

K-NET01

UART Command User Manual

Application Note (Preliminary)

AN-KN01-03

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Version: 0.1
Released Date: 2008/10/9

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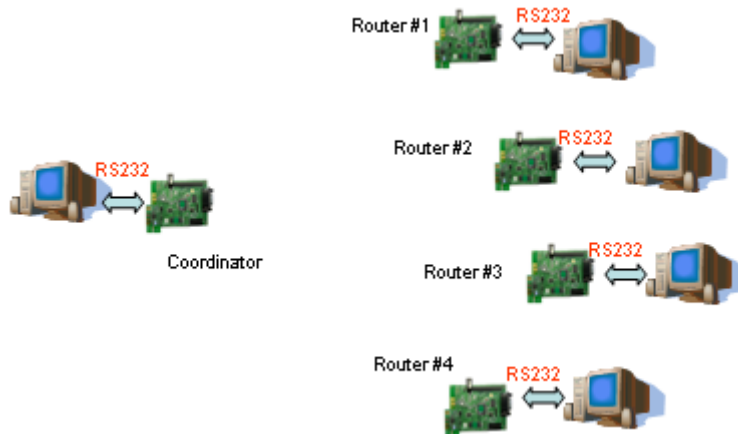
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K-NET01

UART Command User Manual

1. Overview

K-NET01 provides the AT-command set through UART port to control the Network-Bricks. It can be controlled from windows-based PC via RS232. The RS232 baud rate is 115200-N-8-1.



There are three formats for the commands: 'Set-Cmd', 'Set-Response', and 'Acq-Data'. The PC will send "To-CMD" to Network-Brick to tell it what to do. When the "To-CMD" is accepted, the Network-Brick will return an "ACQ-Ack" back to the PC.



When the Network-Brick receives a valid RF signal from the air or sends back the information in response to the "To-CMD", the Network-Brick will send the "ACQ-Data" to the PC. The PC will take care of these data and respond them in time.



2. UART Command Format

2.1 Acronyms and Abbreviations

- Cmd/CMD: Command
- Ack/ACK: Acknowledgement
- Hdr/HDR: Header
- Len/LEN: Header
- Acq/ACQ: Acquisition
- Dst/DST: Destination
- Nwk/NWK: Network
- Addr/ADDR: Address

3. UART Command List

3.1 Brief UART Command Description

Name	Format	Data Type	Description
AIR_DATA	Set	0x00	Send data to the air. The destination node is the router or the coordinator
	Acquire	0x13	Receive data from the Network-Brick (the coordinator or the router). The data are transmitted by other Network-Brick.
AIR_DATA_INDIRECT	Set	0x19	Send data to the air. The destination node is the device or the source node is the device
	Acquire	0x19	Receive data from the Network-Brick (the device). The data are transmitted by other Network-Brick.
GET_SYSTEM_CONFIG	Set	0xF6	Query the system configuration of the connected Network-Brick.
	Acquire	0xF6	Receive the system configuration of the connected Network-Brick.
SET_SYSTEM_CONFIG	Set	0xF7	Change the system configuration
	Acquire	N/A	N/A
READ_LED	Set	0x61	[Coordinator use only] Check Router's LED (output) status
	Acquire	0x61	[Coordinator use only] Receive Router's LED status
SET_LED	Set	0x61	[Coordinator use only] Set/Reset Router's LED (output)
	Acquire	0x61	[Coordinator use only] Receive Router's LED status
READ_P01	Set	0x62	[Coordinator use only] Inquire Router's P01 (input) logic value
	Acquire	0x62	[Coordinator use only] Receive Router's P01 (input) status
ADC_GET	Set	0x63	[Coordinator use only] Inquire Router's P21 ADC-8-bit value
	Acquire	0x63	[Coordinator use only] Receive Router's P21 ADC-8-bit value
REMOTE_SLEEP	Set	0x24	[Coordinator use only] Set Router to enter the sleep mode for the setting timer
	Acquire	NA	NA
INT_SLEEP	Set	0x23	Set connected node's sleep timer. The timer will work and enter the sleep mode after the node is triggered by P32 (low activated).
	Acquire	NA	NA

3.2 Command Description

3.2.1. AIR_DATA

3.2.1.1. AIR_DATA_Set

Description

Send data to the air. The destination node is the router or the coordinator.

