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Revision Map

- This document is mapping to AT_Cmd module revision 5808

Address

+DADDR

- +DADDR?
  get the default address for +CRCON, +ENSCAN

- +DADDR = `<addr>`
  - `<addr>` : the default address
- +DADDR = `<num>`,`<addr>`
  set the default address for +CRCON, +ENSCAN
  - `<num>` : the type of default address
  - `<addr>` : the default address
    - format : XX:XX:XX:XX:XX:XX
    - ex. 01:02:03:04:05:FF, addr[0] = 0xFF, addr[5] = 0x01
  - notice
    If BLE Address Type is set to ramdom address, addr[5] >= 0xC0 (the two most significant bits of the address shall be equal to 1).

+DEVADDR

- +DEVADDR?
  get the address of device
- +DEVADDR = `<addr>`
  set the address of device
  - `<addr>` : the address of device
    - format : XX:XX:XX:XX:XX:XX
      - ex.01:02:03:04:05:FF, addr[0] = 0xFF, addr[5] = 0x01
  - notice
    If BLE Address Type is set to ramdom address,
    addr[5] >= 0xC0(the two most significant bits
    of the address shall be equal to 1).

+DEVADDRTYPE

- +DEVADDRTYPE?
  get the address type of device
- +DEVADDRTYPE = `<num>`
  set the address type of device
  - `<num>` : the address type of device
    0: public address
    1: ramdom address
  - notice
    If BLE Address Type is set to ramdom address,
    addr[5] >= 0xC0(the two most significant bits
    of the address shall be equal to 1).

Advertising

+ADVCHMAP

- +ADVCHMAP?
  get the advertising channel

- +ADVCHMAP = `<num>`
  set the advertising channel
  - `<num>` : the advertising channel
    range : 0-7
    bit1: channel 37
    bit2: channel 38
    bit3: channel 39

+ADVDATA

- +ADVDATA?
  get the advertising data
- +ADVDATA = `<string>`
  set the advertising data
  - `<string>` : the advertising data
    - format : XX:XX:XX:XX:XX:XX
    - notice
      XX : hex
      It should follow adv_data format
      The first XX means the length of value,
      first XX : 00-1F
    - ex. 07:02:01:05:03:FF:12:34
      It has 7 length of value
      It has two AD structures
      the first AD structure has 2 length
      type_flages(01) which value is 05
      the second AD structure has 3 length
      manufacturer_specific(FF) which value is 3412

+ADVFP

- +ADVFP?
  get the advertising filter policy
- +ADVFP = `<num>`
  set the advertising filter policy
  - `<num>` : the advertising filter policy
  - notice:
    not support now

+ADVINT

- +ADVINT?
  get the advertising interval
- +ADVINT = `<num1>`, `<num2>`
  set the advertising interval
  - `<num1>` : the minimum advertising interval
    range : 32-16384
    interval = `<num>` * 0.625ms

    - `<num2>` : the maximum advertising interval
      range : 32-16384
      interval = `<num>` * 0.625ms
    - notice
        - `<num1>` must smaller `<num2>`

+ADVTYPE

- +ADVTYPE?
  get advertising type
- +ADVTYPE = `<num>`
  set advertising type
    - `<num>` : the advertising type
      0: Connectable and scannable undirected advertising
      1: Connectable directed advertising
      2: Scanable undirected advertising
      3: Non-Connectable undirected advertising
- +ADVTYPE = 1,`<num>`,`<addr>`
  when set advertising type to 1(direct address mode), it has to provide an address as a target
    - `<num>` : the address type of device
      0: public address
      1: ramdom address
    - `<addr>` : the address of device
        - format : XX:XX:XX:XX:XX:XX
            - ex.01:02:03:04:05:FF, addr[0] = 0xFF, addr[5] = 0x01

+DISADV

- +DISADV
  disable advertising

+ENADV

- +ENADV = `<num>`
  enable advertising of specific host ID
    - `<num>` : host ID
      range : 0-0

