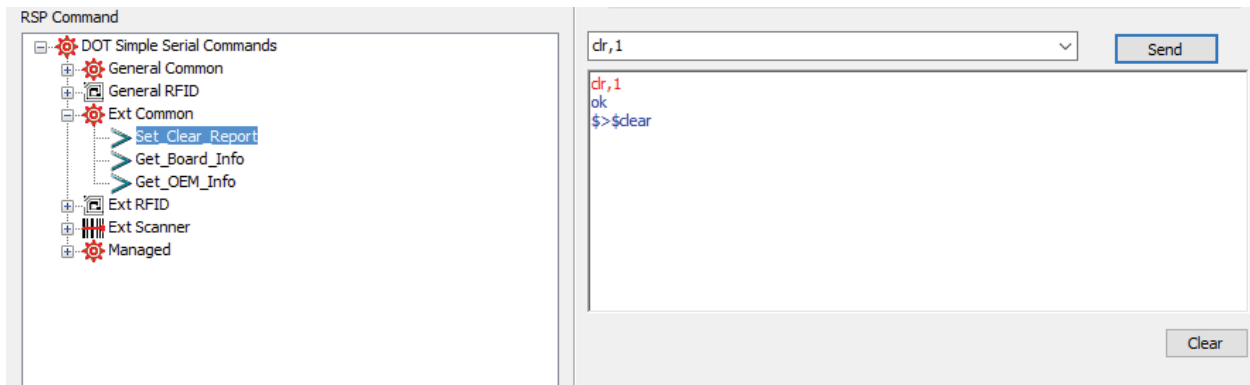
	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example

After [COMMON](#)

#### [Set\\_Clear\\_Report](#)

Set whether or not to transmit event when memory data is deleted by reader's Clear button. in case of clearing the data memory via Clear button of the reader,



### 7.3.2. Get\_Oem\_Info

Get oem information set in the reader.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
oemif			WrWn

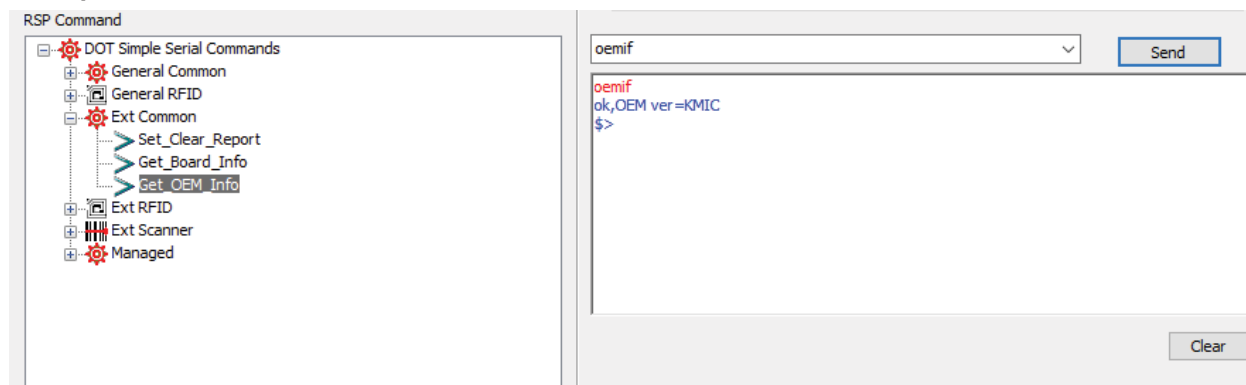
#### Response

	Command			
	CR	SP	VAL	END
Success	ok	,	<oem_info >	WrWn
Fail	err=		<error code>	WrWn

#### Response Field Descriptions

Field	Format	Description
<oem_info>	"OEM ver="	Respond OEM information set in the device. KMIC: Korea FCC: USA ETSI: Europe CHINA: China ARIBns: Japan 0.25W ARIBn: Japan 1W

#### Example



### 7.3.3. Get\_Local\_Data\_Count

Get number of data saved in the reader.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
br.taglist			WrWn

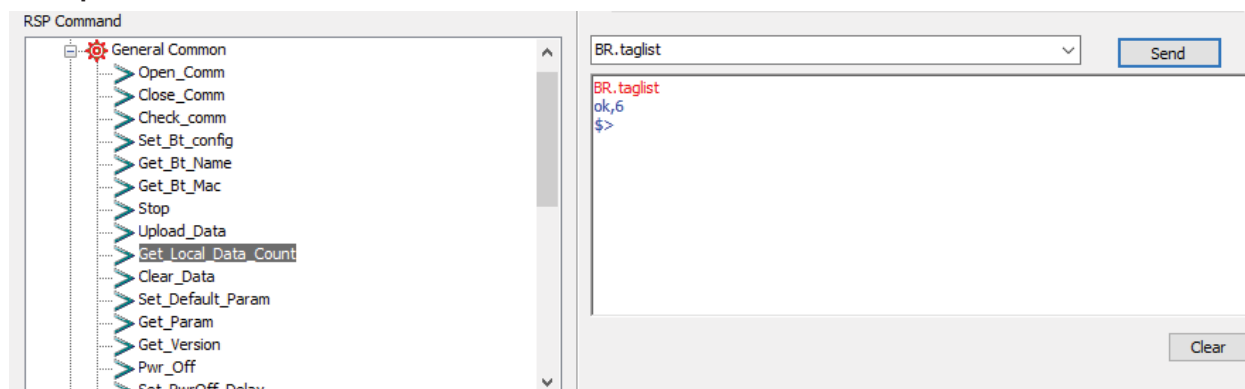
#### Response

	Command			
	CR	SP	VAL	END
Success	ok	,	<tag_count>	WrWn
Fail	err=		<error code>	WrWn

#### Response Field Descriptions

Field	Format	Description
<tag_count>	0~1000	Return number of data saved in the memory.

#### Example



#### 7.3.4. Set\_Vibrator

When to read data, set up whether to vibrate. It can be obtained the current settings through the [Get\\_Param](#) command.

##### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
br.vib	,	<Volume>	,	<Nv>	WrWn

##### Command Field Descriptions

Field	Value	Description
<Vib>	0: Disable (D) 1: Enable	Select whether to vibrate
<Nv>	0: Disable 1: Enable	Select whether to save setting value in internal memory. When to enable, setting value is retained although it is power off and on

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

##### Example



### 7.3.5. Set\_AutoMode\_Delay

Specify the time to stop the operation if there is no data read in the Auto Mode for a certain period of time.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
br.autostop	,	<Delay>	,	<Nv>	WrWn

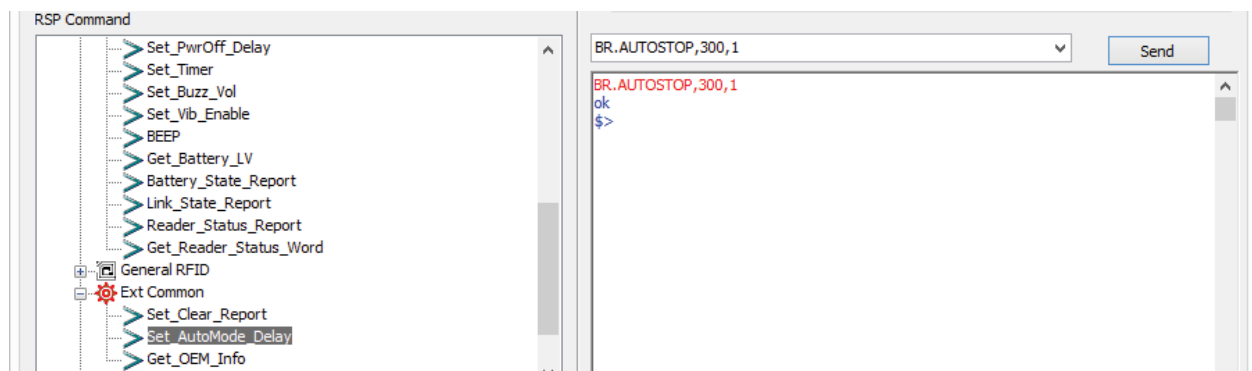
#### Command Field Descriptions

Field	Value	Description
<Delay>	0: Infinite	Enter time for auto operation stop (unit sec) If it is entered more than 86400 seconds(24 hours), it is set to zero.
	1~86400: (D=300)	
<Nv>	0: Disable	Enter whether to save the setting value in internal memory. When enabled, the setting value is retained even when the power is turned off and on again.
	1: Enable	

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example





### 7.3.6. Set\_Terminate\_Character

Sets whether to transmit the end character <CR> <LF> at the end of data while operating between HID and D100 mode.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
br.enter	,	<Enable>	WrWn

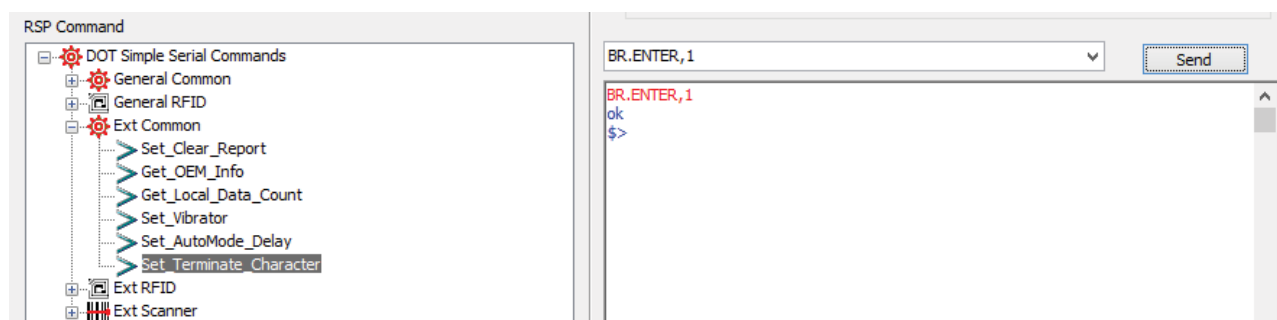
#### Command Field Descriptions

Field	Value	Description
<Enable>	0: Disable 1: Enable (D)	<CR><LF> Set whether to transmit

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



### 7.3.7. HID\_Keyboard\_Layout

Change the keyboard layout to HID Keyboard Layout. Settings will change immediately.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
br.hidlayout	,	<region>	WrWn

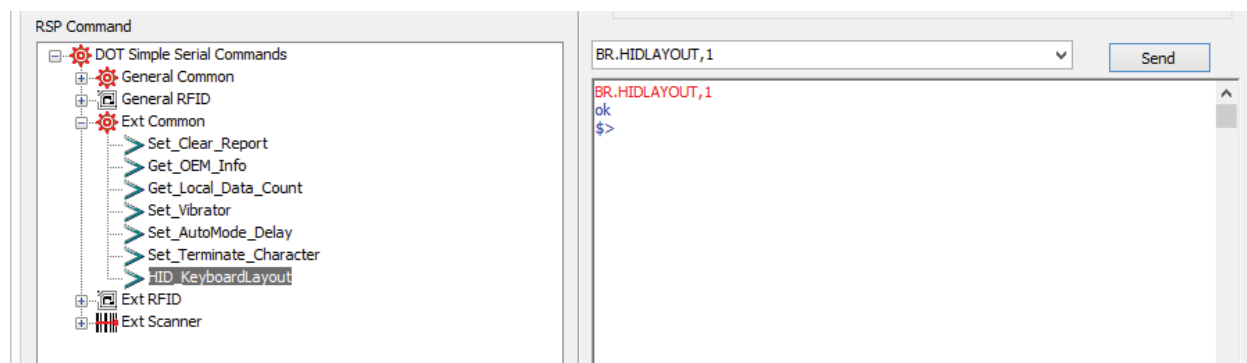
#### Command Field Descriptions

Field	Value	Description
<REGOIN>	0: US 1: JAPAN	Select the Country to change the Layout.

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



## 7.4. RFID

### 7.4.1. Single\_Search

Search for specified single tag. Whenever read tag, respond to Host

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2	PARAM_2	SP_3
rf.ss	,	<Length>	,	<Tagid>	,	<Threshold>	,
PARAM_3	END						
<Step>	WrWn						

#### Field Descriptions

Field	Value	Description
<Length>	4~128	Input length of data saved in the memory (unit. char)
<Tagid>	PC + EPC	Input Tag ID for which is searched
<Threshold>	3~29	Input Tx Power threshold value notified the result (unit. dBm)
<Step>	3~6	Input reduction rate in Tx Power (Unit. dBm)

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

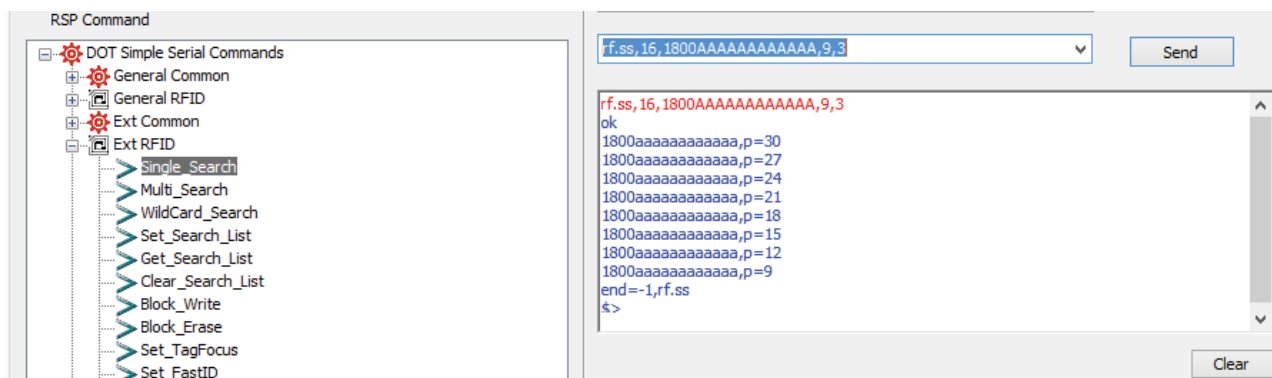
Data			
DR_1	SP	DR_2	END
<tag id>	,	<power>	WrWn

Operation				
OR	EC	SP	CMD	END
end=	-1	,	rf.ss	WrWn

## Response Field Descriptions

Field	Format	Description
<tag id>	PC + EPC	PC Length: 1word EPC Length: Variable(depends on PC)
<power>	p=XX	RF Power

## Example



The screenshot shows the RSP Command interface. On the left, a tree view lists commands under 'DOT Simple Serial Commands', including 'General Common', 'General RFID', 'Ext Common', and 'Ext RFID'. Under 'Ext RFID', 'Single\_Search' is selected. On the right, a command input field contains 'rf.ss,16,1800AAAAAAAAAAAAA,9,3'. Below the input field, a list of responses is shown, including 'ok', '1800AAAAAAAAAAAAA,p=30', '1800AAAAAAAAAAAAA,p=27', '1800AAAAAAAAAAAAA,p=24', '1800AAAAAAAAAAAAA,p=21', '1800AAAAAAAAAAAAA,p=18', '1800AAAAAAAAAAAAA,p=15', '1800AAAAAAAAAAAAA,p=12', '1800AAAAAAAAAAAAA,p=9', 'end=-1,rf.ss', and '\$>'. A 'Send' button is located next to the input field, and a 'Clear' button is at the bottom right.

#### 7.4.2. Multi\_Search

Search for tag registered in the list. Refer to the [Set\\_Search\\_List](#) for how to register a tag list.

##### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.ms			WrWn

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

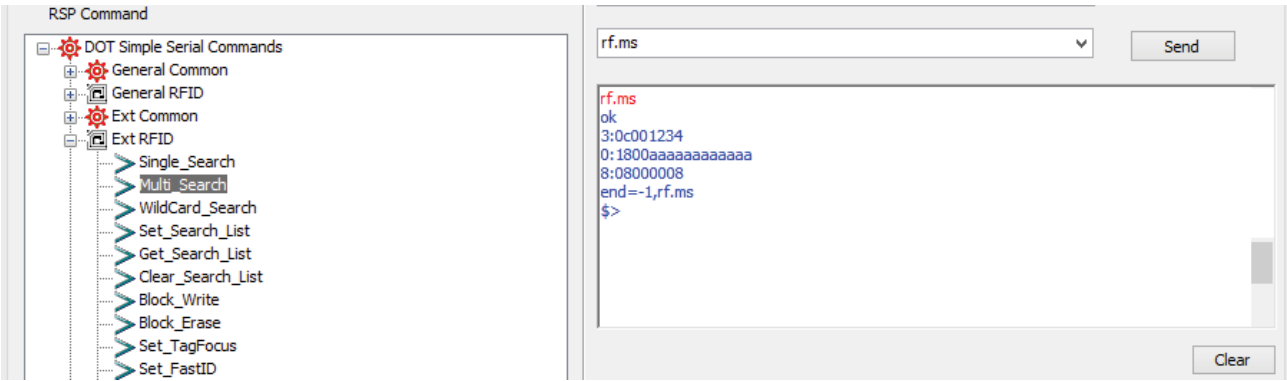
Data		
DR	SP	END
<tag id>		WrWn

Operation				
OR	EC	SP	CMD	END
end=	-1	,	rf.ms	WrWn

##### Response Field Descriptions

Field	Format	Description
<tag id>	<index>:<PC + EPC>	index: 00 ~ 49 PC Length: 1word EPC Length: Variable(depends on PC)

## Example



### 7.4.3. WildCard\_Search

Search for only tags that have been filtered by the specified rule. The filtered characters use '\*' (0x2A) and '?' (0x3F). The '\*' character replaces any string, and the '?' Character replaces any single character.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
rf.ws	,	<Length>	,	<Tagid>	WrWn

#### Field Descriptions

Field	Value	Description
<Length>	2~128	Input length of data to record (unit. Char)
<Tagid>	PC + EPC	ex) 300012345678901234567890123* (O) 300012345678901234567890123? (O) 30001234567890???45678901234 (O) 300012345* (O) 300012345?789012?45678901234 (O) 300012345?789012?4567890123* (X) 300012345?789012*45678901234 (X)

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

Data		
DR	SP	END
<tag id>		WrWn

Operation				
OR	EC	SP	CMD	END
end=	-1	,	rf.ws	WrWn

## Response Field Descriptions

Field	Format	Description
<tag id>	PC + EPC	PC Length: 1word EPC Length: Variable(depends on PC)

## Example

RSP Command

- DOT Simple Serial Commands
  - General Common
  - General RFID
  - Ext Common
  - Ext RFID
    - Single\_Search
    - Multi\_Search
    - Wildcard\_Search
    - Set\_Search\_List
    - Get\_Search\_List
    - Clear\_Search\_List
    - Block\_Write
    - Block\_Erase
    - Set\_TagFocus
    - Set\_FastID

Send

```
rf.ws,5,3000*
ok
30003005fb63ac1f3841ec880467
3000000000000000000000a00 1033
s
end=-1,rf.ws
$>
```

Clear

RSP Command

- DOT Simple Serial Commands
  - General Common
  - General RFID
  - Ext Common
  - Ext RFID
    - Single\_Search
    - Multi\_Search
    - Wildcard\_Search
    - Set\_Search\_List
    - Get\_Search\_List
    - Clear\_Search\_List
    - Block\_Write
    - Block\_Erase
    - Set\_TagFocus
    - Set\_FastID

Send

```
rf.ws,8,0?00????
ok
0800abcd
0c001234
s
end=-1,rf.ws
$>
```

Clear



#### 7.4.4. Set\_Search\_List

Register tag lists to find in [Multi\\_Search](#).

##### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2	PARAM_2	END
rf.ssl	,	<Index>	,	<Length>	,	<Data>	WrWn

##### Command Field Descriptions

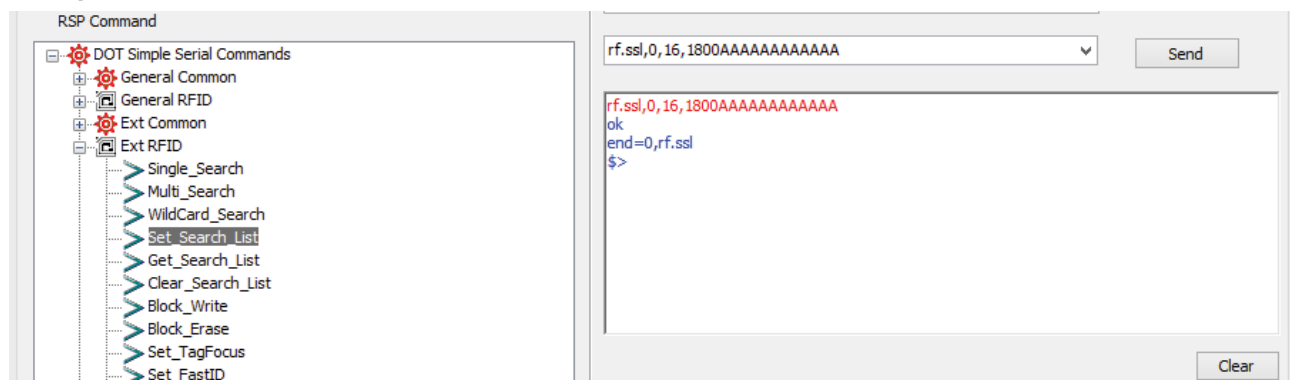
Field	Value	Description
<Index>	0 ~ 49	Enter the index number to register.
<Length>	4 ~ 36	Input length of data to record (unit. Char)
<Data>	PC + EPC	Input data to register

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	rf.ssl	WrWn

##### Example



The screenshot shows the 'RSP Command' window. On the left, a tree view under 'Ext RFID' has 'Set\_Search\_List' selected. On the right, the command input field contains 'rf.ssl,0,16,1800AAAAAAAAAAAA'. The 'Send' button is visible. Below the input field, the response is displayed: 'rf.ssl,0,16,1800AAAAAAAAAAAA', 'ok', 'end=0,rf.ssl', and '\$>'. A 'Clear' button is at the bottom right.

#### 7.4.5. Get\_Search\_List

Return registered [Multi\\_Search](#) list.

##### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.gsl	,	<Index>	WrWn

##### Command Field Descriptions

Field	Value	Description
<Index>	0 ~ 49	Enter the index number of the data to return. (If omitted, returns all registered lists.)

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

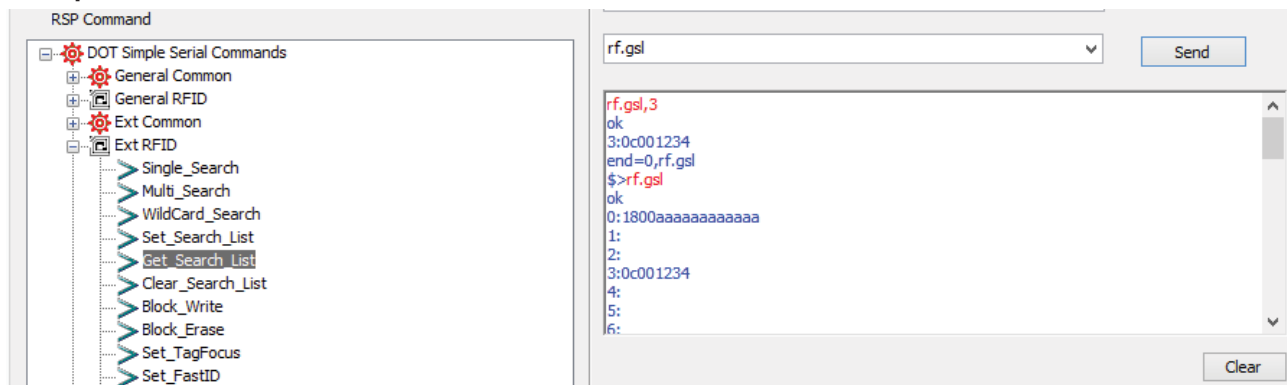
Data		
DR	SP	END
<search list>		WrWn

Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	rf.gsl	WrWn

##### Response Field Descriptions

Field	Format
<search list>	<index>:<PC+EPC>

## Example



#### 7.4.6. Clear\_Search\_List

Clear [Multi\\_Search](#) list.

##### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
rf.csl	,	<Index>	,	<Count>	WrWn

##### Command Field Descriptions

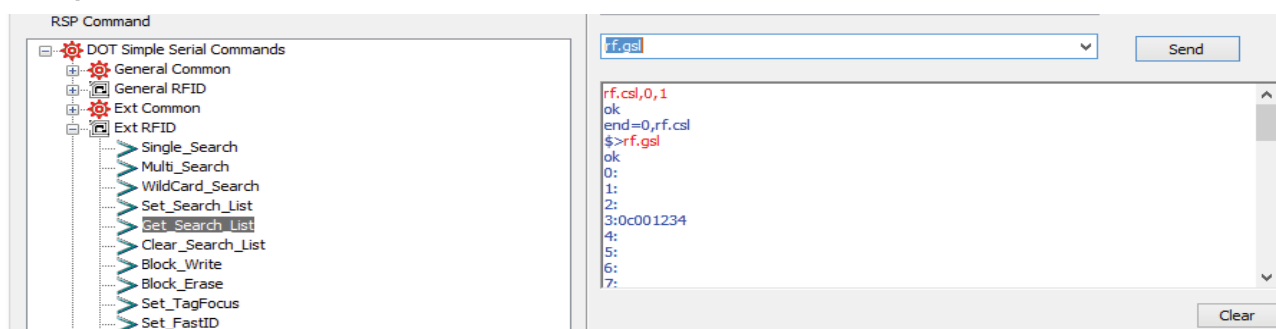
Field	Value	Description
<Index>	0 ~ 49 (D=0)	Input index number to clear
<Count>	1 ~ 50 (D=50)	Input length of list to clear.

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	rf.csl	WrWn

##### Example



#### 7.4.7. Block\_Write

Writes data in tag memory in Block (word) unit.

##### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2
rf.bw	,	<Length>	,	<MemBank>	,
PARAM_2	SP_3	PARAM_3	SP_4	PARAM_4	SP_5
<Offset>	,	<WriteData>	,	<AccPwd>	,
PARAM_5	SP_6	PARAM_6	SP_7	PARAM_7	SP_8
<Single>	,	<Select>	,	<Timeout>	,
PARAM_8	END				
<Block Mode>	WrWn				

##### Command Field Descriptions

Field	Value	Description
<Length>	1~64	Enter length of data to be recorded (unit. word)
<MemBank>	0: RESERVED 1: EPC 2: TID 3: USER	Enter the memory bank of the tag to record. Refer to <a href="#">UHF Tag Logical Memory Map</a> .
<Offset>	0~255	Enter the Offset address value to write data (unit. word)
<WriteData>	Hex String	Enter data to record (Length*4digit)
<AccPwd>	Hex or Dec Value (D=0)	Enter Access Password ex) 0x10101010 or 269488144
<Single>	0: Continous (D) 1: Single	When one tag is recorded, it should be set whether to stop.
<Select>	0: Non-Select Mode (D) 1: Non-Select Mode 2: Exclusion Select Mode 3: Select Mode	Sets whether to record data only for selected tags. For the Select setting, refer to <a href="#">Select</a> COMMAND..
<Timeout>	0: Infinite (D) 1 ~ 0xFFFFFFFF: Timeout	Set up Timeout value(unit. msec)
<Block Mode>	0: Auto-detect (D)	Select BlockWrite unit.

	1: Force one word BlockWrite	
	2: Force two word BlockWrite	

### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

	Data			
	DR	SP	ID	END
Success	ok	,	<tag id>	WrWn
Fail	<acc error>	,	<tag id>	WrWn

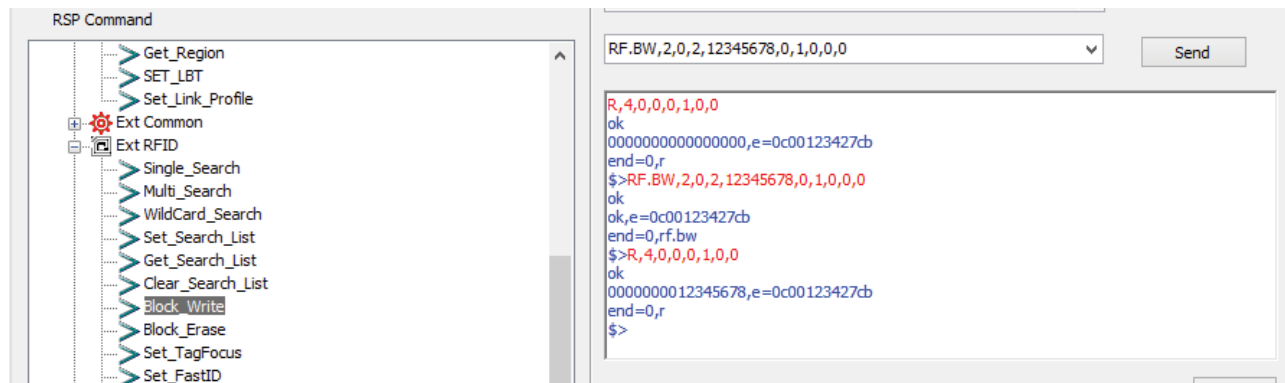
Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	rf.bw	WrWn

### Response Field Descriptions

Field	Format	Description
<tag id>	e=XXXX...	Return ID value for accessed Tag May differ depending on <a href="#">RFID_Data_Format</a> .
<acc error>	err_tag=XX or err_op=XX	Return access error.

## Example

EPC ID가 1234... 인 태그의 Reserved 뱅크 2번지에 2word 데이터 "12345678"을 기록한 경우,



#### 7.4.8. Block\_Erase

Delete (Fill to 0) the data in tag memory in block (word) units.

##### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	SP_2
rf.be	,	<Length>	,	<MemBank>	,
PARAM_2	SP_3	PARAM_3	SP_4	PARAM_4	SP_5
<Offset>	,	<AccPwd>	,	<Single>	,
PARAM_5	SP_6	PARAM_6	SP_7	PARAM_7	END
<Select>	,	<Timeout>	,	<Block Mode>	WrWn

##### Command Field Descriptions

Field	Value	Description
<Length>	1~255	Enter length of data to erase (unit. word)
<MemBank>	0: RESERVED 1: EPC 2: TID 3: USER	Enter the memory bank of the tag to record. Refer to <a href="#">UHF Tag Logical Memory Map</a> .
<Offset>	0~255	Enter the Offset address value to write data (unit. word)
<AccPwd>	Hex or Dec Value (D=0)	Enter Access Password ex) 0x10101010 or 269488144
<Single>	0: Continous (D) 1: Single	When one tag is recorded, it should be set whether to stop.
<Select>	0: Non-Select Mode (D) 1: Non-Select Mode 2: Exclusion Select Mode 3: Select Mode	Sets whether to record data only for selected tags. For the Select setting, refer to <a href="#">Select</a> COMMAND..
<Timeout>	0: Infinite (D) 1 ~ 0xFFFFFFFF: Timeout	Set up Timeout value(unit. msec)
<Block Mode>	0: Auto-detect (D) 1: Force one word BlockWrite 2: Force two word BlockWrite	Select BlockWrite unit.



## Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

	Data			
	DR	SP	ID	END
Success	ok	,	<tag id>	WrWn
Fail	<acc error>	,	<tag id>	WrWn

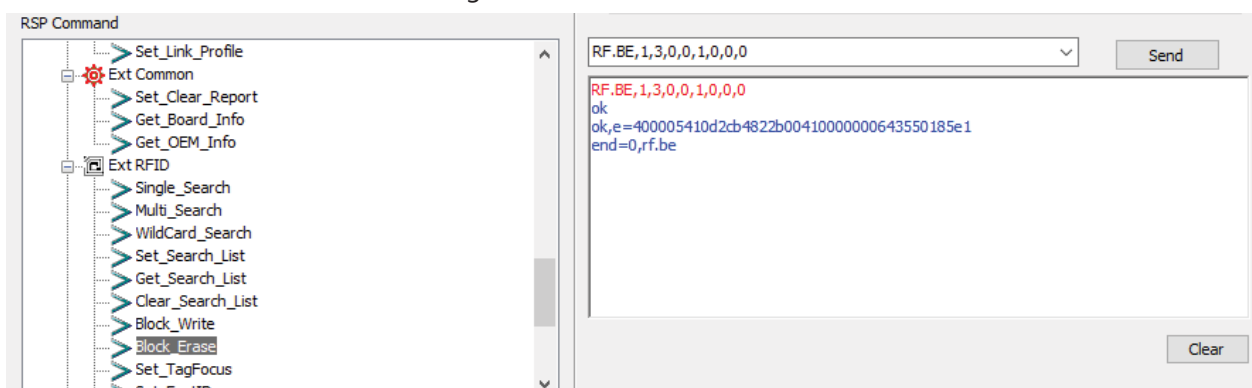
Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	rf.be	WrWn

## Response Field Descriptions

Field	Format	Description
<tag id>	e=XXXX...	Return ID value for accessed Tag May differ depending on <a href="#">RFID_Data_Format</a> .
<acc error>	err_tag=XX or err_op=XX	Return access error.

## Example

EPC ID 0x05410d2... In case of deleting a word data in the address of USERbank



The screenshot shows the RSP Command interface. On the left, a tree view lists various commands under 'Ext Common' and 'Ext RFID'. The 'Block\_Erase' command is highlighted. On the right, a command input field contains 'RF.BE,1,3,0,0,1,0,0,0'. Below it, the response is displayed: 'ok,e=400005410d2cb4822b00410000000643550185e1'. The 'Send' button is visible next to the command input field.

#### 7.4.9. Set\_TagFocus

TagFocus Set the TagFocus function. This mode make the tags that have already responded unresponsive and give you more time to find other tags. It will be worked when set to Session 01 and Target A. It will obtain current setting value through [Get\\_Param](#) command. Please refer to [Set\\_Inventory\\_Report](#) for session and targeting setting and for supported tag, it will tell you what tag supports [Tag Supported for](#)

### TagFocus & FastID.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.tagfocus	,	<Enable>	WrWn

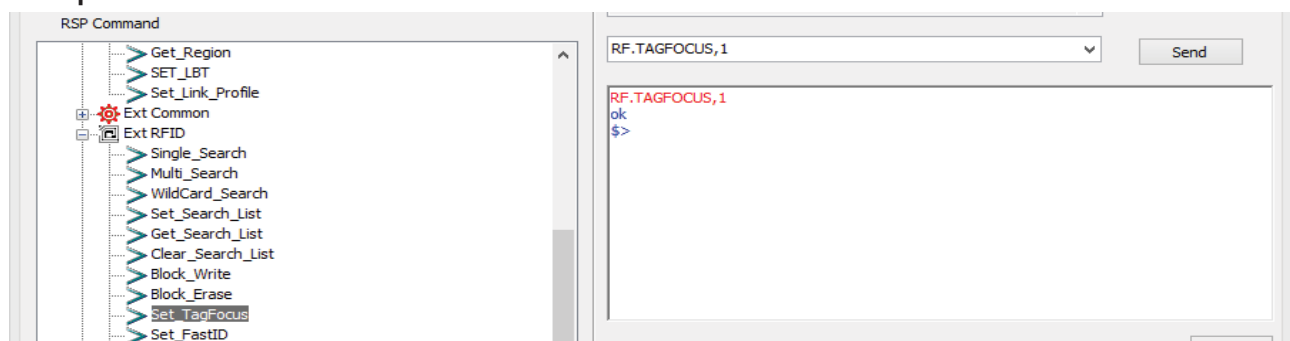
#### Command Field Descriptions

Field	Value	Description
<Enable>	0: Disable 1: Enable (D)	Input whether to activate TagFocus or not

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example



#### 7.4.10. Set\_FastID

Set the FastID function. This mode improves the TID-based inventory identification rate because it obtains the TID value in the inventory process. It will obtain current setting value through [Get\\_Param](#) COMMAND. It will tell you what tag supports [Tag Supported for](#) **TagFocus & FastID**.

##### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.fastid	,	<Enable>	WrWn

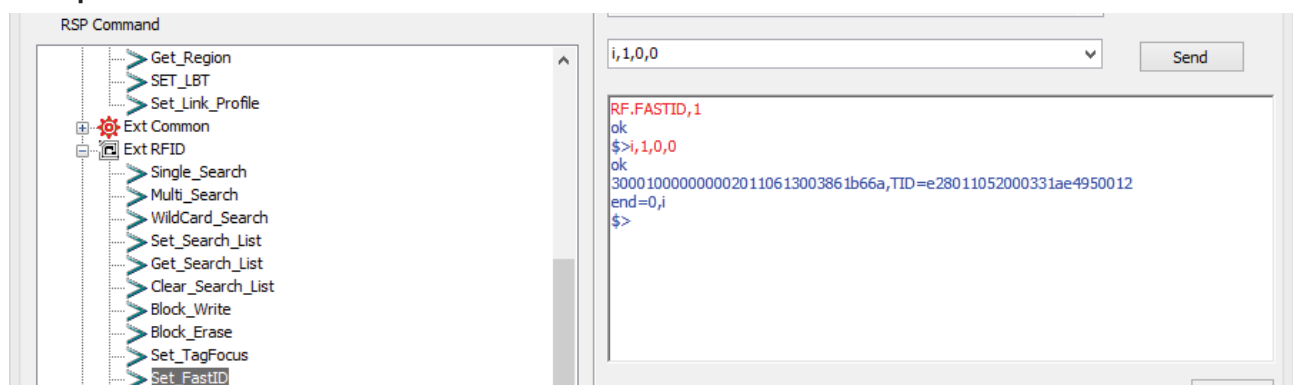
##### Command Field Descriptions

Field	Value	Description
<Enable>	0: Disable 1: Enable (D)	Input whether to activate/deactivate FastID.

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

##### Example



#### 7.4.11. RFID\_Data\_Format

When it is accessed to Inventory and Tag, it can be set up Tag ID format which was read. It will be detected current setting value through [Get\\_Param](#) COMMAND.

##### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.data	,	<Format>	WrWn

##### Command Field Descriptions

Field	Value	Description
<Format>	0:PC+EPC+CRC(D) 1:PC+EPC 2:EPC+CRC 3:EPC Only	Set up format for RFID Tag ID.

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

##### Example

[RFID\\_Data\\_Format](#) In case of activating inventory for tag of PC(0800), EPC(ABCD), CRC(3799),



#### 7.4.12. RFID\_Transmission\_Format

When inventory is activated, it can be set up RFID data transmission format. It will be detected current setting value through [Get\\_Param](#) COMMAND.

##### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.fixdata	,	<Format>	WrWn

##### Command Field Descriptions

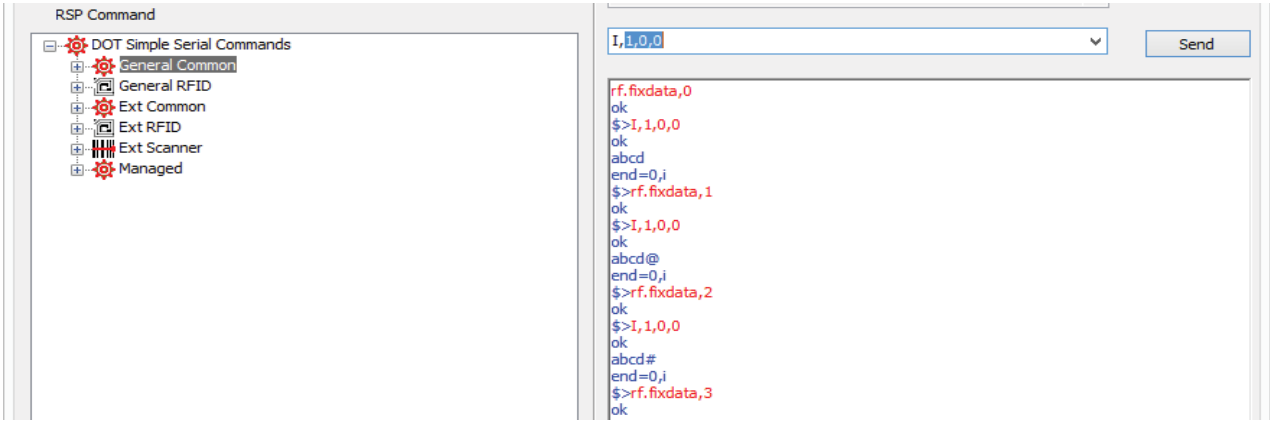
Field	Value	Description
<Format>	0: Data As Is(D) 1: <DATA> <SUFFIX 1> 2: <DATA> <SUFFIX 2> 3: <DATA> <SUFFIX 1> <SUFFIX 2> 4: <PREFIX> <DATA> 5: <PREFIX> <DATA> <SUFFIX 1> 6: <PREFIX> <DATA> <SUFFIX 2> 7: <PREFIX> <DATA> <SUFFIX 1> <SUFFIX 2>	Set up RFID Data transmission format. PREFIX, SUFFIX1, and SUFFIX2 should be set to <a href="#">RFID_Prefix</a> , <a href="#">RFID_Suffix1</a> , <a href="#">RFID_Suffix2</a> respectively

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

##### Example

After the [RFID\\_Prefix](#)( ! ), [RFID\\_Suffix1](#)( @ ), [RFID\\_Suffix2](#)( # ) are set, in case of activating inventory for tag which are ABCD as EPC changed [RFID\\_Transmission\\_Format](#),



### 7.4.13. RFID\_Prefix

Set up Prefix data for RFID. It will be detected current setting value [Get\\_Param](#) COMMAND.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.prefix	,	<Data>	WrWn

#### Command Field Descriptions

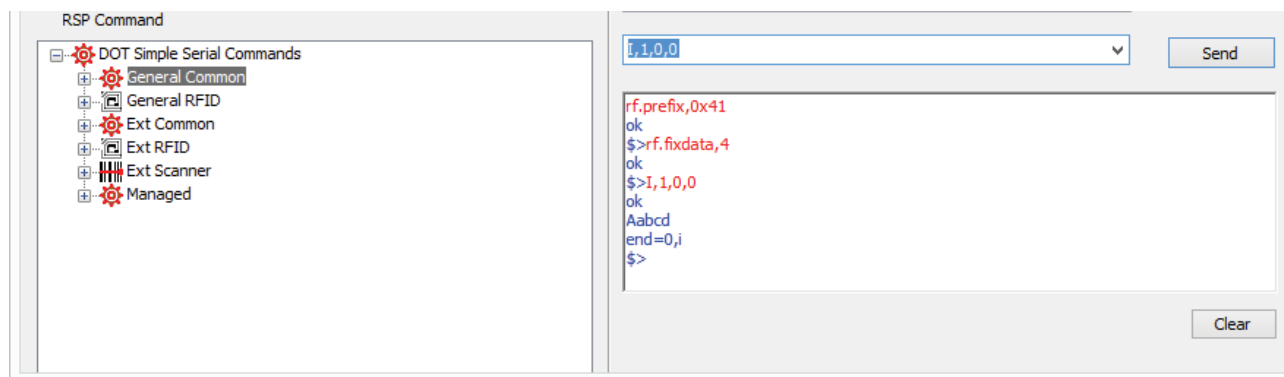
Field	Value	Description
<Data>	0~126 (D=0)	0~126 ASCII Code

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

#### Example

After [RFID\\_Prefix](#) is set to ( A ); Inventorying EPC value of ABCD Tag [RFID\\_Transmission\\_Format](#) set to 4,



#### 7.4.14. RFID\_Suffix1

Set up Suffix1 data for RFID. It will be detected current setting value through [Get\\_Param](#) COMMAND.

##### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.suffix1	,	<Data>	WrWn

##### Command Field Descriptions

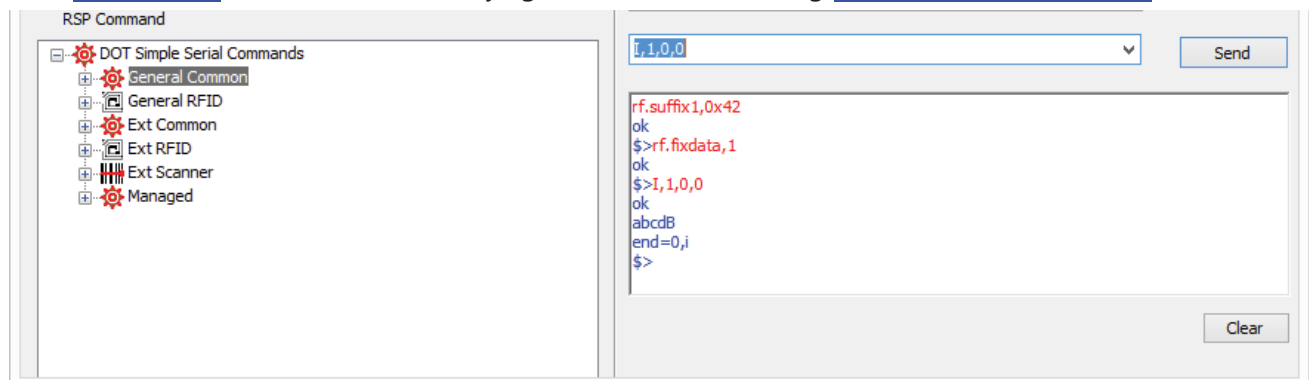
Field	Value	Description
<Data>	0~126 (D=0)	0~126 ASCII Code

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

##### Example

After [RFID\\_Suffix1](#) is set to( B ); Inventorying EPC value of ABCD tag [RFID\\_Transmission\\_Format](#) set to 1,





#### 7.4.15. RFID\_Suffix2

Set up Suffix2 data for RFID. It will be detected current setting value through [Get\\_Param](#) COMMAND.

##### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.suffix2	,	<Data>	WrWn

##### Command Field Descriptions

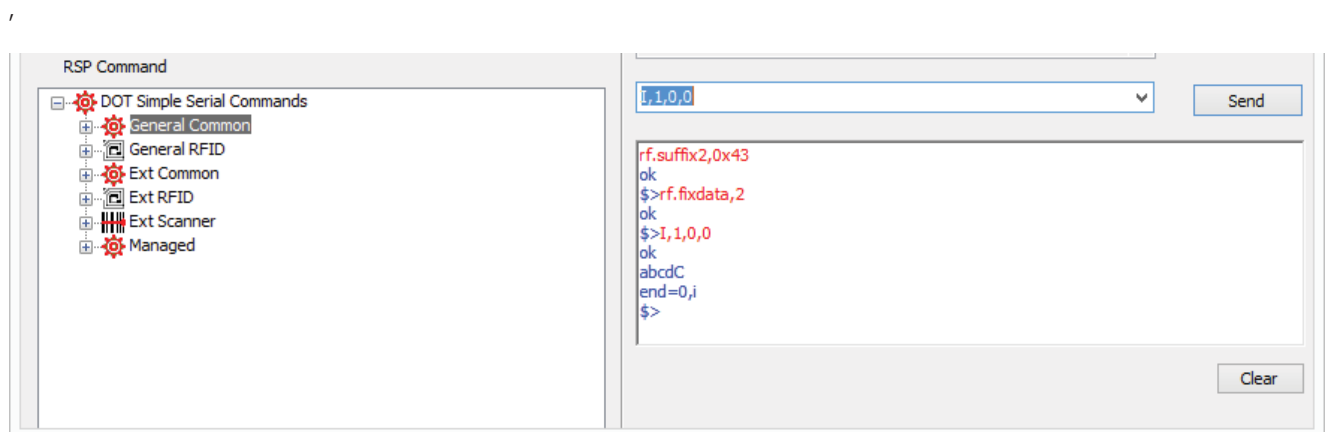
Field	Value	Description
<Data>	0~126 (D=0)	0~126 ASCII Code

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

##### Example

After [RFID\\_Suffix1](#) is set to( C ); Inventorying EPC value of ABCD tag [RFID\\_Transmission\\_Format](#) set to 2,



#### 7.4.16. RFID\_InvLcdOff

In case of RFID is inventoried in SPP mode, set whether to output the data on LCD display. When to set enable, it can be improve Inventory speed in SPP mode.