Definition

Byte(s)	1	1	1	2	1	L
Name	CMD HDR	CMD LEN	Data_ Type	Dst_NWK_ Addr	Data_LEN	Data_Payload
Value	0xCC	L+4	0x00	0xYYZZ	L	(Variable, up to 102 bytes)

- CMD_HDR: Packet header, the value is 0xCC
- CMD_LEN: Packet length in byte, not include CMD_HDR and CMD_LEN
- Data_Type: Command value is 0x00
- Dst NWK Addr: (16 bits). Destination network address ID.
- Data_Len: Data length (bytes) (Note: Maximum data length is 102 bytes)
- Data_Payload: Data payload.

3.2.1.2. AIR_DATA_Acquire

Description

When the Network-Brick receives the packet from the air, it will extract the valued data and send this command through UART interface.

Definition

Byte(s)	1	1	1	2	1	L
Name	CMD HDR	CMD LEN	Data_ Type	Src_NWK_ Addr	Data_LEN	Data_Payload
Value	0xCC	L+4	0x13	0xYYZZ	L	(Variable, up to 102 bytes)

- CMD_HDR: Packet header, the value is 0xCC
- CMD_LEN: Packet length in byte, not include CMD_HDR and CMD_LEN
- Data_Type: Command value is 0x13
- Dst NWK Addr: (16 bits). Source network address ID.
- Data_Len: Data length (bytes) (Note: Maximum data length is 102 bytes)
- Data_Payload: Data payload.

3.2.1.3. Example

Example 1

Coordinator sends data to the router (network address = 0x0023). And the data are 0x12, 0x34, 0x56, 0x78, then the PC or MCU of the Coordinator should generate the command as shown below:

[0xCC][0x08][0x00][0x00][0x23][0x04][0x12] [0x34] [0x56] [0x78]

The router, after receiving the packet, would send the data via RS-232 to the PC or MCU of the Router as

shown below:

[0xCC][0x08][0x13][0x00][0x00][0x04][0x12][0x34][0x56][0x78]

Note: [0x00][0x00] is the Coordinator's address.

Functions	Address Value
Coordinator	0x0000
Router	0x0001 ~ 0xF000
Device	0xF001 ~ 0xFEFF

Example II

Coordinator *broadcasts* information to every joined node, and the data are 0x31, 0x32, 0x33, 0x34. The packet result would then be:

[0xCC][0x08][0x00][0xFF][0xFF][0x04][0x31][0x32][0x33][0x34]

Note: [0xFF] [0xFF] is defined as the address of the broadcast function

3.2.2. AIR_DATA_INDIRECT

3.2.2.1. Air_DATA_INDIRECT_Set

Description

Send data to the air. The destination node is the device or the source node is the device.

Definition

Byte(s)	1	1	1	2	2	1	L
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK_Addr	Parent_NWK_Addr	Data_LEN	Data_Payload
Value	0xCC	L+6	0x19	0xYYZZ	0xSSTT	L	(Variable, up to 98 bytes)

- CMD_HDR: Packet header, the value is 0xCC
- CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN
- Data_Type: Command value is 0x19
- Dst_NWK_Addr: Destination network address ID.
- Parent_NWK_Addr: Parent address of the destination node
- Data_Len: Data length (bytes) (Note: Maximum data length is 98 bytes)
- Data_Payload: Data payload.

3.2.2.2. Air_DATA_INDIRECT_Acquire

Description

Receive data from the Network-Brick (the device). The data are transmitted by other Network-Brick.

Definition

Byte(s)	1	1	1	2	2	1	L
Name	CMD HDR	CMD LEN	Data_Type	Dst_NW K_Addr	NULL	Data_LEN	Data_Payload
Value	0xCC	L+6	0x19	0xYYZZ	0xSSTT	L	(Variable, up to 98 bytes)

- ❑ CMD_HDR: Packet header, the value is 0xCC
- ❑ CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN
- ❑ Data_Type: Command value is 0x19
- ❑ Dst_NWK_Addr: Destination network address ID.
- ❑ NULL: 2 bytes.
- ❑ Data_Len: Data length (bytes) (Note: Maximum data length is 98 bytes)
- ❑ Data_Payload: Data payload.