+SCANRSP

- +SCANRSP?
  get the scan response data
- +SCANRSP = `<string>`
  set the scan response data
    - `<string>` : the scan response data
        - format : XX:XX:XX:XX:XX:XX
        - notice
          XX : hex

It should follow adv_data format
The first XX means the length of value, first XX : 00-1F

- ex. 09:08:09:61:62:63:64:65:66:67
  It has 9 length of value
  It has one AD structures
  the first AD structure has 8 length
  local_name_complete(09) which value is 61:62:63:64:65:66:67 = "abcdefg"

Connect

+CONINT

- +CONINT?
  get the connection interval of host ID 0
- +CONINT = `<num1>`, `<num2>`, `<num3>`
  set the connection interval of specific host ID
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the minimum connection interval
    range : 6-3200
    interval = `<num2>` * 1.25ms
  - `<num3>` : the maximum connection interval
    range : 6-3200
    interval = `<num3>` * 1.25ms
  - notice
    - `<num2>` must smaller `<num3>`
      must match this formula : timeout * 4 > interval_max * (1+latency)

+CONLAT

- +CONLAT?
  get the connection latency
- +CONLAT = `<num1>`, `<num2>`
  set the connection latency
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the connection latency
    range : 0-499
    interval = `<num2>` * 1.25ms
  - notice
    must match this formula : timeout * 4 > interval_max * (1+latency)

+CONPARAM

- +CONPARAM = `<num1>`, `<num2>`, `<num3>`, `<num4>`, `<num5>`
  set the connection interval of specific host ID

    - `<num1>` : host ID
      range : 0-0
    - `<num2>` : the minimum connection interval
      range : 6-3200
      interval = `<num2>` * 1.25ms
    - `<num3>` : the maximum connection interval
      range : 6-3200
      interval = `<num3>` * 1.25ms
    - `<num4>` : the connection latency
      range : 0-499
      interval = `<num4>` * 1.25ms
    - `<num5>` : the connection supervision timeout
      range : 10-3200
      supervision timeout = `<num5>` * 10ms
    - notice
        - `<num2>` must smaller `<num3>`
          must match this formula : timeout * 4 > interval_max * (1+latency)

+CONSUPTMO

- +CONSUPTMO?
  get the connection supervision timeout of host ID 0
- +CONSUPTMO = `<num1>`, `<num2>`
  set the connection supervision timeout of specific host ID
    - `<num1>` : host ID
      range : 0-0
    - `<num2>` : the connection supervision timeout
      range : 10-3200
      supervision timeout = `<num2>` * 10ms
    - notice
      must match this formula : timeout * 4 > interval_max * (1+latency)

+DISCON

- +DISCON = `<num>`
  disable connection of specific host ID
    - `<num>` : host ID
      range : 0-0

+READCONINT

- +READCONINT = `<num>`
  read the connection interval of specific host ID
    - `<num>` : host ID
      range : 0-0

+READCONLAT

- +READCONLAT = `<num>`
  read the connection latency of specific host ID
  - `<num>` : host ID
    range : 0-0

+READCONSUPTMO

- +READCONSUPTMO = `<num>`
  read the connection supervision timeout of specific host ID
  - `<num>` : host ID
    range : 0-0

Connect_Other

+SBOND

- +SBOND
  set BLE Bonding Flag
- +SBOND = `<num>`
  - `<num>`: flag

+PLDATALEN

- +PKGDATALEN = `<num1>,<num2>`
  set the tx max payload octets of specific host ID
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the tx max payload octets
    range : 27-251

+IBOND

- +IBOND
  initial BLE Bonding information

+PHY

- +PHY?
  read PHY rate of host ID 0
- +PHY = `<num1>,<num2>,<num3>,<num3>`
  set PHY rate of specific host ID
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : TX PHY
    1:BLE_PHY_1M
    2:BLE_PHY_2M
    4:BLE_PHY_CODED