##### Command Packet Format

CMD	SP_0	PARAM_0	END
rf.invlcdoff	,	<Enable>	WrWn

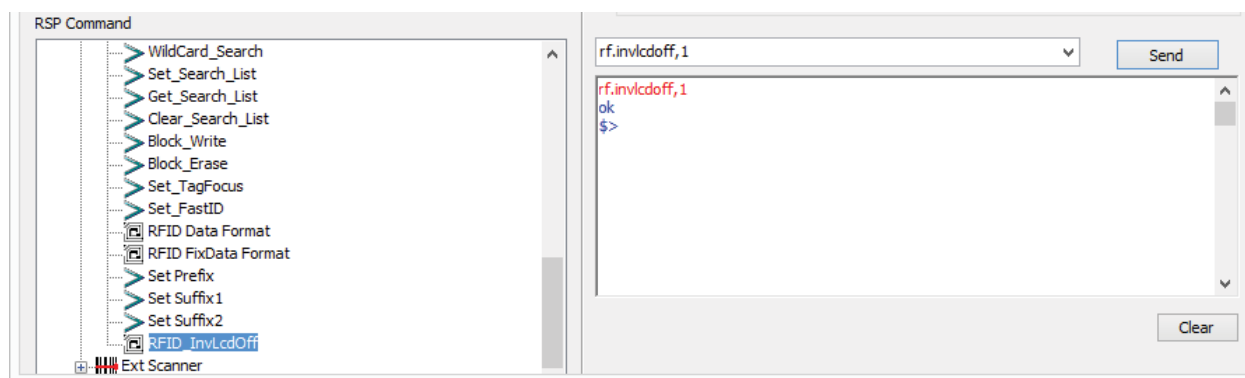
##### Command Field Descriptions

Field	Value	Description
<Enable>	0: Disable 1: Enable (D)	Set whether to output RFID data to LCD display When to set Enable, it can be improved inventory speed in SPP mode

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err=		<error code>	WrWn

##### Example



## 7.5. SCANNER

### 7.5.1. Scan\_Get\_Type

Retrieve information on scan engine type..

#### Command Packet Format

CMD	SP_0	PARAM_0	END
sc.type			WrWn

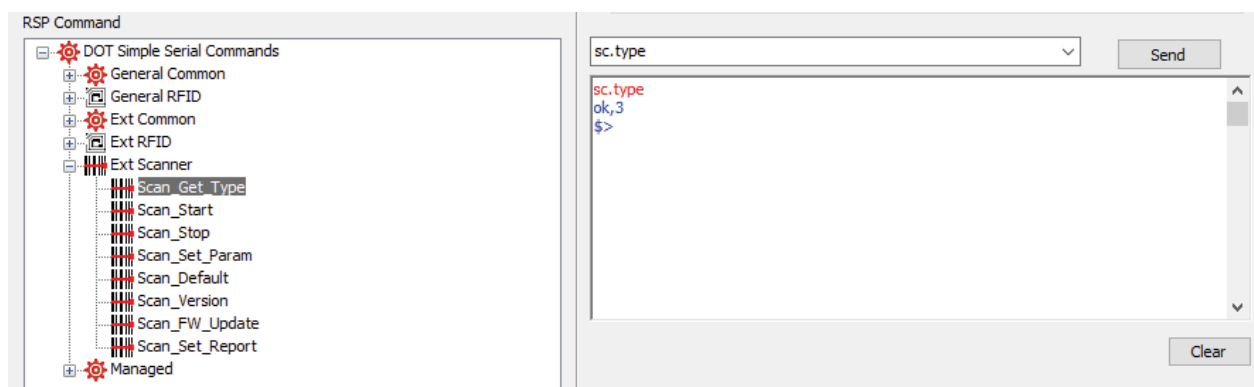
#### Response

	Command			
	CR	SP	VAL	END
Success	ok	,	<engine type>	WrWn
Fail	err_scn=		<error code>	WrWn

#### Response Field Descriptions

Field	Format	Description
<engine type>	0: None 1: SE655 2: SE4750 3: EM3396	There is no engine type SE655 1D Linear Imager + LED Aimer SE4750 2D Array + Laser Aimer EM3396 2D Array + Laser Aimer

#### Example



### 7.5.2. Scan\_Start

Start scanning barcodes. The maximum length of data that can be scanned is 1200 characters.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
sc.start			WrWn

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err_scn=		<error code>	WrWn

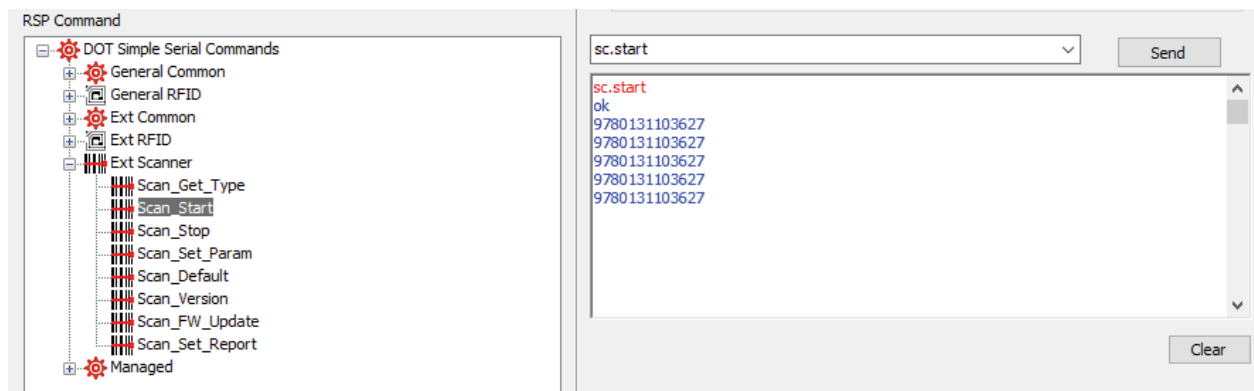
Data					
DR_0	SP_1	DR_1	SP_2	DR_2	END
<barcode data>	,	<time>	,	<type>	WrWn

Operation				
OR	EC	SP	CMD	END
end=	<error code>	,	sc.start	WrWn

#### Response Field Descriptions

Field	Format	Description
<barcode data>	<Prefix> <Data> <Suffix1> <Suffix2>	Supports up to 1200 barcode data. (Prefix, Data, Suffix 1, Suffix 2 inc.)
<time>	t=XXXXXX	Outputs the barcode scanning time. May differ depending on <a href="#">Scan_Set_Report</a> .
<type>	b=0xXX	Outputs ID for Barcode Type. May differ depending on <a href="#">Scan_Set_Report</a>

## Example



### 7.5.3. Scan\_Stop

Stop scanning barcode.

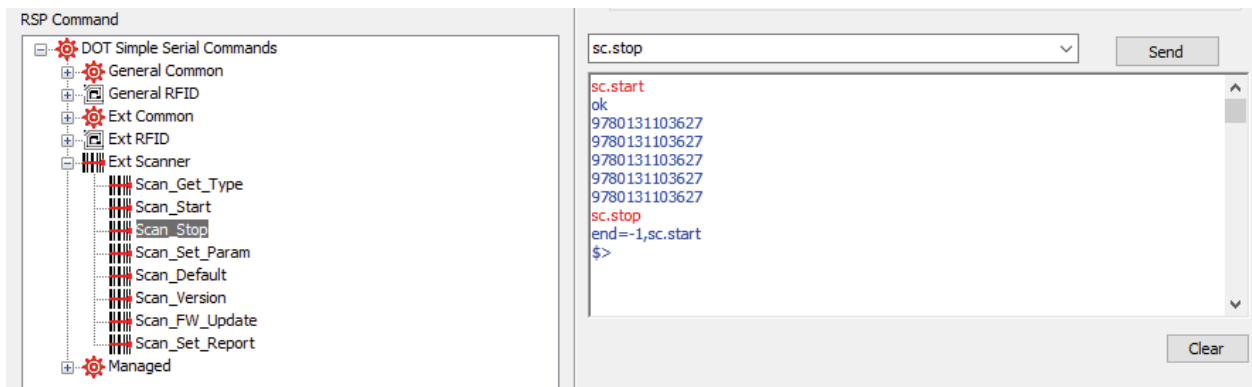
## Command Packet Format

CMD	SP_0	PARAM_0	END
sc.stop			WrWn

## Response

Operation				
OR	EC	SP	CMD	END
end=	-1	,	<i>sc.start</i>	<del>WrWn</del>

### Example



#### 7.5.4. Scan\_Set\_Param

Set scanner options. For details, refer to [Scan Parameters](#). Current setting value can be retrieved through [Get\\_Param](#) COMMAND. *<opcode>* and *<option>* value may differ depending on scanner engine type.

##### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
sc.param	,	<i>&lt;Opcode&gt;</i>	,	<i>&lt;Option&gt;</i>	WrWn

##### Command Field Descriptions

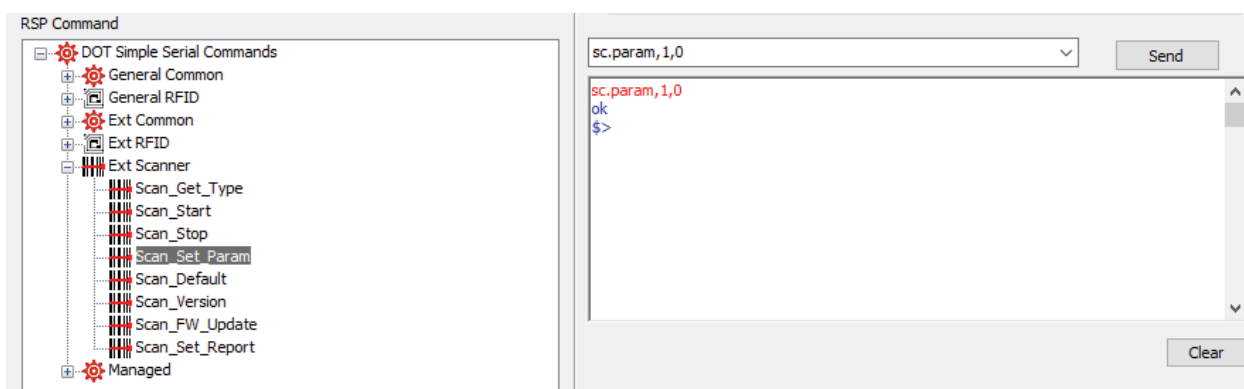
Field	Value	Description
<i>&lt;Opcode&gt;</i>	0 ~ 32	Enter OP Code for parameter setting. Refer to <a href="#">OP Codes</a> for more details.
<i>&lt;Option&gt;</i>	32bit Value	Enter the 32bit option value corresponding to the OP Code. Refer to <a href="#">Options</a> for more details.

##### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err_scn=		<i>&lt;error code&gt;</i>	WrWn

##### Example

In case of all 2D Symbolologies are disabled,



### 7.5.5. Scan\_Default

Initialize the option values of the scanner. Refer to [SCANNER Default Value](#) for initial value of the scanner

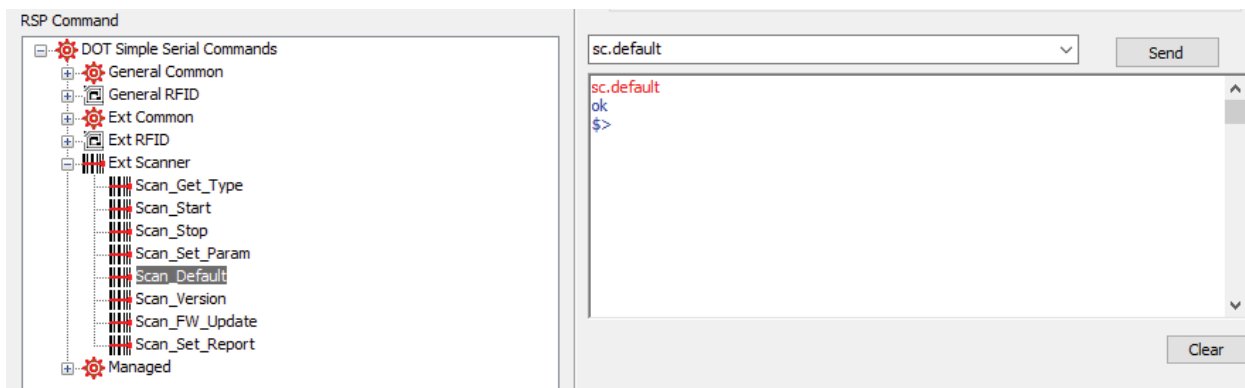
#### Command Packet Format

CMD	SP_0	PARAM_0	END
sc.default			WrWn

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err_scn=		<error code>	WrWn

#### Example





### 7.5.6. Scan\_Version

Retrieve firmware version of scanner engine.