3.2.2.3. Example

Coordinator sends data to the Device (network address = 0xF001). Before sending the data, the Coordinator should have identified the parent node of this device. In this case we assume it to be 0x0001, and the data are 0x12, 0x34, 0x56, 0x78, then the PC or MCU of the Coordinator should generate the command as shown below:

[0xCC][0x0A][0x19][0xF0][0x01][0x00][0x01][0x04][0x12][0x34][0x56][0x78]

The Device after receiving the packet would send the data to the PC or MCU of the Device as shown below:

[0xCC][0x0A][0x19][0x00][0x00][0xFF][0xFF][0x04][0x12] [0x34] [0x56] [0x78]

Note: [0x00][0x00] is the source address; [0xFF][0xFF] is the random values, and the data are 0x12, 0x34, 0x56, 0x78.

3.2.3. GET_SYSTEM_CONFIG

3.2.3.1. GET_SYSTEM_CONFIG_Set

Description

PC or MCU requests the system configuration of the connected Network-Brick.

Definition

Byte(s)	1	1	1
Name	CMD HDR	CMD LEN	Data_Type
Value	0xCC	0x01	0xF6

- ❑ CMD_HDR: Packet header, the value is 0xCC
- ❑ CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN
- ❑ Data_Type: Command value is 0xF6

3.2.3.2. GET_SYSTEM_CONFIG_Acquire

Description

PC or MCU receives the system configuration of the connected Network-Brick.

Definition

Byte(s)	1	1	1	1	1	1	1	1
Name	CMD HDR	CMD LEN	Data_Type	Max. Child	Max. Router	Max. Depth	Current Depth	Channel
Value	0xCC	0x26	0xF6	0xZZ	0xYY	0xZZ	0xYY	0xZZ

Byte(s)	2	8	2	2	16	1	1
Name	PAN_ID	MAC Address	NWK_ADDR	Parent_NWK	Security Key	Power Level	Tail/No Meaning
Value	0xHLL	0x12345678	0x1234	0x5678	0xHLL	0x12345678	0xDD

- CMD_HDR: Packet header, the value is 0xCC
- CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN. The value is 0x26
- Data_Type: Command value is 0xF6
- Max. Child: Network Topology
- Max. Router: Equal to Child
- Max. Depth: Network Topology
- Current Depth: The current depth of the connected Network-Brick
- Channel: RF channel of the network
- PAN_ID: Network ID
- MAC Address: MAC address for mass production
- NWK_ADDR: The address of the connected Network-Brick
- Parent_NWK_Address: The address of parent of the connected Network-Brick
- Security Key: Security Key
- Power Level: Tx power setting for the RF module
- Tail: Ending indication. The value is 0xDD.

3.2.3.3. Example

The users want to understand the system configuration of the designated node. The packet result:

[0xCC][0x01][0xF6]

The response result:

[0xCC][0x26][0xF6][0x04] (Maximum Child)
 [0x04] (Maximum Router)
 [0x04] (Maximum Depth)
 [0x00] (Current Depth)
 [0x15] (Channel)
 [0x12][0x34] (PANID_H) (PANID_L)
 [0x80][0x51][0xF1][0x24][0x03][0x02][0x01][0x00] (MAC_ADDR[7~0])

[0x00][0x00] (NWK_ADDR_H) (NWK_ADDR_L)
 [0xFF][0xFF] (PAR_NWK_ADDR_H) (PAR_NWK_ADDR_L)
 [0x11][0x22][0x33][0x44][0x55][0x66][0x77][0x88][0x99][0x00][0xAA][0xBB][
 0xCC][0xDD][0xEE][0xFF] (Security Key)
 [0x0A] (Power Level)
 [0xDD] (tail, no meaning)

3.2.4. SET_SYSTEM_CONFIG

3.2.4.1. SET_SYSTEM_CONFIG_Set

Description

Change the system configuration. Because the Network-Brick uses a flash memory, before writing new values to it, the whole memory should be erased first and all the values of items reset to 0xFF. The new values will then be subsequently written into the memory. Therefore, users should execute the following four steps to update the system configuration:

- (1) Write down all the values of the items into the buffer memory.
- (2) Enable “Flash-Change” mode. Without enabling this mode, the flash memory can not be erased and changed.
- (3) Erase the flash memory. All the values will be set to 0xFF.
- (4) Write down the values form the buffer memory to the flash memory.