    - `<num3>` : RX PHY
      1:BLE_PHY_1M
      2:BLE_PHY_2M
      4:BLE_PHY_CODED
    - `<num4>` : phy option when TX/RX choose BLE_PHY_CODED(4)
    - notice
      TX PHY must equal to RX PHY

+PREPLDATALEN

- +PREPLDATALEN?
  get the preferred tx payload octets
- +PREPLDATALEN = `<num1>`
  set the preferred tx max payload octets
    - `<num1>` : the tx max payload octets
      range : 27-251

+PFMTUS

- +PFMTUS = `<num1>`, `<num2>`
  set preferred MTU size of specific host ID
    - `<num1>`: host ID
      range : 0-0
    - `<num2>`: preferred rx mtu size
      range : 23-247

+RMTUS

- +RMTUS = `<num>`
  read MTU size of specific host ID
    - `<num>` : host ID
      range : 0-0

+READPHY

- +READPHY = `<num>`
  read PHY rate of specific host ID
    - `<num>` : host ID
      range : 0-0

+RSCCCD

- +RSCCCD = `<num>`
  restore last bond CCCD
    - `<num>` : host ID
      range : 0-0
    - notice: this cmd is only valid in following situation
      A connection bond with bond_flag=1(bonding)

Doing some CCCD operate
Discon and reconnect the connection
Do the +RSCCCD command which can retrieve CCCD state before disconnection

+READRSSI

- +READRSSI = `<num>`
  read RSSI value of specific host ID

+SEC

- +SEC
  request security to specific host ID
- +SEC = `<num>`
  - `<num>`: host ID

Other

+ALLPARAM

- +ALLPARAM?
  read the all param

+RFRST

- +RFRST
  reset RF IC

+ROLE

- +ROLE?
  read the role(master/slave)

+STSTART

- +STSTART
  stress test start

Scanning

+DISSCAN

- +DISSCAN
  disable scan

+ENSCAN

- +ENSCAN = `<addr>`

any scan response, then print

  - `<addr>` : the address of device which be scanned
    - format : XX:XX:XX:XX:XX:XX

+PARSADV

- +PARSADV = `<num>`
  get adv data by BLE_GAP_AD_TYPE
  - `<num>` = BLE_GAP_AD_TYPE

+PARSSCAN

- +PARSSCAN?
  get scan response data by BLE_GAP_AD_TYPE
- +PARSSCAN = `<num>`
  - `<num>` = BLE_GAP_AD_TYPE

+SCANFP

- +SCANFP?
  get the scan filter policy
- +SCANFP = `<num>`
  set the scan filter policy
  - `<num>` : the filter policy
    0 : accept all
    1 : accept white list

+SCANINT

- +SCANINT?
  get the scan interval
- +SCANINT = `<num>`
  set the scan interval
  - `<num>` : the scan interval
    range : 4-16384
    interval = `<num>` * 0.625ms

+SCANTYPE

- +SCANTYPE?
  get scan type
- +SCANTYPE = `<num>`
  set scan type
  - `<num>` : the scan type
    0: passive
    1: active

+SCANWIN

- +SCANWIN?
  get the scan window
- +SCANWIN = `<num>`
  set scan window
  - `<num>` : the scan window
    range : 4-16384
    window = `<num>` * 0.625ms

Master

+CHECKERRORRSP

- +CHECKERRORRSP = `<num>`
  check error response for specific host ID
  - `<num>` : host ID
    range : 0-0

+EXMTUS

- +EXMTUS = `<num1>`, `<num2>`
  - exchange MTU size of specific host ID with server
    - `<num1>` : host ID
      range : 0-0
    - `<num2>` : Client rx mtu size
      range : 23-247

+READ

- +READ = `<num>`
  read the specified characteristic value for specific host ID
  - `<num>` : host ID
    range : 0-0

