



**REDJET RCP
2021-09-29**

**REDJET Reader Control Protocol
User Manual**

Contents

1	Revision History	3
2	Details of Command and Response	4
2.1	Get Antenna Loop	4
2.2	Set Antenna Loop.....	5
2.3	Set Password	6
2.4	Lock Tag.....	7
2.5	Smart detection	8
2.6	Write and Lock	9
2.7	Read	10
2.8	Write	11
3	Address Information	12

1 Revision History

Version	Date	Description
1.0.0	2021.09.29	Initial Release

2 Details of Command and Response

2.1 Get Antenna Loop

2.1.1 Command

Message Type: Command (0x00)

Code: RCP_CMD_GET_ANT_LOOP (0x1E)

Arguments

- None

Example)

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	End Mark	CRC-16
0xBB	0x00	0x1E	0x00	0x00	0x7E	0xNNNN

2.1.2 Response

Message Type: Response (0x01)

Code: RCP_CMD_GET_ANT_LOOP (0x1E)

Arguments

- AL (8-bit): Antenna Loop (Short loop: 0x00, Folded dipole: 0x01)

Example) AL = Folded dipole

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	AL	End Mark	CRC-16
0xBB	0x01	0x1E	0x00	0x01	0x01	0x7E	0xNNNN

2.2 Set Antenna Loop

2.2.1 Command

Message Type: Command (0x00)

Code: RCP_CMD_SET_ANT_LOOP (0x1F)

Arguments

- AL (8-bit): Antenna Loop (Short Loop: 0x00, Folded dipole: 0x01)

Example) AL = Short Loop

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	AM	End Mark	CRC-16
0xBB	0x00	0x1F	0x00	0x01	0x00	0x7E	0xNNNN

2.2.2 Response

Message Type: Response (0x01)

Code: RCP_CMD_SET_ANT_LOOP (0x1F)

Arguments

- Success (0x00)

Example) Success

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	Arg	End Mark	CRC-16
0xBB	0x01	0x1F	0x00	0x01	0x00	0x7E	0xNNNN

2.3 Set Password

2.3.1 Command

Message Type: Command (0x00)

Code: RCP_CMD_SET_PW (0x49)

Arguments

- CAP (32-bit): Current Access Password
- CKP (32-bit): Current Kill Password
- NAP (32-bit): New Access Password
- NKP (32-bit): New Kill Password

Example) CAP = 0x00000000, CKP = 0x00000000, NAP = 0x11223344, NKP = 0x00000000

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	CAP (MSB)		
0xBB	0x00	0x49	0x00	0x10	0x00	0x00	0x00
CAP (LSB)	CKP (MSB)			CKP (LSB)	NAP (MSB)		
0x00	0x00	0x00	0x00	0x00	0x11	0x22	0x33
NAP (LSB)	NKP (MSB)			NKP (LSB)	End Mark	CRC-16	
0x44	0x00	0x00	0x00	0x00	0x7E	0xNNNN	

2.3.2 Response

Message Type: Response (0x01)

Code: RCP_CMD_SET_PW (0x49)

Arguments

- Success (0x00)

Example) Success

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	Arg	End Mark	CRC-16
0xBB	0x01	0x49	0x00	0x01	0x00	0x7E	0xNNNN

2.4 Lock Tag

2.4.1 Command

Message Type: Command (0x00)

Code: RCP_CMD_LOCK_TAG (0x4A)

Arguments

- LD (24-bit): Lock mask and action flags. Pad 4-bit zeros (dummy) to the left of 20-bit lock mask and associated action flags

Example) Lock mask and action flags = 0x008020 {Binary: 0000 (dummy) + 0010100000 (mask) + 0010100000 (lock data)}

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	LD (MSB)		LD (LSB)
0xBB	0x00	0x4A	0x00	0x03	0x02	0x80	0xA0
End Mark	CRC-16						
0x7E	0xNNNN						

2.4.2 Response

Message Type: Response (0x01)

Code: RCP_CMD_LOCK_TAG (0x4A)

Arguments

- Success (0x00)

Example) Success

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	Arg	End Mark	CRC-16
0xBB	0x01	0x4A	0x00	0x01	0x00	0x7E	0xNNNN

2.5 Smart detection

2.5.1 Command

Message Type: Command (0x00)

Code: RCP_CMD_SMART_DETECTION (0x4B)

Arguments

- None

Example)

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	End Mark	CRC-16
0xBB	0x00	0x4B	0x00	0x00	0x7E	0xNNNN

2.5.2 Response

Message Type: Response (0x01)

Code: RCP_CMD_SMART_DETECTION (0x4B)

Arguments

- PWR (8-bit): Tx Power

- AL (8-bit): Antenna Loop (Short Loop: 0x00, Folded dipole: 0x01)