Definition

There are four commands for setting the system configuration:

- (1) Erase Flash Memory

Byte(s)	1	1	1
Name	CMD HDR	CMD LEN	Data_Type
Value	0xCC	1	0x0A

- (2) Write Flash Memory from the buffer memory and exit Flash-Change mode

Byte(s)	1	1	1
Name	CMD HDR	CMD LEN	Data_Type
Value	0xCC	1	0x0B

- (3) Enable “Flash-Change” mode

Byte(s)	1	1	1	1	L
Name	CMD HDR	CMD LEN	Data_Type	Item	Value
Value	0xCC	3	0xF7	0x01	0xA5

- (4) Write the item values into the buffer memory

Byte(s)	1	1	1	1	L
Name	CMD HDR	CMD LEN	Data_Type	Item	Value
Value	0xCC	L+2	0xF7	0xNN	Variable (depend on Item)

- ❑ CMD_HDR: Packet header, the value is 0xCC
- ❑ CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN.
- ❑ Data_Type: Command value is 0xF7
- ❑ Item: Configuration Item. Refer to the table below
- ❑ Value(s): Variable

Item	ID	Value Length
Maximum Child	0x2	1
Maximum Router	0x3	1
Maximum Depth	0x4	1
Current Depth	0x5	1
Channel	0x6	1
PANID	0x7	2
MAC Address	0x8	8
NWK Address	0x9	2
Parent Address	0xA	2
Security Key	0xB	16
Power Level	0xC	1

3.2.4.2. Example

If the users want to update the new configuration, they should write down all the items as follows:

```
[0xCC][0x03][0xF7][0x02][0x04] (Maximum Child)
[0xCC] [0x03][0xF7][0x03] [0x04] (Maximum Router)
[0xCC] [0x03][0xF7][0x04] [0x04] (Maximum Depth)
[0xCC] [0x03][0xF7][0x05] [0x00] (Current Depth)
[0xCC] [0x03][0xF7][0x06] [0x15] (Channel)
[0xCC] [0x04][0xF7][0x07] [0x12][0x34] (PANID_H) (PANID_L)
[0xCC] [0x0A][0xF7][0x08][0x80][0x51][0xF1][0x24][0x03][0x02][0x01][0x00] (MAC_ADDR[7~0])
[0xCC] [0x04][0xF7][0x09] [0x00][0x00] (NWK_ADDR_H) (NWK_ADDR_L)
[0xCC] [0x04][0xF7][0x0A] [0xFF][0xFF] (PAR_NWK_ADDR_H) (PAR_NWK_ADDR_L)
[0xCC] [0x12][0xF7][0x0B] [0x11][0x22][0x33][0x44][0x55][0x66][0x77][0x88][0x99] [0x00][0xAA]
[0xBB][0xCC][0xDD][0xEE][0xFF] (Security Key)
[0xCC] [0x03][0xF7][0x06] [0x0A] (Power Level)
```

After setting (**BE SURE YOU HAVE DONE ALL OF THE ITEMS ABOVE**), the users need to re-start the system.

MUST FOLLOW BELOW THREE STEPS.

```
[0xCC][0x03][0xF7][0x01][0xA5] –Enter the Flash-change mode
[0xCC][0x01][0x1a]- Erase all the Flash
[0xCC][0x01][0x1b]- Write down the values into the Flash
```

3.2.5. READ_LED

3.2.5.1. READ_LED_Set

Description

Request the LED (P00 pin) status of the remote node.

Definition

Byte(s)	1	1	1	2	1	1	1
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK _Addr	Control Byte	Parameter I	Parameter II
Value	0xCC	0x06	0x61	0xYYZZ	0x00: Request	0x00	0x00

- CMD_HDR: Packet header, the value is 0xCC
- CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN
- Data_Type: Command value is 0x61
- Dst_NWK_Addr: Destination network address ID.
- Control_Byte: 0x00: Request
- Parameter I: 0x00
- Parameter II: 0x00

3.2.5.2. READ_LED_Acquire

Description

Get the LED (P00 pin) status of the remote node.

Definition

Byte(s)	1	1	1	2	1	1	1
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK _Addr	Control Byte	Parameter I	Parameter II
Value	0xCC	0x06	0x61	0xYYZZ	0x01: Response	Status	0x00

- CMD_HDR: Packet header, the value is 0xCC
- CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN
- Data_Type: Command value is 0x61
- Dst_NWK_Addr: Destination network address ID.
- Control_Byte: 0x00: Read Response
- Parameter I : Status: 0x01= on/high; 0x00 = off/low
- Parameter II: 0x00

3.2.5.3. Example

Coordinator wants to update to router's (network address = 0x0023) LED status. The packet result is as below:

[0xCC][0x06][0x61][0x00][0x23][0x00][0x00] [0x00]

The response from router is as below:

[0xCC][0x06][0x61][0x00][0x23][0x01][Status] [0x00]

If Status is 0x0, it means LED is OFF; 0x1, it means LED is ON.