+READCCCD

- +READCCCD = `<num>`
  read CCCD value for specific host ID
  - `<num>` : host ID
    range : 0-0
  - notice :
    0:disable notify & disable indicate
    1:enable notify & disable indicate
    2:disable notify & enable indicate
    3:enable notify & enable indicate

+READDEVAP

- +READDEVAP = `<num>`
  read GAP appearance for specific host ID
  - `<num>` : host ID
    range : 0-0

+READDEVNAME

- +READDEVNAME = `<num>`
  read GAP device name for specific host ID
  - `<num>` : host ID
    range : 0-0

+READPCONPAR

- +READDEVAP = `<num>`
  read GAP appearance for specific host ID
  - `<num>` : host ID
    range : 0-0

+WRITE

- +WRITE = `<num1>`, `<num2>`
  send write value for specific host ID
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the num of write length
    range : 0-244
    - notice: the write value will be set by the num of write length.
      The write value = 00234567890123456789022345678903234567890423456789052345678906234567890723456789082345678909234567891023456789112345678912234567891323456789142345678915234567891623456789172345678918234567891923456789202345678921234567892223456789232345678924 23
      - ex. `<num2>` = 8
        the write value = 00234567
  - notice: the num of write value length should lower than (mtu size - 3)

+WRITEAUTHE

- +WRITEAUTHE = `<num1>`, `<num2>`
  send write value for specific host ID with authentication
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the num of write length
    range : 0-244
    - notice: the write value will be set by the num of write length.
      The write value = 00234567890123456789022345678903234567890423456789052345678906234567890723

456789082345678909234567891023456789112345678912234567891323456789142345678915234567891623456789172345678918234567891923456789202345678921234567892223456789232345678924238

- ex. `<num2>` = 8
  the write value = 00234567

- notice: the num of write value length should lower than (mtu size - 3)

+WRITEAUTHO

- +WRITEAUTHO = `<num1>`, `<num2>`
  send write value for specific host ID with authorisation
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the num of write length
    range : 0-244
    - notice: the write value will be set by the num of write length.
      The write value = 00234567890123456789022345678903234567890423456789052345678906234567890723456789082345678909234567891023456789112345678912234567891323456789142345678915234567891623456789172345678918234567891923456789202345678921234567892223456789232345678924238
      - ex. `<num2>` = 8
        the write value = 00234567
  - notice: the num of write value length should lower than (mtu size - 3)

+WRITEENC

- +WRITEENC = `<num1>`, `<num2>`
  send write value for specific host ID with encryption
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the num of write length
    range : 0-244
    - notice: the write value will be set by the num of write length.
      The write value = 00234567890123456789022345678903234567890423456789052345678906234567890723456789082345678909234567891023456789112345678912234567891323456789142345678915234567891623456789172345678918234567891923456789202345678921234567892223456789232345678924238
      - ex. `<num2>` = 8
        the write value = 00234567
  - notice: the num of write value length should lower than (mtu size - 3)

+WRITENRSP

- +WRITENRSP = `<num1>`, `<num2>`
  send write value for specific host ID, which will not get response

- `<num1>` : host ID
  range : 0-0
- `<num2>` : the num of write length
  range : 0-244
  - notice: the write value will be set by the num of write length.
    The write value = 00234567890123456789022345678903234567890423456789052345678906234567890723456789082345678909234567891023456789112345678912234567891323456789142345678915234567891623456789172345678918234567891923456789202345678921234567892223456789232345678924 23
    - ex. `<num2>` = 8
      the write value = 00234567
- notice: the num of write value length should lower than (mtu size - 3)

create_connect

+CCCON

- +CCCON
  cancel create connection

+CRCON

- +CRCON
  create connection with default value
- +CRCON = `<num1>`,`<num2>`,`<addr>`
  create connection of specific host ID
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : address type
  - `<addr>` : the address of device
    - format : XX:XX:XX:XX:XX:XX
  - ex.AT+CRCON=0,1,11:12:13:BB:BB:C4, host id 0, random address 11:12:13:BB:BB:C4