#### Command Packet Format

CMD	SP_0	PARAM_0	END
sc.ver			WrWn

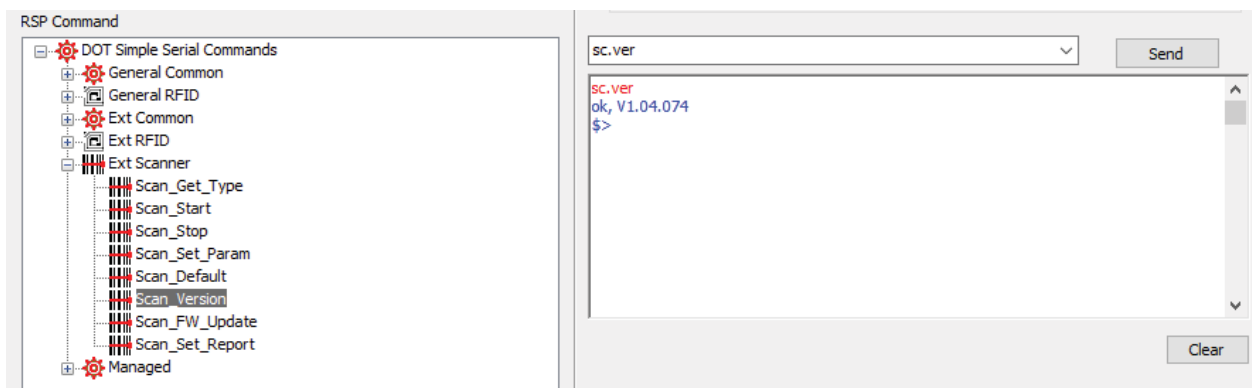
#### Response

	Command			
	CR	SP	VAL	END
Success	ok	,	<f/w version>	WrWn
Fail	err_scn=		<error code>	WrWn

#### Response Field Descriptions

Field	Format	Description
<f/w version>	ASCII String	Scanner F/W Version

#### Example



### 7.5.7. Scan\_FW\_Update

Update Firmware of scanner engine (only available for SE4750 2D Engine)

#### Command Packet Format

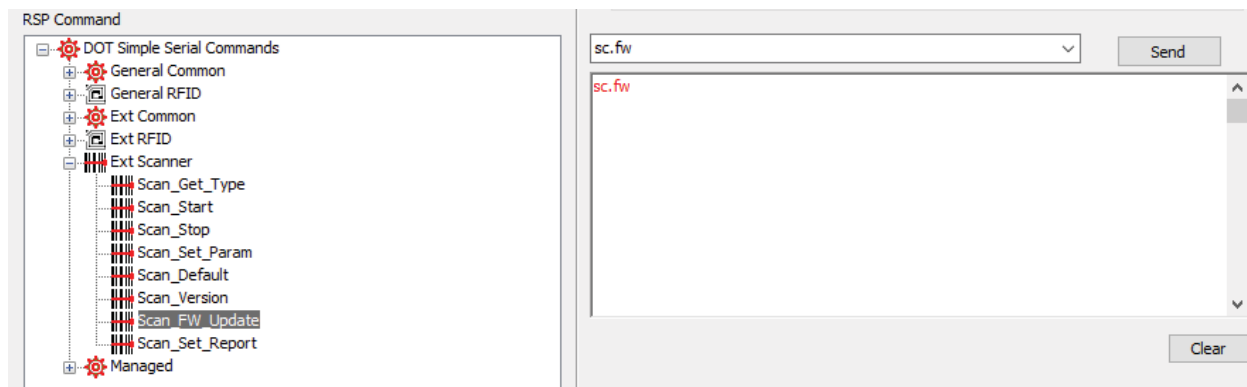
CMD	SP_0	PARAM_0	END
sc.fw			WrWn

#### Response

	Command			
	CR	SP	VAL	END
Success				
Fail	err_scn=		<error code>	WrWn

- ✓ *Note. If the F/W update mode normally, the connection to host will be lost and the response will not come..*

#### Example



### 7.5.8. Scan\_Set\_Report

Set the data output format when reading bar codes. Retrieve current setting value through [Get\\_Param](#) COMMAND.

#### Command Packet Format

CMD	SP_0	PARAM_0	SP_1	PARAM_1	END
sc.report	,	<Time>	,	<Type>	WrWn

#### Command Field Descriptions

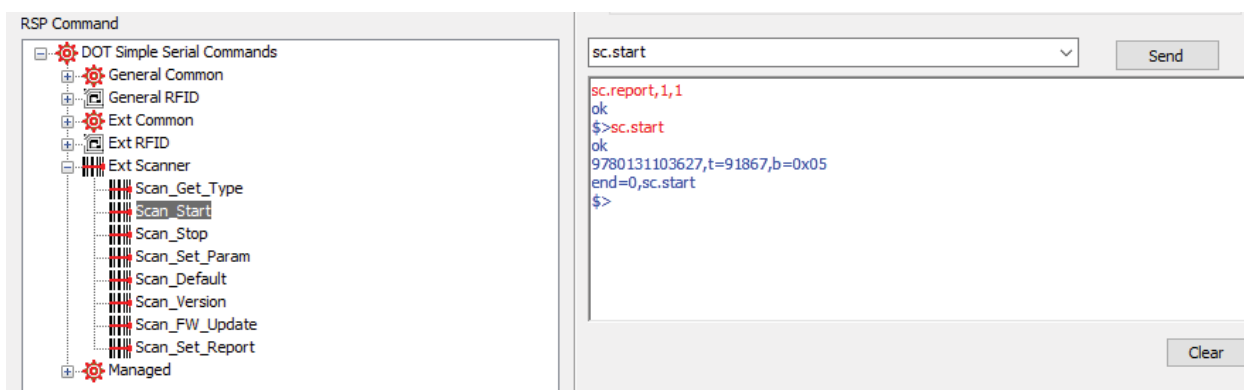
Field	Value	Description
<Time>	0: Disable 1: Enable	Enter whether to output time, when reading barcode Output format is t=XXXXXX
<Type>	0: Disable 1: Enable	Enter whether to output Barcode Type ID, when reading barcode. Output format is b=0xXX Refer to <a href="#">Barcode Type ID</a> for more details.

#### Response

	Command			
	CR	SP	VAL	END
Success	ok			WrWn
Fail	err_scn=		<error code>	WrWn

#### Example

Time and Type are set to Enable, and when the bar code is read,



## 8. Scan Parameters

### 8.1. OP Codes

OP	Descriptions	OP	Decriptions
0	1D Symmbologies	16	Composite
1	2D Symmbologies	17	Micro PDF417
2	UPC/EAN	18	Macro PDF
3	Bookland ISBN	19	Data Matrix
4	Code-128	20	Scanning Preferences
5	ISBT	21	Data Format
6	Code-39	22	Redundancy & Security Level
7	Code-93	23	Delimiter
8	Code-11	24	Reserved
9	Interleaved 2 of 5	25	Reserved
10	Discrete 2 of 5	26	Reserved
11	Codabar	27	Reserved
12	MSI	28	Reserved
13	Matrix 2 of 5	29	Reserved
14	GS1 Databar	30	Reserved
15	Postal Codes	31	Reserved

Table 3. OP Codes

## 8.2. Options

- ✓ *Note. Options are different depending on the scanner engine model. Unsupported options by the scanner engines are marked as an X on the corresponding bit.*

### 8.2.1. 1D Symbolgies

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved								GS1 DataBar Expanded	GS1 DataBar Limited	GS1 DataBar	Korean 3 of 5	Matrix 2 of 5	Chinese 2 of 5	MSI	Codabar	Discrete 2 of 5	Interleaved 2 of 5	Code-11	Code-93	Trioptic Code-39	Code-39	ISBT-128	GS1-128	Code-128	ISSN	ISBN	EAN-13 / JAN-13	EAN-8 / JAN-8	UPC-E1	UPC-E0	UPC-A
SE655				X								X																				
SE4750				X																												
EM3396				X					X	X		X		X							X		X							X		

bit	Definition	Description
31:24	Reserved	Reserved
23	GS1 DataBar Expanded	0: Disable 1: Enable
22	GS1 DataBar Limited	0: Disable 1: Enable
21	GS1 DataBar	0: Disable 1: Enable
20	Korean 3 of 5	0: Disable 1: Enable
19	Matrix 2 of 5	0: Disable 1: Enable
18	Chinese 2 of 5	0: Disable 1: Enable
17	MSI	0: Disable 1: Enable
16	Codabar	0: Disable 1: Enable
15	Discrete 2 of 5	0: Disable

		1: Enable
14	Interleaved 2 of 5	0: Disable 1: Enable
13	Code-11	0: Disable 1: Enable
12	Code-93	0: Disable 1: Enable
11	Trioptic Code-39	0: Disable 1: Enable
10	Code-39	0: Disable 1: Enable
9	ISBT-128	0: Disable 1: Enable
8	GS1-128	0: Disable 1: Enable
7	Code-128	0: Disable 1: Enable
6	ISSN	0: Disable 1: Enable
5	ISBN	0: Disable 1: Enable
4	EAN-13 / JAN-13	0: Disable 1: Enable
3	EAN-8 / JAN-8	0: Disable 1: Enable
2	UPC-E1	0: Disable 1: Enable
1	UPC-E0	0: Disable 1: Enable
0	UPC-A	0: Disable 1: Enable

### 8.2.2. 2D Symbolologies

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition														HanXin	Aztec	MicroQR	QR Code	Maxicode	Data Matrix	Micro PDF-417	PDF-417	Composite TLC-39	Composite CC-A/B	Composite CC-C	UPU FICS Postal	Intelligent Mail	Netherlands KIX Code	Australia Post	Japan Postal	UK Postal	US Planet	US Postnet
SE655						X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SE4750						X																										
EM3396						X									X			X		X		X	X	X	X	X	X	X	X	X	X	X

bit	Definition	Description
31:19	Reserved	Reserved
18	HanXin	0: Disable 1: Enable
17	Aztec	0: Disable 1: Enable
16	Micro QR	0: Disable 1: Enable
15	QR Code	0: Disable 1: Enable
14	Maxi Code	0: Disable 1: Enable
13	Data Matrix	0: Disable 1: Enable
12	Micro PDF-417	0: Disable 1: Enable
11	PDF-417	0: Disable 1: Enable
10	Composite TLC-39	0: Disable 1: Enable
9	Composite CC-A/B	0: Disable 1: Enable
8	Composite CC-C	0: Disable 1: Enable

7	UPU FICS Postal	0: Disable 1: Enable
6	Intelligent Mail	0: Disable 1: Enable
5	Netherlands KIX Code	0: Disable 1: Enable
4	Australia Post	0: Disable 1: Enable
3	Japan Postal	0: Disable 1: Enable
2	UK Postal	0: Disable 1: Enable
1	US Planet	0: Disable 1: Enable
0	US Postnet	0: Disable 1: Enable



### 8.2.3. UPC/EAN

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0															
Definition	Reserved					Coupon Report			UCC Coupon Extended Code			EAN-8 Extend			Supplemental AIM ID Format			Supplemental Redundancy					Decode Supplementals					UPC Reduced Quiet Zone		Convert UPC-E1 to A		Convert UPC-E0 to A		UPC-E1 Preamble		UPC-E0 Preamble			UPC-A Preamble			Transmit UPC-E1 Check Digit		Transmit UPC-E0 Check Digit		Transmit UPC-A Check Digit	
SE655			X																		X																										
SE4750			X																																												
EM3396			X			X		X		X		X		X			0~2				X	X		X		0~1	1~2	X																			

bit	Definition	Description								
31:27	Reserved	Reserved								
26:25	Coupon Report	0: Old Coupon Symbols (UPC/EAN and Code-128, and interim coupon) 1: New Coupon Symbols(UPC/EAN or Code-128, and interim coupon or Databar Expanded) 2: Both Coupon Formats(UPC/EAN and Code-128, and interim coupon or Databar Expanded) Specify coupon formats.								
24	UCC Coupon Extended Code	0: Disable 1: Enable If enable, UPC-A begins with 5, EAN-13 begins with 99, and UPC - A/GS-128 Coupon Code can be read								
23	EAN-8 Extend	0: Disable 1: Enable If enable, EAN-8 converts to EAN-13.								
22:21	Supplemental AIM ID Format	0: Separate 1: Combined 2: Separate Transmissions <table><tr><th>Value</th><th>Format</th></tr><tr><td>Separate</td><td>&lt;AIM ID&gt; &lt;Data&gt; &lt;AIM ID&gt; &lt;Supplemental&gt;</td></tr><tr><td>Combined</td><td>&lt;AIM ID&gt; &lt;Data&gt; &lt;Supplemental&gt;</td></tr><tr><td>Separate Transmissions</td><td>&lt;AIM ID&gt; &lt;Data&gt; &lt;AIM ID&gt; &lt;Supplemental&gt;</td></tr></table> Set the AIM ID Format to the corresponding supplemental data.	Value	Format	Separate	<AIM ID> <Data> <AIM ID> <Supplemental>	Combined	<AIM ID> <Data> <Supplemental>	Separate Transmissions	<AIM ID> <Data> <AIM ID> <Supplemental>
Value	Format									
Separate	<AIM ID> <Data> <AIM ID> <Supplemental>									
Combined	<AIM ID> <Data> <Supplemental>									
Separate Transmissions	<AIM ID> <Data> <AIM ID> <Supplemental>									

20:16	Supplemental Redundancy	<p>2~20</p> <p>If Decode Supplementals is set to 2, the readings times of barcode that do not exist in Supplemental value shall be specified before transmitting barcode data.</p>
15:12	Decode Supplementals	<p>0: Ignore UPC/EAN with Supplementals</p> <p>1: Decode UPC/EAN with Supplementals</p> <p>2: Autodiscriminate UPC/EAN Supplementals</p> <p><b># If you select one of the following options, the scanner will send a n EAN-13 barcode beginning with a prefix of Supplement value.</b></p> <p><i>(Nonsupport for EM3396)</i></p> <p>3: All EAN-13 barcodes applied starting with the prefixes listed below.</p> <p>4: Enable 378/379 Supplemental Mode</p> <p>5: Enable 978/979 Supplemental Mode</p> <p>6: Enable 414/419/434/ 439 Supplemental Mode</p> <p>7: Enable 977 Supplemental Mode</p> <p>8: Enable 491 Supplemental Mode</p>
11	UPC Reduced Quiet Zone	<p>0: Disable</p> <p>1: Enable</p> <p>If enable, the 1D Quiet Zone Level in the <a href="#">Scanning Preferences</a> applies to the UPC barcode.</p>
10	Convert UPC-E1 to A	<p>0: Disable</p> <p>1: Enable</p> <p>If enable, UPC-E1 convert to UPC-A</p>
9	Convert UPC-E0 to A	<p>0: Disable</p> <p>1: Enable</p> <p>If enable, UPC-E0 convert to UPC-A</p>
8:7	UPC-E1 Preamble	<p>0: No Preamble</p> <p>1: System Character</p> <p>2: System Character &amp; Country Code</p> <p>Set preamble data transmission in front of barcode data.</p>
6:5	UPC-E0 Preamble	<p>0: No Preamble</p> <p>1: System Character</p>

		2: System Character & Country Code <i>(Does not support EM3396)</i> Set Preamble to transmit data transmission.
4:3	UPC-A Preamble	0: No Preamble <i>(Does not support EM3396)</i> 1: System Character 2: System Character & Country Code Set preamble data transmission in front of barcode data
2	Transmit UPC-E1 Check Digit	0: Disable 1: Enable If enable, sends a check digit.
1	Transmit UPC-E0 Check Digit	0: Disable 1: Enable If enable, sends a check digit.
0	Transmit UPC-A Check Digit	0: Disable 1: Enable If enable, sends a check digit.

#### 8.2.4. Bookland ISBN

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																														Bookland ISBN Format	
SE655	X																															
SE4750	X																															
EM3396	X																															

bit	Definition	Description
31:1	Reserved	Reserved
0	Bookland ISBN Format	<p>0: Bookland ISBN-10 ( A 10 bit barcode type beginning with 978)</p> <p>1: Bookland ISBN-13 (A 10 bit barcode type beginning with 978 or 979)</p> <p>Set Bookland format.</p> <p>To properly read Bookland EAN bar codes, ISBN must be enabled in <a href="#">1D Symbolologies</a> and select one of the following:</p> <p><a href="#">UPC/EAN</a> &gt; Decode Supplementals&gt; Autodiscriminate UPC / EAN with Supplementals (2) or Enable 978/979 supplemental Mode (5)</p>

### 8.2.5. Code-128

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved														Ignore Code-128 <FNC4>	Code-128 Reduced Quiet Zone	Length L2								Length L1							
SE655							X								X	X	X	X							X	X						
SE4750							X										X	X							X	X						
EM3396							X								X	X	X	X							X	X						

bit	Definition	Description
31:18	Reserved	Reserved
17	Ignore Code-128 <FNC4>	0: Disable 1: Enable When enabled, <FNC4> is removed from the decoded data and the rest of the data will not be changed. When Disable, <FNC4> is removed and +128 is added to the next data.
16	Code-128 Reduced Quiet Zone	0: Disable 1: Enable When enabled, applies Code-128 barcode to specified 1D Quiet Zone Level in <a href="#">Scanning Preferences</a> .
15:8	Length L2	0~55 Refer to <a href="#">Length Setting</a> for more details.
7:0	Length L1	0~55 Refer to <a href="#">Length Setting</a> for more details.