3.2.6. SET_LED

3.2.6.1. SET_LED_Set

Description

Request the LED (P00 pin) status of the remote node.

Definition

Byte(s)	1	1	1	2	1	1	1
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK _Addr	Control Byte	Parameter I	Parameter II
Value	0xCC	0x06	0x61	0xYYZZ	0x02: Set	0x00 or 0x01	0x00

- CMD_HDR: Packet header, the value is 0xCC
- CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN
- Data_Type: Command value is 0x61
- Dst_NWK_Addr: Destination network address ID.
- Control_Byte: 0x02: Set
- Parameter I : Set data: 0x01= on/high; 0x00 = off/low
- Parameter II: 0x00

3.2.6.2. READ_LED_Acquire

Description

Get the LED (P00 pin) status of the remote node.

Definition

Byte(s)	1	1	1	2	1	1	1
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK _Addr	Control Byte	Parameter I	Parameter II
Value	0xCC	0x06	0x61	0xYYZZ	0x03: Response	Status	0x00

- CMD_HDR: Packet header, the value is 0xCC
- CMD_LEN: Packet length in byte, not include CMD_HDR and CMD_LEN
- Data_Type: Command value is 0x61
- Dst_NWK_Addr: Destination network address ID.
- Control_Byte: 0x03: Set Request
- Parameter I : Status: 0x01= on/high; 0x00 = off/low
- Parameter II: 0x00

3.2.6.3. Example

Coordinator wants to set router's (network address = 0x0023) LED ON. The packet result:

[0xCC][0x06][0x61][0x00][0x23][0x02][0x01] [0x00]

The response from router to make sure is

[0xCC][0x06][0x61][0x00][0x23][0x03][Status] [0x00]

If Status is 0x0, it means LED is OFF; 0x1, it means LED is ON.

3.2.7. READ_P01

3.2.7.1. READ_P01_Set

Description

Request the P01 pin status of remote node.

Definition

Byte(s)	1	1	1	2	1	1	1
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK _Addr	Control Byte	Parameter I	Parameter II
Value	0xCC	0x06	0x62	0xYYZZ	0x00: Request	0x00	0x00

- CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN
- Data_Type: Command value is 0x62
- Dst_NWK_Addr: Destination network address ID.
- Control_Byte: 0x00: Request
- Parameter I : 0x00
- Parameter II: 0x00

3.2.7.2. READ_LED_Acquire

Description

Get the P01 pin status of the remote node.

Definition

Byte(s)	1	1	1	2	1	1	1
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK _Addr	Control Byte	Parameter I	Parameter II
Value	0xCC	0x06	0x62	0xYYZZ	0x01: Response	Status	0x00

- CMD_HDR: Packet header, the value is 0xCC
- CMD_LEN: Packet length in byte, not include CMD_HDR and CMD_LEN
- Data_Type: Command value is 0x62
- Dst_NWK_Addr: Destination network address ID.
- Control_Byte: 0x01: Read Response
- Parameter I : Status: 0x01= high; 0x00 = low

❑ Parameter II: 0x00

3.2.7.3. Example

Coordinator wants to update router's (network address = 0x0023) IO status. The packet result:

[0xCC][0x06][0x62][0x00][0x23][0x00][0x00] [0x00]

The response from router is

[0xCC][0x06][0x62][0x00][0x23][0x01][Status] [0x00]

If Status is 0x0, it means IO is LOW; 0x1, it means IO is HIGH.

Note: The IO default value is HIGH.

3.2.8. ADC_GET

3.2.8.1. ADC_GET_Set

Description

Request the ADC values of P21 pin (ADC) of the remote node.

Definition

Byte(s)	1	1	1	2	1	1	1
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK _Addr	Control Byte	Parameter I	Parameter II
Value	0xCC	0x06	0x63	0xYYZZ	0x00: Request	0x00	0x00

- ❑ CMD_HDR : Packet header, the value is 0xCC
- ❑ CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN
- ❑ Data_Type: Command value is 0x63
- ❑ Dst_NWK_Addr: Destination network address ID.
- ❑ Control_Byte: 0x00: Request
- ❑ Parameter I : 0x00
- ❑ Parameter II: 0x00

3.2.8.2. ADC_GET_Acquire

Description

Get the ADC values of P21 pin (ADC) of the remote node.