Example) PWR = 180 (18 dBm), AL = Folded dipole

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	PWR	AL	End Mark
0xBB	0x01	0x4B	0x00	0x02	0xB4	0x01	0x7E
CRC-16							
0xNNNN							

2.6 Write and Lock

2.6.1 Command

Message Type: Command (0x00)

Code: RCP_CMD_WRITE_LOCK (0x4C)

Arguments

- MB (8-bit): Target memory bank; 0x00 Reserved, 0x01 EPC, 0x02 TID, 0x03 User
- SA (16-bit): Start Address word pointer
- DL (16-bit): Data Length to write (Word Count)
- DT (variable): Data to write
- LD (24-bit): Lock mask and action flags. Pad 4-bit zeros (dummy) to the left of 20-bit lock mask and associated action flags

Example) Target memory bank = EPC, Start Address = 0x0002, Data Length = 6 word,
Data to write = 0xAC40C3FB490C03DF6C8A0007, Lock mask and action flags = 0x0280A0 {Binary: 0000 (dummy) + 0010100000 (mask) + 0010100000 (lock data)}

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	MB	SA (MSB)	SA (LSB)
0xBB	0x00	0x4C	0x00	0x14	0x01	0x00	0x02
DL (MSB)	DL (LSB)	DT (MSB)					
0x00	0x06	0xAC	0x40	0xC3	0xFB	0x49	0x0C
					DT (LSB)	LD (MSB)	
0x03	0xDF	0x6C	0x8A	0x00	0x07	0x02	0x80
LD (LSB)	End Mark	CRC-16					
0xA0	0x7E	0xNNNN					

2.6.2 Response

Message Type: Response (0x01)

Code: RCP_CMD_WRITE_LOCK (0x4C)

Arguments

- Success (0x00)

Example) Success

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	Arg	End Mark	CRC-16
0xBB	0x01	0x4C	0x00	0x01	0x00	0x7E	0xNNNN

2.7 Read

2.7.1 Command

Message Type: Command (0x00)

Code: RCP_CMD_READ_TAG (0x4E)

Arguments

- SA (16-bit): Start Address word pointer

- DL (16-bit): Data Length (Word Count)

Example) SA = 0x0002, DL = 0x0006

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	SA (MSB)	SA (LSB)	DL (MSB)
0xBB	0x00	0x4E	0x00	0x04	0x00	0x02	0x00
DL (MSB)	End Mark	CRC-16					
0x06	0x7E	0xNNNN					

2.7.2 Response

Message Type: Response (0x01)

Code: RCP_CMD_READ_TAG (0x4E)

Arguments

- EPC (variable)

Example) EPC = 0xAC40C3FB490C03DF6C8A0001

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	EPC (MSB)	EPC (MSB)	EPC (MSB)
0xBB	0x01	0x4E	0x00	0x0C	0xAC	0x40	0xC3
0xFB	0x49	0x0C	0x03	0xDF	0x6C	0x8A	0x00
EPC (LSB)	End Mark	CRC-16					
0x01	0x7E	0xNNNN					

2.8 Write

2.8.1 Command

Message Type: Command (0x00)

Code: RCP_CMD_WRITE_TAG (0x4F)

- MB (8-bit): Target memory bank; 0x00 Reserved, 0x01 EPC, 0x02 TID, 0x03 User

- SA (16-bit): Start Address word pointer

- DL (16-bit): Data Length to write (Word Count)

- DT (variable): Data to write

Example) Target memory bank = EPC, Start Address = 0x0002, Data Length = 6 word,

Data to write: 0xAC40C3FB490C03DF6C8A0002

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	MB	SA (MSB)	SA (LSB)
0xBB	0x00	0x4F	0x00	0x11	0x01	0x00	0x02
DL (MSB)	DL (LSB)	DT (MSB)					
0x00	0x06	0xAC	0x40	0xC3	0xFB	0x49	0x0C
					DT (LSB)	End Mark	CRC-16
0x03	0xDF	0x6C	0x8A	0x00	0x02	0x7E	0xNNNN

2.8.2 Response

Message Type: Response (0x01)

Code: RCP_CMD_WRITE_TAG (0x4F)

Arguments

- Success (0x00)

Example)

Preamble	Msg Type	Code	PL (MSB)	PL (LSB)	Arg	End Mark	CRC-16
0xBB	0x01	0x4F	0x00	0x01	0x00	0x7E	0xNNNN

3 Address Information

PHYCHIPS Inc.
#104, 187 Techno 2-ro, Yuseong-gu, Daejeon, Korea (Yongsan-dong, Migun Technoworld 2)
<http://www.phychips.com>
sales@phy chips.com
+82-42-864-2402
+82-42-864-2403

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