## 8.2.6. ISBT

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																								ISBT Concatenation Redundancy			Check ISBT Table	ISBT Concatenation			
SE655	X																															
SE4750	X																															
EM3396	X																								X			X	X			

bit	Definition	Description
31:8	Reserved	Reserved
7:3	ISBT Concatenation Redundancy	2~20 If ISBT Concatenation is set to Autodiscriminate ISBT Concatenation (2), the number of the ISBT barcoding times must be set to ensure that there is no associated ISBT barcode.
2	Check ISBT Table	0: Disable 1: Enable The ISBT contains a listed table of the types of ISBT bar codes which can be paired. If the ISBT Concatenation is enabled, set the Check ISBT Table as enabled, the table is using to check paired ISBT bar code. Other types of ISBT bar codes are not connected.
1:0	ISBT Concatenation	0: Disable ISBT Concatenation 1: Enable ISBT Concatenation 2: Autodiscriminate ISBT Concatenation Set whether to connect paired ISBT bar code

### 8.2.7. Code-39

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
Definition	Reserved										Code-39 Reduced Quiet Zone	Code-39 Buffering Scan & Store	Code-39 Full ASCII Conversion	Code-39 Check Digit Verification	Length L2								Length L1								Code-32 Prefix 'A'	Convert Code-39 to Code-32				
SE655	X										X	X			X	X									X	X										
SE4750	X														X	X									X	X										
EM3396	X										X	X			X	X									X	X									X	X

bit	Definition	Description
31:23	Reserved	Reserved
22	Code-39 Reduced Quiet Zone	0: Disable 1: Enable When enabled, applies Code-39 barcode to specified 1D Quiet Zone Level in <a href="#">Scanning Preferences</a> .
21	Code-39 Buffering Scan & Store	0: Disable 1: Enable When enabled, the code-39 data with the starting character space is stored in the buffer, and Code-39 bar code with non- starting character Space is output at once by reading.
20	Code-39 Full ASCII Conversion	0: Disable 1: Enable When enabled, data is read in full ASCII format
19:18	Code-39 Check Digit Verification	0: Disable 1: Do Not Transmit Check Digit After Verification 2: Transmit Check Digit After Verification Set up Check Digit checking and transmission.
17:10	Length L2	0~55 Refer to <a href="#">Length Setting</a> for more details.
9:2	Length L1	0~55 Refer to <a href="#">Length Setting</a> for more details.
1	Code-32 Prefix 'A'	0: Disable 1: Enable

		When enabled, the Prefix character 'A' is added to the Code-32 bar code data.
0	Convert Code-39 to Code-32	0: Disable 1: Enable If enabled, Code-39 will transmit to I Code-32.



### 8.2.8. Code-93

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																Length L2						Length L1									
SE655	X																X	X							X	X						
SE4750	X																X	X							X	X						
EM3396	X																X	X							X	X						

bit	Definition	Description
31:16	Reserved	Reserved
15:8	Length L2	0~55 Refer to <a href="#">Length Setting</a> for more details.
7:0	Length L1	0~55 Refer to <a href="#">Length Setting</a> for more details

### 8.2.9. Code-11

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved													Transmit Code-11 Check Digit	Code-11 Check Digit Verification	Length L2								Length L1								
SE655							X											X	X						X	X						
SE4750							X											X	X						X	X						
EM3396							X											X	X						X	X						

bit	Definition	Description
31:19	Reserved	Reserved
18	Transmit Code-11 Check Digit	0: Disable 1: Enable If enabled, sends a check digit.
17:16	Code-11 Check Digit Verification	0: Disable 1: One Check Digit, MOD11 2: Two Check Digit, MOD11/MOD11 Set the Check Digit.
15:8	Length L2	0~55 Refer to <a href="#">Length Setting</a> for more details
7:0	Length L1	0~55 Refer to <a href="#">Length Setting</a> for more details

### 8.2.10. Interleaved 2 of 5

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved										I 2 of 5 Reduced Quiet Zone	I 2 of 5 Security Level	Convert I 2 of 5 To EAN 13	I 2 of 5 Check Digit Verification	Length L2						Length L1											
SE655					X					X	X						X	X							X	X						
SE4750					X												X	X							X	X						
EM3396					X					X	X	X	0~2				X	X							X	X						

bit	Definition	Description
31:23	Reserved	Reserved
22	I 2 of 5 Reduced Quiet Zone	0: Disable 1: Enable If enabled, applies 12 of 5 barcode to specified 1D Quiet Zone Level in <a href="#">Scanning Preferences</a> .
21:20	I 2 of 5 Security Level	0~3: Security Level 0 ~ 3 Higher Security Levels can reduce the misreading rate, but increase decoding time
19	Convert I 2 of 5 To EAN 13	0: Disable 1: Enable When enabled, I 2of 5 barcode converts to EAN-13
18:16	I 2 of 5 Check Digit Verification	0: Disable 1: Do Not Transmit USS(Uniform Symbology Specification) Check Digit After Verification 2: Transmit USS Check Digit After Verification 3: Do Not Transmit OPCC(Optical Product Code Council) Check Digit After Verification ( <i>Does not support EM3396</i> ) 4: Transmit OPCC Check Digit After Verification ( <i>Does not support EM3396</i> ) Set up Check Digit checking and transmission.
15:8	Length L2	Refer to <a href="#">Length Setting</a> for more details
7:0	Length L1	Refer to <a href="#">Length Setting</a> for more details

### 8.2.11. Discrete 2 of 5

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																Length L2						Length L1									
SE655	X																X	X							X	X						
SE4750	X																X	X							X	X						
EM3396	X																X	X							X	X						

bit	Definition	Description
31:16	Reserved	Reserved
15:8	Length L1	0~55 Refer to <a href="#">Length Setting</a> for more details
7:0	Length L1	0~55 Refer to <a href="#">Length Setting</a> for more details

### 8.2.12. Codabar

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved													Codabar Start/Stop Characters	NOTIS Editing	CLSI Editing	Length L2							Length L1								
SE655							X											X	X					X	X							
SE4750							X											X	X					X	X							
EM3396							X										X	X	X					X	X							

bit	Definition	Description
31:19	Reserved	Reserved
18	Codabar Start/Stop Characters	0: Upper Case 1: Lower Case sets the Capital / lower case format of characters for start, "stop" S
17	NOTIS Editing	0 : Disable 1 : Enable If enable , start, stop character will be removed
16	CLSI Editing	0 : Disable 1 : Enable When enabled, the start and stop characters will be removed from the 14 digit Codabar barcode including Check Digit, and a blank is inserted after the 1st, 5th and 10th data.
15:8	Length L2	0~55 Refer to <a href="#">Length Setting</a> for more details
7:0	Length L1	0~55 Refer to <a href="#">Length Setting</a> for more details

### 8.2.13. MSI

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Definition	Reserved													Transmit MSI Check Digit	MSI Check Digit Verification		Length L2								Length L1								
SE655							X											X	X							X	X						
SE4750							X											X	X							X	X						
EM3396							X											X	X							X	X						

bit	Definition	Description
31:19	Reserved	Reserved
18	Transmit MSI Check Digit	0: Disable 1: Enable If enabled, sends a check digit.
17:16	MSI Check Digit Verification	0: One Check Digit, MOD10 1: Two Check Digit, MOD10/MOD10 2: Two Check Digit, MOD10/MOD11 One, Two Check Digit is set up.
15:8	Length L2	0~55 Refer to <a href="#">Length Setting</a> for more details
7:0	Length L1	0~55 Refer to <a href="#">Length Setting</a> for more details

#### 8.2.14. Matrix 2 of 5

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
Definition	Reserved													Matrix 2 of 5 Redundancy	Matrix 2 of 5 Check Digit Verification	Length L2								Length L1											
SE655	X															X	X									X	X								
SE4750	X													X		X	X									X	X								
EM3396	X													X		X	X									X	X								

bit	Definition	Description
31:19	Reserved	Reserved
18	Matrix 2 of 5 Redundancy	0: Disable 1: Enable Set up redundancy
17:16	Matrix 2 of 5 Check Digit Verification	0: Disable 1: Do Not Transmit Check Digit After Verification 2: Transmit Check Digit After Verification Set up Check Digit checking and transmission.
15:8	Length L2	0~55 Refer to <a href="#">Length Setting</a> for more details
7:0	Length L1	0~55 Refer to <a href="#">Length Setting</a> for more details

### 8.2.15. GS1 Databar

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																Convert GS1 Databar to UPC/EAN										GS1 Databar Limited Security Level					
SE655	X																										X					
SE4750	X																															
EM3396	X																										X	X				

bit	Definition	Description
31:3	Reserved	Reserved
2	Convert GS1 Databar to UPC/EAN	0: Disable 1: Enable Convert GS1 Databar and GS1 Databar Limited barcodes starting with "010" to EAN-13, or convert GS1 Databar and GS1 Databar Limited barcodes that of more than 2 digits and less than 6 digits and starting with zeros to UPC-A.
1:0	GS1 Databar Limited Security Level	0 ~ 3: Security Level 1 ~ 4 Set higher security levels can reduce the rate of misreading, but increase decoding time.



## 8.2.16. Postal Codes

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																												Australia Post Format	Transmit UK Postal Check Digit	Transmit US Postal Check Digit	
SE655																													X	X	X	
SE4750																																
EM3396																													X	X	X	

bit	Definition	Description
31:4	Reserved	Reserved
3:2	Australia Post Format	0: Auto-discriminate 1: Raw Format (numbers 0 through 3) 2: Alphanumeric Encoding (C Encoding Table) 3: Numeric Encoding (N Encoding Table) Set the Australia Post format.
1	Transmit UK Postal Check Digit	0: Disable 1: Enable If enabled, sends a check digit.
0	Transmit US Postal Check Digit	0: Disable 1: Enable If enabled, sends a check digit.

### 8.2.17. Composite

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																GS1-128 Emulation Mode										UPC Composite Mode					
SE655	X																										X	X				
SE4750	X																															
EM3396	X																										X	X				

bit	Definition	Description
31:3	Reserved	Reserved
2	GS1-128 Emulation Mode	0: Disable 1: Enable Sets the GS1-128 Emulation Mode for GS1-128 Composite Codes
1:0	UPC Composite Mode	0: UPC Never Linked (transmits UPC barcode regardless of 2D barcode detection) 1: UPC Always Linked (UPC barcode and 2D barcode are transmitted. If there is no 2D barcode, UPC barcode is not transmitted.) 2: Autodiscriminate UPC Composites (Determines whether a 2D barcode is exist and determines whether or not to send a UPC barcode.)

### 8.2.18. Micro PDF-417

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																															Code-128 Emulation
SE655	X																															X
SE4750	X																															X
EM3396	X																															X

bit	Definition	Description
31:2	Reserved	Reserved
0	Code-128 Emulation	<p>0: Disable 1: Enable</p> <p>When enabled, certain Micro PDF-417 barcodes are transmitted as Code-128 barcodes. For this setting to work, it must be set to <a href="#">Data Format</a> &gt; Transmit Code ID Character &gt; AIM Code ID Character (1).</p> <p>Enable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes: JC1 if the first codeword is 903-905 JC2 if the first codeword is 908 or 909 JC0 if the first codeword is 910 or 911</p> <p>Disable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes: JL3 if the first codeword is 903-905 JL4 if the first codeword is 908 or 909 JL5 if the first codeword is 910 or 911</p>

### 8.2.19. Macro PDF

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0						
Definition	Reserved																										Escape Characters				Transmit Macro PDF Control Header				Macro PDF Transmit/Decode Mode Symbols			
SE655																											X				X				X			
SE4750																											X											
EM3396																											X				X				X			

bit	Definition	Description
31:4	Reserved	Reserved
3	Escape Characters	<p>0: None 1: GLI Protocol</p> <p>Depending on the GLI (Global Label Identifier) protocol, the backslash (\) character can be used as an escape character. This setting affects the Macro PDF symbol transmitted data. If transmit Macro PDF Control Header is enabled (1), the data is transmitted in GLI format.</p>
2	Transmit Macro PDF Control Header	<p>0: Disable 1: Enable</p> <p>When enabled, sends control header information including the segment index and file ID of the MacroPDF symbol. It is applied when Macro PDF Transmit / Decode Mode Symbols is set to Transmit Any Symbol in Set / No Particular Order (1) and When Complete Buffer All Symbols / Transmit Macro PDF is cleared (0). When Passthrough All Symbols (2) there is no effect.</p>
1:0	Macro PDF Transmit/Decode Mode Symbols	<p>0: Buffer All Symbols/Transmit Macro PDF When Complete(up to 50 maximum-sized Macro PDF symbols) 1: Transmit Any Symbol in Set/No Particular Order 2: Passthrough All Symbols</p> <p>0: If scan all Macro PDF symbols sequentially, all decoded data will be transmit. If the number of decoded data symbols exceeds 50, no transmission is made because the scan process was not completed. 1: Transmit each decoded Macro PDF symbol in any order. If this mode</p>

		<p>is selected, the Transmit Macro PDF Control Header setting is applied.</p> <p>2: Even all Macro PDF symbols are decoding and sent to the host, there is no reaction in this mode, because the host must detect and analyze the order of the Macro PDF symbols.</p>
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### 8.2.20. Data Matrix

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																Data Matrix Decode Mirror Images															
SE655	X																X															
SE4750	X																															
EM3396	X																0, 2															

bit	Definition	Description
31:2	Reserved	Reserved
1:0	Data Matrix Decode Mirror Images	0: Never 1: Always ( <i>Does not support EM3396</i> ) 2: Auto Sets whether to read a mirrored Data Matrix barcode

### 8.2.21. Scanning Preferences

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	<div>Decode Session Timeout</div> <div>FNCI Enable</div> <div>FNCI Value</div> <div>Inverse 1D</div> <div>Inverse 2D</div> <div>Picklist Mode</div> <div>Mirrored Image</div> <div>Mobile Phone/Display Mode</div> <div>Decoding Illumination</div> <div>Decode Aiming Pattern</div> <div>1D Quiet Zone Level</div> <div>Intercharacter Gap Size</div> <div>Fuzzy 1D Processing</div> <div>Reserved</div>																															
SE655		X		X	X	X		X	X	X	X	X	X																			
SE4750		X																														
EM3396		X		X	X	X				X	X		0, 2	X																		

bit	Definition	Description
31:28	Reserved	Reserved
28	Fuzzy 1D Processing	0: Disable 1: Enable When enabled, the reading performance of damaged or poor quality 1D barcodes is improved. Use disable in case that 2D bar code reading is slow or not readable.
27	Intercharacter Gap Size	0: Normal Intercharacter Gaps 1: Large Intercharacter Gaps Code 39 and Codabar barcodes are symbol systems in which characters are separated by intercharacter gaps. The barcodes cannot be read If the intercharacter gap is larger than the maximum allowable size. Please set up the Large Intercharacter Gaps (1)
26:25	1D Quiet Zone Level	0: performs normally in terms of quiet zone. 1: performs more aggressively in terms of quiet zone. 2: only requires one side EB for decoding. 3: decodes anything in terms of quiet zone or end of bar code. The decoding level should be set when reading a Quiet Zone (the white area at the front and end of a barcode) which is smaller than the standard size.
24	Decode Aiming Pattern	0: Disable 1: Enable When enabled, Aimer is visual, which is capable of aiming at the bar code reading position when reading a bar code.