Definition

Byte(s)	1	1	1	2	1	1	1
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK _Addr	Control Byte	Parameter I	Parameter II
Value	0xCC	0x06	0x62	0xYYZZ	0x01: Response	Status	0x00

- ❑ CMD_HDR: Packet header, the value is 0xCC
- ❑ CMD_LEN: Packet length in byte, not including CMD_HDR and CMD_LEN
- ❑ Data_Type: Command value is 0x62
- ❑ Dst_NWK_Addr: Destination network address ID.
- ❑ Control_Byte: 0x01: Read Response
- ❑ Parameter I : ADC value
- ❑ Parameter II: 0x00

3.2.8.3. Example

Coordinator wants to update router's (network address = 0x0023) ADC value. The packet result:

[0xCC][0x06][0x63][0x00][0x23][0x00][0x00] [0x00]

The response from router is

[0xCC][0x06][0x63][0x00][0x23][0x01][ADC] [0x00]

Note: ADC is an 8-bit value.

3.2.9. REMOTE_SLEEP

3.2.9.1. REMOTE_SLEEP_Set

Description

Request the remote node to enter sleep mode for the setting time. It will wake up automatically and perform normally after the time is up. When the node enters the sleep mode, P31' logic will be changed from 1 to 0. After wakeup, P31's value will be changed from 0 to 1.

Definition

Byte(s)	1	1	1	2	4
Name	CMD HDR	CMD LEN	Data_Type	Dst_NWK_Addr	Timer
Value	0xCC	0x07	0x24	0xYYZZ	0xRR SS TT UU

CMD_HDR	Packet header, the value is 0xCC
CMD_LEN	Packet length in byte, not include CMD_HDR and CMD_LEN
Data_Type	Command value is 0x24
Dst_NWK_Addr	Destination network address ID.
Sleep Timer (not exactly)	0x 00 00 03 E8 : 1 sec 0x 00 00 13 88 : 5 sec 0x 00 00 EA 60 : 1 min 0x 00 36 EE 80 : 60 min 0x 05 26 5C 00 : 24 hrs 0x 0A 4C B8 00 : 48 hrs

3.2.9.2. Example

Coordinator wants the router (network address = 0x0023) to enter the sleep mode for one minute.

The packet result:

[0xCC][0x07][0x24][0x00][0x23][0x00][0x00] [0xEA][0x60]

Coordinator wants every node in the network to enter the sleep mode for one minute.

The packet result:

[0xCC][0x07][0x24][0xFF][0xFF][0x00][0x00] [0xEA][0x60]

3.2.10. INT_SLEEP

3.2.10.1. INT_SLEEP_Set

Description

Set connected node's sleep timer. The timer will work and enter the sleep mode after the node is triggered by P32 (low activated). When the node enters the sleep mode, P31' logic will be changed from 1 to 0. After wakeup, P31's value will be changed from 0 to 1.

Definition

Byte(s)	1	1	1	4
Name	CMD HDR	CMD LEN	Data_Type	Timer
Value	0xCC	0x05	0x23	0xRR SS TT UU

CMD_HDR	Packet header, the value is 0xCC
CMD_LEN	Packet length in byte, not include CMD_HDR and CMD_LEN
Data_Type	Command value is 0x23
Sleep Timer (not exactly)	0x 00 00 03 E8 : 1 sec 0x 00 00 13 88 : 5 sec 0x 00 00 EA 60 : 1 min 0x 00 36 EE 80 : 60 min 0x 05 26 5C 00 : 24 hrs 0x 0A 4C B8 00 : 48 hrs

3.2.10.2. Example

If the application needs the node (Network Address = 0x 0023) to sleep for one minute or more, the MCU should send packet result:

[0xCC][0x05][0x23][0x00][0x00] [0xEA][0x60]

After setting, the application should pull P32 to low to trigger the sleep mode. In the mean time, P31 will change the status from high to low. When the time is up, the system will wake up and P31 will return to high level.

Revision History

Revision	Date	Description of Change
0.0	2008/9/1	Original
0.1	20085/10/9	Add Remote_Sleep and INT_Sleep commands.

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