+CCONINT

- +CCONINT?
  get the create connection interval
- +CCONINT = `<num1>`, `<num2>`
  set the create connection interval
  - `<num1>` : the minimum create connection interval
    range : 6-3200
    interval = `<num>` * 1.25ms
  - `<num2>` : the maximum create connection interval
    range : 6-3200
    interval = `<num>` * 1.25ms
  - notice

        - `<num1>` must smaller `<num2>`
          must match this formula : timeout * 4 > interval_max * (1+latency)

+CCONLAT

- +CCONLAT?
  get the create connection latency
- +CCONLAT = `<num>`
  set the create connection latency
    - `<num>` : the create connection latency
      range : 0-499
      interval = `<num>` * 1.25ms
    - notice
      must match this formula : timeout * 4 > interval_max * (1+latency)

+CCONSUPTMO

- +CCONSUPTMO?
  get the create connection supervision timeout
- +CCONSUPTMO = `<num>`
  set the create connection supervision timeout
    - `<num>` : the create connection supervision timeout
      range : 10-3200
      supervision timeout = `<num>` * 10ms
    - notice
      must match this formula : timeout * 4 > interval_max * (1+latency)

Slave

+DEVAP

- +DEVAP = `<num>`
  set GAP appearance
    - `<num>` : appearance

+DEVNAME

- +DEVNAME = `<string>`
  set GAP device name
    - `<string>` : the GAP device name data

+PCONPAR

- +PCONPAR = `<num1>`, `<num2>`, `<num3>`, `<num4>`
  set GAP perfer connection parameter

    - `<num1>` : connIntervalMin

- `<num2>` : connIntervalMax
- `<num3>` : connLatency
- `<num4>` : connSupervisionTimeout

+IND

- +IND = `<num1>`, `<num2>`
  send indication for specific host ID
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the num of indication length
    range : 0-244
    - notice: the indication value will be set by the num of indication length.
      The indication value = 00234567890123456789022345678903234567890423456789052345678906234567890723456789082345678909234567891023456789112345678912234567891323456789142345678915234567891623456789172345678918234567891923456789202345678921234567892223456789232345678924 23
      - ex. `<num2>` = 8
        the indication value = 00234567
  - notice: the num of indication value length should lower than (mtu size - 3)

+NFY

- +NFY = `<num1>`, `<num2>`
  send notification for specific host ID
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the num of notification length
    range : 0-244
    - notice: the notification value will be set by the num of notification length.
      The notification value = 00234567890123456789022345678903234567890423456789052345678906234567890723456789082345678909234567891023456789112345678912234567891323456789142345678915234567891623456789172345678918234567891923456789202345678921234567892223456789232345678924 23
      - ex. `<num2>` = 8
        the notification value = 00234567
  - notice: the num of notification value length should lower than (mtu size - 3)

+SETERRORCODE

- +SETERRORCODE = `<num1>`, `<num2>`
  set error code for specific host ID
  - `<num1>` : host ID
    range : 0-0

- `<num2>` : the error code
  range : 0-255

+SETREADVAL

- +SETREADVAL = `<num1>`, `<num2>`
  set read value for specific host ID
  - `<num1>` : host ID
    range : 0-0
  - `<num2>` : the num of read value length
    range : 0-244
    - notice: the read value will be set by the num of read value length.
      The read value = 00234567890123456789022345678903234567890423456789052345678906234567890723456789082345678909234567891023456789112345678912234567891323456789142345678915234567891623456789172345678918234567891923456789202345678921234567892223456789232345678924 23
      - ex. `<num2>` = 8
        the read value = 00234567
  - notice: the num of read value length should lower than (mtu size - 3)