23	Decoding Illumination	0: Disable 1: Enable When enabled, the illumination will brightly shine when the barcode is reading.
22	Mobile Phone/Display Mode	0: Disable 1: Enable When enabled, improves the reading performance of bar codes output on mobile phones or electronic displays.
21	Mirrored Image	0: Disable 1: Enable When enabled, the mirrored barcode as seen through the mirror is present. <i>Note. For the EM3396, reading the Mirrored Image is default.</i>
20	Picklist Mode	0: Disable 1: Enable When enabled, only the bar code located at the center of the Aimer pattern is read..
19:18	Inverse 2D	0: Regular 2D Only 1: Inverse 2D Only ( <i>Does not support EM3396</i> ) 2: Inverse 2D Autodetect Sets whether to read 2D inverse barcode of inverted black pattern and white patter
17:16	Inverse 1D	0: Regular 1D Only 1: Inverse 1D Only 2: Inverse 1D Autodetect Sets whether to read 1D Inverse Barcode of inverted black bars and white bars. <i>Note. For the EM3396, reading Inverse 1D barcode is default.</i>
15:9	*FNC1 Value	0~126 ASCII Code <i>Note. When NULL (0x00) value is input, FNC1 digit is removed</i>
8	*FNC1 Enable	0: Disable 1: Enable When enabled, the FNC1 data of GS1 System and Code-128 barcode to ASCII data set in FNC1 Value will all changed.



7:0	Decode Session Timeout	5~99 (unit. 0.1sec) ex) 5 = 0.5 sec, 99 = 9.9 sec Set barcode reading time.
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✓ *Note. \* When reset, device restore to factory value.*

## 8.2.22. Data Format

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Definition	Reserved						Suffix 2							Suffix 1							Prefix							Scan Data Transmission Format			Transmit Code ID Character		
SE655																																	
SE4750																																	
EM3396																																	

bit	Definition	Description
31:26	Reserved	Reserved
25:19	Suffix 2	0~126 ASCII Code
18:12	Suffix 1	0~126 ASCII Code
11:5	Prefix	0~126 ASCII Code
4:2	Scan Data Transmission Format	0: Data As Is 1: <DATA> <SUFFIX 1> 2: <DATA> <SUFFIX 2> 3: <DATA> <SUFFIX 1> <SUFFIX 2> 4: <PREFIX> <DATA> 5: <PREFIX> <DATA> <SUFFIX 1> 6: <PREFIX> <DATA> <SUFFIX 2> 7: <PREFIX> <DATA> <SUFFIX 1> <SUFFIX 2> Set up data transmission format.
1:0	Transmit Code ID Character	0: None 1: AIM Code ID Character 2: Symbol Code ID Character Set whether to output Code ID to DATA. For more information about <a href="#">Symbol Code ID</a> and <a href="#">AIM Code ID</a> refer to Symbol Code ID and AIM Code ID.

### 8.2.23. Redundancy & Security Level

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																												Security Level	Redundancy Level		
SE655	X																															
SE4750	X																															
EM3396	X																												X	X		

bit	Definition	Description
31:4	Reserved	Reserved
3:2	Security Level	0 ~ 3: Security Level 0 ~ 3 0 ~ 3: Security Level 0 ~ 3 Specifies the security level of delta barcodes including UPC / EAN and Code 93. Higher Security Levels can reduce the rate of misreading, but increase decoding time.
1:0	Redundancy Level	0 ~ 3: Redundancy Level 1 ~ 4 For details, see Table 4. Redundancy Level..

Redundancy Level	Code Type	Code Length	Successfully Read
1	Codabar	8 characters or less	Success in reading 2 times
	MSI	4 characters or less	
	D 2 of 5	8 characters or less	
	I 2 of 5	8 characters or less	
2	All	All	Success in reading 2 times
3	Codabar	4 characters or less	Success in reading 2 times
	MSI	8 characters or less	
	D 2 of 5	8 characters or less	
	I 2 of 5	8 characters or less	
4	All	All	Success in reading 2 times

**Table 4. Redundancy Level**

## 8.2.24. Delimiter

bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Definition	Reserved																Delimiter 2						Delimiter 1						Delimiter Transmission Format			
SE655	X																															
SE4750	X																															
EM3396	X																X						X						X			

bit	Definition	Description
31:16	Reserved	Reserved
15:9	*Delimiter 2	0~126 ASCII Code
8:2	*Delimiter 1	0~126 ASCII Code
1:0	*Delimiter Transmission Format	0: Data As Is 1: <DATA 1> <DELIMITER 1> <DATA 2> ... 2: <DATA 1> <DELIMITER 2> <DATA 2> ... 3: <DATA 1> <DELIMITER 1> <DELIMITER 2> <DATA 2> ... In <a href="#">UPC/EAN</a> , if you set the Supplemental AIM ID Format to Separate Transmissions (2), or if the barcode format is Structured Append, set the format on the multi data transmission..

✓ *Note. \* When reset, device restore to factory value..*

### 8.3. Length Setting

✓ **Minimum/Maximum Length Limitation**

You can set the length from 0 to 55, but if you set the minimum / maximum length too short or too long to read the bar code, the "error code rate" will be higher than normal. For this reason, it is recommended to use the currently set default value.

#### 8.3.1. SE655 1D / SE4750 2D Engine

Code Length Option	Length L1	Length L2
One discrete length	0 ~ 55	0
Two discrete length	Higher length value	Lower length value
Length within a range	Lower length value	Higher length value
Any length barcode	0	0

#### 8.3.2. EM3396 2D Engine

Code Length Option	Length L1	Length L2
One discrete length	0 ~ 55	Same value
Two discrete length	Higher length value	Lower length value
Length within a range	Lower length value	Higher length value

## 8.4. Barcode Type ID

### 8.4.1. SE655 1D / SE4750 2D Engine

Symbology	Hex Value	Symbology	Hex Value
Not Applicable	0x00	Aztec Rune Cod	0x2E
Code-39	0x01	GS1 DataBar-14	0x30
Codabar	0x02	GS1 DataBar Limited	0x31
Code-128	0x03	GS1 DataBar Expanded	0x32
Discrete 2 of 5	0x04	Parameter (FNC3)	0x33
IATA 2 of 5	0x05	4State US	0x34
Code-93	0x07	4State US4	0x35
UPC-A	0x08	UPC+A + 2	0x48
UPC-E0	0x09	UPC+E0 + 2	0x49
EAN-8	0x0A	EAN-8 + 2	0x4A
EAN-13	0x0B	EAN-13 + 2	0x4B
Code-11	0x0C	UPC+E1 + 2	0x50
Code-49	0x0D	Composite (CC-A + GS1-128)	0x51
MSI	0x0E	Composite (CC-A + EAN-13)	0x52
GS1-128	0x0F	Composite (CC-A + EAN-8)	0x53
UPC-E1	0x10	Composite (CC-A + GS1 DataBar Expanded)	0x54
PDF-417	0x11	Composite (CC-A + GS1 DataBar Limited)	0x55
Code-16K	0x12	Composite (CC-A + GS1 DataBar-14)	0x56
Code-39 Full ASCII	0x13	Composite (CC-A + UPC-A)	0x57
UPCD	0x14	Composite (CC-A + UPC-E)	0x58
Trioptic Code-39	0x15	Composite (CC-C + GS1-128)	0x59
Bookland EAN	0x16	TLC-39	0x5A
Coupon Code	0x17	Composite (CC-B + GS1-128)	0x61
NW7	0x18	Composite (CC-B + EAN-13)	0x62
ISBT-128	0x19	Composite (CC-B + EAN-8)	0x63
Micro PDF	0x1A	Composite (CC-B + GS1 DataBar Expanded)	0x64
Data Matrix	0x1B	Composite (CC-B + GS1 DataBar	0x65

		Limited)	
QR Code	0x1C	Composite (CC-B + GS1 DataBar-14)	0x66
Micro PDF CCA	0x1D	Composite (CC-B + UPC-A)	0x67
Postnet (US)	0x1E	Composite (CC-B + UPC-E)	0x68
Planet (US)	0x1F	Matrix 2 of 5	0x71
Code-32	0x20	Chinese 2 of 5	0x72
ISBT-128 Concat.	0x21	Korean 3 of 5	0x73
Postal (Japan)	0x22	UPC-A + 5	0x88
Postal (Australia)	0x23	UPC+E0 + 5	0x89
Postal (Dutch)	0x4	EAN-8 + 5	0x8A
Maxicode	0x25	EAN-13 + 5	0x8B
Postbar (CA)	0x26	UPC-E1 + 5	0x90
Postal (UK)	0x27	Macro Micro PDF	0x9A
Macro PDF-417	0x28	GS1 Databar Expanded Coupon	0xB4
Macro QR Code	0x29	Han Xin	0xB7
Micro QR Code	0x2C	GS1 Datamatrix	0xC1
Aztec Code	0x2D		

#### 8.4.2. EM3396 2D Engine

Symbology	Hex Value	Symbology	Hex Value
Code-128	0x02	Code-93	0x11
GS1-128	0x03	ISBN	0x18
EAN-8	0x04	DTF	0x19, 0x20
EAN-13	0x05	Code-11	0x1C
UPC-E0	0x06	MSI	0x1D
UPC-A	0x07	GS1 Databar	0x1F
ITF	0x08	PDF417	0x20
MTF	0x0B	QR Code	0x21
Code-39	0x0D	Data Matrix	0x23
Codabar	0x0F	Hanxin	0x27



## 8.5. Symbol Code ID

### 8.5.1. SE655 1D / SE4750 2D Engine

Code Character	Code Type
A	UPC-A, UPC-E0, UPC-E1, EAN-8, EAN-13
B	Code 39, Code 32
C	Codabar
D	Code 128, ISBT 128, ISBT 128 Concatenated
E	Code 93
F	Interleaved 2 of 5
G	Discrete 2 of 5, or Discrete 2 of 5 IATA
H	Code 11
J	MSI
K	GS1-128
L	Bookland EAN
M	Trioptic Code 39
N	Coupon Code
R	GS1 DataBar Family
S	Matrix 2 of 5
T	UCC Composite, TLC 39
U	Chinese 2 of 5
V	Korean 3 of 5
X	ISSN EAN, PDF417, Macro PDF417, Micro PDF417
Z	Aztec, Aztec Rune
P00	Data Matrix
P01	QR Code, MicroQR
P02	Maxicode
P03	US Postnet
P04	US Planet
P05	Japan Postal
P06	UK Postal
P08	Netherlands KIX Code
P09	Australia Post

P0A	USPS 4CB/One Code/Intelligent Mail
P0B	UPU FICS Postal
P0H	Han Xin

### 8.5.2. EM3396 2D Engine

Code Character	Code Type
a	Codabar
b	Code-39
c	UPC-A, UPC-E0
d	EAN-8, EAN-13
e	Interleaved 2 of 5
h	HanXin
i	Code-93
j	Code-128, GS1-128
m	MSI
n	ISSN
r	PDF-417
s	Discrete 2 of 5
u	Data Matrix
B	ISBN
H	Code-11
Q	QR Code
R	GS1-Databar
V	Matrix 2 of 5

## 8.6. AIM Code ID

The AIM Code ID consists of three characters as shown below.

.

J	Flag Character (ASCII 93)
C	Code Character
M	Modifier Character

### AIM ID Code Characters

Code Character	Code Type
A	Code 39, Code 39 Full ASCII, Code 32
C	Code 128, ISBT 128, ISBT 128 Concatenated, GS1-128, Coupon (Code 128 portion)
d	Data Matrix
E	UPC/EAN, Coupon (UPC portion)
e	GS1 DataBar Family
F	Codabar
G	Code 93
H	Code 11
h	Han Xin
I	Interleaved 2 of 5
L	PDF417, Macro PDF417, Micro PDF417
L2	TLC 39
M	MSI
Q	QR Code, MicroQR
S	Discrete 2 of 5, IATA 2 of 5
U	Maxicode
z	Aztec, Aztec Rune
X	Bookland EAN, ISSN EAN, Trioptic Code 39, Chinese 2 of 5, Matrix 2 of 5, Korean 3 of 5, US Postnet, US Planet, UK Postal, Japan Postal, Australia Post, Netherlands KIX Code, USPS 4CB/One Code/Intelligent Mail, UPU FICS Postal

## AIM ID Modifier Characters

Code Type	Modifier Char	Option
Code 39	0	No check character or Full ASCII processing.
	1	Reader has checked one check character
	3	Reader has checked and stripped check character.
	4	Reader has performed Full ASCII character conversion.
	5	Reader has performed Full ASCII character conversion and checked one check character.
	7	Reader has performed Full ASCII character conversion and checked and stripped check character.
Trioptic Code 39	0	No option specified at this time. Always transmit 0.
Code 128	0	Standard data packet, no Function code 1 in first symbol position.
	1	Function code 1 in first symbol character position.
	2	Function code 1 in second symbol character position.
I 2 of 5	0	No check digit processing.
	1	Reader has validated check digit.
	3	Reader has validated and stripped check digit.
Codabar	0	No check digit processing.
	1	Reader has checked check digit.
	3	Reader has stripped check digit before transmission.
Code 93	0	No options specified at this time. Always transmit 0.
MSI	0	Check digits are sent.
	1	No check digit is sent.
D 2 of 5	0	No options specified at this time. Always transmit 0.
UPC/EAN	0	Standard data packet in full EAN format, i.e. 13 digits for UPC-A, UPC-E, and EAN-13 (not including supplemental data).
	1	Two digit supplemental data only.
	2	Five digit supplemental data only.
	3	Combined data packet comprising 13 digits from EAN-13, UPC-A or UPC-E symbol and 2 or 5 digits from supplemental symbol.
	4	EAN-8 data packet.
Bookland EAN	0	No options specified at this time. Always transmit 0.
ISSN EAN	0	No options specified at this time. Always transmit 0.

Code 11	0	Single check digit
	1	Two check digits
	3	Check characters validated but not transmitted.
GS1 Databar Family		No option specified at this time. Always transmit 0. GS1 DataBar and GS1 DataBar Limited transmit with an Application Identifier "01". Note: In GS1-128 emulation mode, GS1 DataBar is transmitted using Code 128 rules (i.e., JCI).
EAN.UCC Composites (GS1 Databar, GS1-128, 2D Portion of UPC Composite)		Native mode transmission. Note: UPC portion of composite is transmitted using UPC rules.
	0	Standard data packet.
	1	Data packet containing the data following an encoded symbol separator character.
	2	Data packet containing the data following an escape mechanism character. The data packet does not support the ECI protocol.
	3	Data packet containing the data following an escape mechanism character. The data packet supports the ECI protocol.
		GS1-128 emulation Note: UPC portion of composite is transmitted using UPC rules.
	1	Data packet is a GS1-128 symbol (i.e., data is preceded with JCI).
PDF417, Micro PDF417	0	Reader set to conform to protocol defined in 1994 PDF417 symbology specifications. <b>Note:</b> When this option is transmitted, the receiver cannot reliably determine whether ECIs have been invoked or whether data byte 92DEC has been doubled in transmission.
	1	Reader set to follow the ECI protocol (Extended Channel Interpretation). All data characters 92DEC are doubled.
	2	Reader set for Basic Channel operation (no escape character transmission protocol). Data characters 92DEC are not doubled. <b>Note:</b> When decoders are set to this mode, unbuffered Macro symbols and symbols requiring the decoder to convey ECI escape sequences cannot be transmitted.
	3	The bar code contains a GS1-128 symbol, and the first codeword is 903-907, 912, 914, 915.
	4	The bar code contains a GS1-128 symbol, and the first codeword is in the

		range 908-909.
	5	The bar code contains a GS1-128 symbol, and the first codeword is in the range 910-911.
Data Matrix	0	ECC 000-140, not supported.
	1	ECC 200.
	2	ECC 200, FNC1 in first or fifth position.
	3	ECC 200, FNC1 in second or sixth position.
	4	ECC 200, ECI protocol implemented.
	5	ECC 200, FNC1 in first or fifth position, ECI protocol implemented.
	6	ECC 200, FNC1 in second or sixth position, ECI protocol implemented.
MaxiCode	0	Symbol in Mode 4 or 5.
	1	Symbol in Mode 2 or 3.
	2	Symbol in Mode 4 or 5, ECI protocol implemented.
	3	Symbol in Mode 2 or 3, ECI protocol implemented in secondary message.
QR Code	0	Model 1 symbol.
	1	Model 2 / MicroQR symbol, ECI protocol not implemented.
	2	Model 2 symbol, ECI protocol implemented.
	3	Model 2 symbol, ECI protocol not implemented, FNC1 implied in first position.
	4	Model 2 symbol, ECI protocol implemented, FNC1 implied in first position.
	5	Model 2 symbol, ECI protocol not implemented, FNC1 implied in second position.
	6	Model 2 symbol, ECI protocol implemented, FNC1 implied in second position.
Aztec	0	Aztec symbol.
	C	Aztec Rune symbol.

## 9. Notify Event List

When the status of the READER changes, the events sent to host are as follows:

### Reader Transmission to Host

Event	Description	비고
\$pwr=0	Power Off Notice, Exception on Reset	<a href="#">Reader_Status_Report</a>
\$lowbat=1	Low Battery notice	Reserved
\$clear	Notice when clearing data with clear button on the reader	<a href="#">COMMON</a> <a href="#">Set_Clear_Report</a> Set whether or not to transmit event when memory data is deleted by reader's Clear button.
\$trigger=0,\$batt=XXX	RFID key Up notice	<a href="#">Reader_Status_Report</a>
\$trigger=1,\$batt=XXX	RFID key Down notice	<a href="#">Reader_Status_Report</a>
\$trigger=2,\$batt=XXX	SCAN key Up notice	<a href="#">Reader_Status_Report</a>
\$trigger=3,\$batt=XXX	SCAN key Down notice	<a href="#">Reader_Status_Report</a>
\$online=0	Notice to stop connecting between Host and Bluetooth	<a href="#">Reader_Status_Report</a>
\$batt=XXX	Battery status notice	Reserved



## 10.Default Table

### 10.1.Device Default Value

Parameter	Default Value
Beep Volume	Max (2)
Vibrator	Disable (0)
Report State	Trigger / Low Battery
Report Battery	Disable
Terminator Character	Disable (0)

### 10.2.UHF Default Value

Parameter	Default Value
TX Cycle	On: 60ms, Off: 140ms(30%)
TX Power	0dbm (Max Power)
Session	Session_1 (1)
Q value	5(32 tags)
Target	Target_A (0)
MASK	Disable
LINK Profile	1
FastID	Disable
Tag Focus	Enable
Report battery	Disable
Data Format	PC+EPC+CRC (0)
Transmission Format	Data As Is (0)
Prefix Data	NULL (0)
Suffix1 Data	NULL (0)
Suffix2 Data	NULL (0)
RFID Inventory Data LCD Off	Disable (0)

### 10.3.SCANNER Default Value

Symbology	Default Value
<b>1D Symbologies</b>	
UPC-A	Enable (1)
UPC-E0	Enable (1)
UPC-E1	Disable (0)
EAN-8 / JAN-8	Enable (1)
EAN-13 / JAN-13	Enable (1)
ISBN	Disable (0)
ISSN	Disable (0)
Code-128	Enable (1)
GS1-128	Enable (1)
ISBT-128	Enable (1)
Code-39	Enable (1)
Trioptic Code-39	Disable (0)
Code-93	Disable (0)
Code-11	Disable (0)
Interleaved 2 of 5	Enable (1)
Discrete 2 of 5	Enable (1)
Codabar	Enable (1)
MSI	Enable (1)
Chinese 2 of 5	Disable (0)
Matrix 2 of 5	Disable (0)
Korean 3 of 5	Disable (0)
GS1 DataBar	Enable (1)
GS1 DataBar Limited	Enable (1)
GS1 DataBar Expanded	Enable (1)
<b>2D Symbologies</b>	
US Postnet	Disable (0)
US Planet	Disable (0)
UK Postal	Disable (0)
Japan Postal	Disable (0)

Australia Post	Disable (0)
Netherlands KIX Code	Disable (0)
Intelligent Mail	Disable (0)
UPU FICS Postal	Disable (0)
Composite CC-C	Disable (0)
Composite CC-A/B	Disable (0)
Composite TLC-39	Disable (0)
PDF-417	Enable (1)
Micro PDF-417	Enable (1)
Data Matrix	Enable (1)
Maxi Code	Disable (0)
QR Code	Enable (1)
Micro QR	Enable (1)
Aztec	Enable (1)
HanXin	Disable (0)
<b>UPC / EAN</b>	
Transmit UPC-A Check Digit	Enable (1)
Transmit UPC-E0 Check Digit	Enable (1)
Transmit UPC-E1 Check Digit	Enable (1)
UPC-A Preamble	System Character (1)
UPC-E0 Preamble	System Character (1)
UPC-E1 Preamble	System Character (1)
Convert UPC-E0 to UPC-A	Disable (0)
Convert UPC-E1 to UPC-A	Disable (0)
UPC Reduced Quiet Zone	Disable (0)
Decode UPC/EAN Supplementals	Autodiscriminate UPC/EAN Supplementals (2)
UPC/EAN/JAN Supplemental Redundancy	7
UPC/EAN/JAN Supplemental AIM ID Format	Combined (1)
EAN-8 / JAN-8 Extend (EAN-13)	Disable (0)
UCC Coupon Extended Code	Disable (0)
Coupon Report	Both(Auto) Coupon Formats (2)
<b>Bookland (ISBN)</b>	
Bookland ISBN Format	Bookland ISBN-10 (0)

<b>Code 128</b>	
Set Length for Code 128	1 ~ 48
Code 128 Reduced Quiet Zone	Disable (0)
Ignore Code 128 <FNC4>	Disable (0)
<b>ISBT</b>	
ISBT Concatenation	Disable ISBT Concatenation (0)
Check ISBT Table	Enable (1)
ISBT Concatenation Redundancy	10
<b>Code 39</b>	
Convert Code 39 to Code 32	Disable (0)
Code 32 Prefix 'A'	Disable (0)
Set Length for Code 39	2 ~ 48
Code 39 Check Digit Verification	Disable (0)
Code 39 Full ASCII Conversion	Disable (0)
Code 39 Buffering - Scan & Store	Disable (0)
Code 39 Reduced Quiet Zone	Disable (0)
<b>Code 93</b>	
Set Length for Code 93	4 ~ 48
<b>Code 11</b>	
Set Length for Code 11	4 ~ 48
Code 11 Check Digit Verification	Disable (0)
Transmit Code 11 Check Digit	Enable (1)
<b>Interleaved 2 of 5</b>	
Set Lengths for I 2 of 5	6 ~ 48
I 2 of 5 Check Digit Verification	Disable (0)
Convert I 2 of 5 To EAN 13	Disable (0)
I 2 of 5 Security Level	Security Level 1 (1)
I 2 of 5 Reduced Quiet Zone	Disable (0)
<b>Discrete 2 of 5</b>	
Set Lengths for D 2 of 5	6 ~ 48
<b>Codabar</b>	
Set Lengths for Codabar	2 ~ 55
CLSI Editing	Disable (0)

NOTIS Editing	Disable (0)
Codabar Start/Stop Characters Detection	Lower Case (1)
<b>MSI</b>	
Set Length for MSI	4 ~ 48
MSI Check Digits	One Check Digit, MOD10 (0)
Transmit MSI Check Digit	Enable (1)
<b>Matrix 2 of 5</b>	
Set Lengths for Matrix 2 of 5	4 ~ 48
Matrix 2 of 5 Check Digit Verification	Disable (0)
Matrix 2 of 5 Redundancy	Disable (0)
<b>GS1 Databar</b>	
GS1 DataBar Limited Security Level	Security Level 3 (2)
Convert GS1 DataBar to UPC/EAN	Disable (0)
<b>Postal Codes</b>	
Transmit US Postal Check Digit	Enable (1)
Transmit UK Postal Check Digit	Enable (1)
Australia Post Format	Autodiscriminate (0)
<b>Composite</b>	
UPC Composite Mode	UPC Always Linked (1)
GS1-128 Emulation Mode	Disable (0)
<b>MicroPDF417</b>	
Code 128 Emulation	Disable (0)
<b>Macro PDF</b>	
Macro PDF Transmit/Decode Mode Symbols	Passthrough All Symbols (2)
Transmit Macro PDF Control Header	Enable (1)
Escape Characters	None (0)
<b>Data Matrix</b>	
Data Matrix Decode Mirror Images	Auto (2)
<b>Scanning Preferences</b>	
Decode Session Timeout	9.9sec (99)
FNC1 Enable	Disable (0)
FNC1 Value	NULL (0)
Inverse 1D	Regular Only (0)

Inverse 2D	Regular Only (0)
Picklist Mode	Enable (1)
Mirrored Image	Disable (0)
Mobile Phone/Display Mode	Disable (0)
Decoding Illumination	Enable (1)
Decode Aiming Pattern	Enable (1)
1D Quiet Zone Level	Performs more aggressively in terms of quiet zone (1)
Intercharacter Gap Size	Normal Intercharacter Gaps (0)
Fuzzy 1D Processing	Enable (1)
<b>Data Format</b>	
Transmit Code ID Character	None (0)
Scan Data Transmission Format	Data As Is (0)
Prefix	< (60)
Suffix 1	> (62)
Suffix 2	. (46)
<b>Redundancy &amp; Security Level</b>	
Redundancy Level	Redundancy Level 2 (1)
Security Level	Security Level 1 (1)
<b>Delimiter</b>	
Delimiter Transmission Format	Data As Is (0)
Delimiter 1	LF (10)
Delimiter 2	CR (13)

## 11. Error codes

### 11.1. UHF RFID EPC Global Gen2 Tag Error Codes

These error codes are the tag error codes same to the value of err\_tag=XX

Error Code	Name	Description
0x00	Other error	Catch-all for errors not covered by other codes
0x01	No supported	The Tag does not support the specified parameters or feature
0x02	Insufficient privileges	The Interrogator did not authenticate itself with sufficient privileges for the Tag to perform the operation
0x03	Memory overrun	The Tag memory location does not exist, is too small, or the Tag does not support the specified EPC length
0x04	Memory locked	The Tag memory location is locked or permalocked and is either not writeable or not readable
0x05	Crypto suite error	Catch-all for errors specified by the cryptographic suite
0x06	Command not encapsulated	The Interrogator did not encapsulate the command in an AuthComm or SecureComm as required
0x07	Response Buffer overflow	The operation failed because the ResponseBuffer overflowed
0x08	Security timeout	The command failed because the Tag is in a security timeout
0x0B	Insufficient power	The Tag has insufficient power to perform the operation
0x0F	Non-specific error	The Tag does not support error-specific codes

## 11.2. UHF RF Transceiver Error Codes

These errors are module internal error same to the value of err\_op=XX

### R-900

Error Code	Description
0x01	Read after write verify failed.
0x02	Problem transmitting tag command.
0x03	CRC error on tag response to a write.
0x04	CRC error on the read packet when verifying the write.
0x05	Maximum retry's on the write exceeded.
0x06	Failed waiting for read data from tag, possible timeout.
0x07	Failed requesting a new tag handle.
0x0A	Error waiting for tag response, possible timeout.
0x0B	CRC error on tag response to a kill.
0x0C	Problem transmitting 2nd half of tag kill.
0x0D	Tag responded with an invalid handle on first kill command.
0x0F	Bad Access Password
Others	Internal Use

### R-800

Error Code	Description
0x01	Handle Mismatch
0x02	CRC error on tag response
0x03	No tag Reply
0x04	Invalid Password
0x05	Zero Kill Password
0x06	Tag Lost
0x07	CMD Format Error
0x08	Read Count Invalid
0x09	Out of retries



### 11.3.Scanner Error Codes

These errors are scanner error same to the value of err\_scn=XX.

Error Code	Name	Description
0x01	Normal error	Is not specified, common error occurred.
0x02	Initialize error	An error occurred during initialization scanner.
0x03	Stop error	Reserved.
0x04	Verify Checksum	It was a checksum error occurs in data received from the scanner.
0x05	Verify OpCode	It was received from the scanner is invalid opcode.
0x06	UART Timeout	This timeout occurred during communication scanner.
0x07	Unknown Engine	Not know the scanner engine type.
0x08	Invalid Command	The invalid command.
0x09	Invalid OpCode	The invalid OpCode.
0x0A	Invalid Parameter	The invalid parameter.
0x0B	Buffer OverRun	The length of the bar code was received exceeds the buffer size.
0x0C	Scanner Busy	The scanner is currently running.

## 12.UHF Tag Logical Memory Map

In general, memory mapping of tags is as follows..

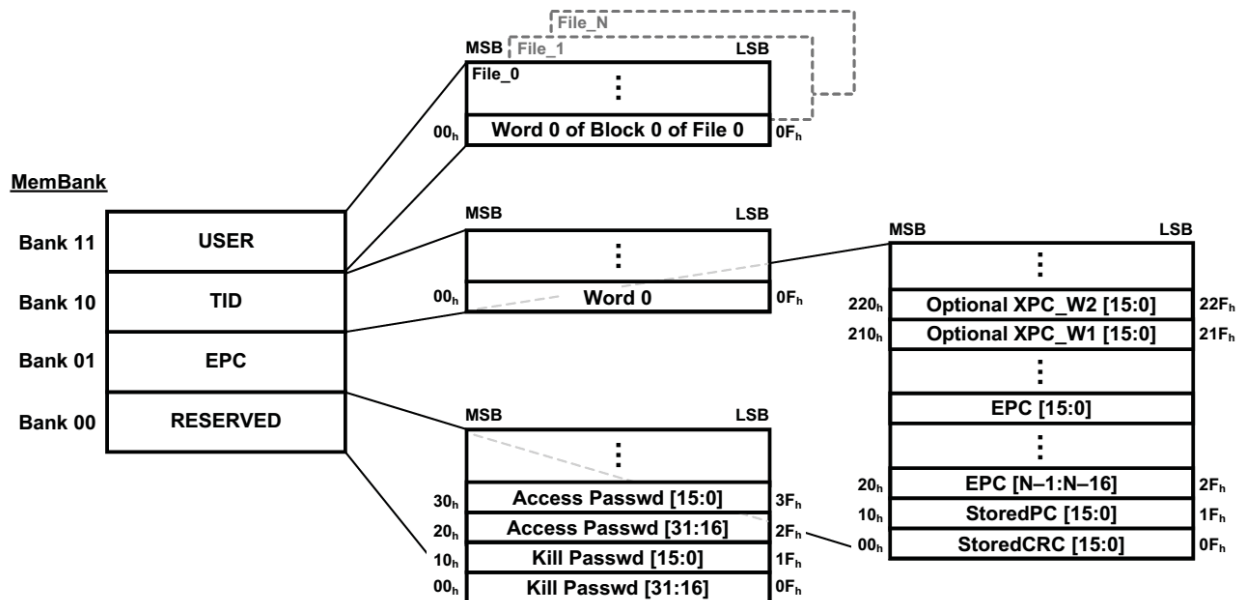


Figure 1

## 13.Tag Supported for TagFocus 및 FastID

The TagFocus™ and FastID™ functions are only available on the Monza Tag chip manufactured by Impinj.

### 13.1.Type of tags supported

Model	Monza 4			Monza 5	Monza 6			Monza X	
	4D	4E	4QT	5	R6	R6-P	S6-C	2K	4K
TagFocus™	√	√	√	√	√	√	√	√	√
FastID™	√	-	√	√	√	√	√	√	√

### 13.2.Monza model numbers

Family	Model	TID Memory
		Address 0x00 ~ 0x1F
Monza 4	4D	0xE2801100
	4E	0xE280110C
	4QT	0xE2801105
Monza 5	5	0xE2801130
Monza 6	R6	0xE2801160
	R6-P	0xE2801170
	S6-C	0xE2801171
Monza X	2K Dura	0xE2801140
	8K Dura	0xE2801150