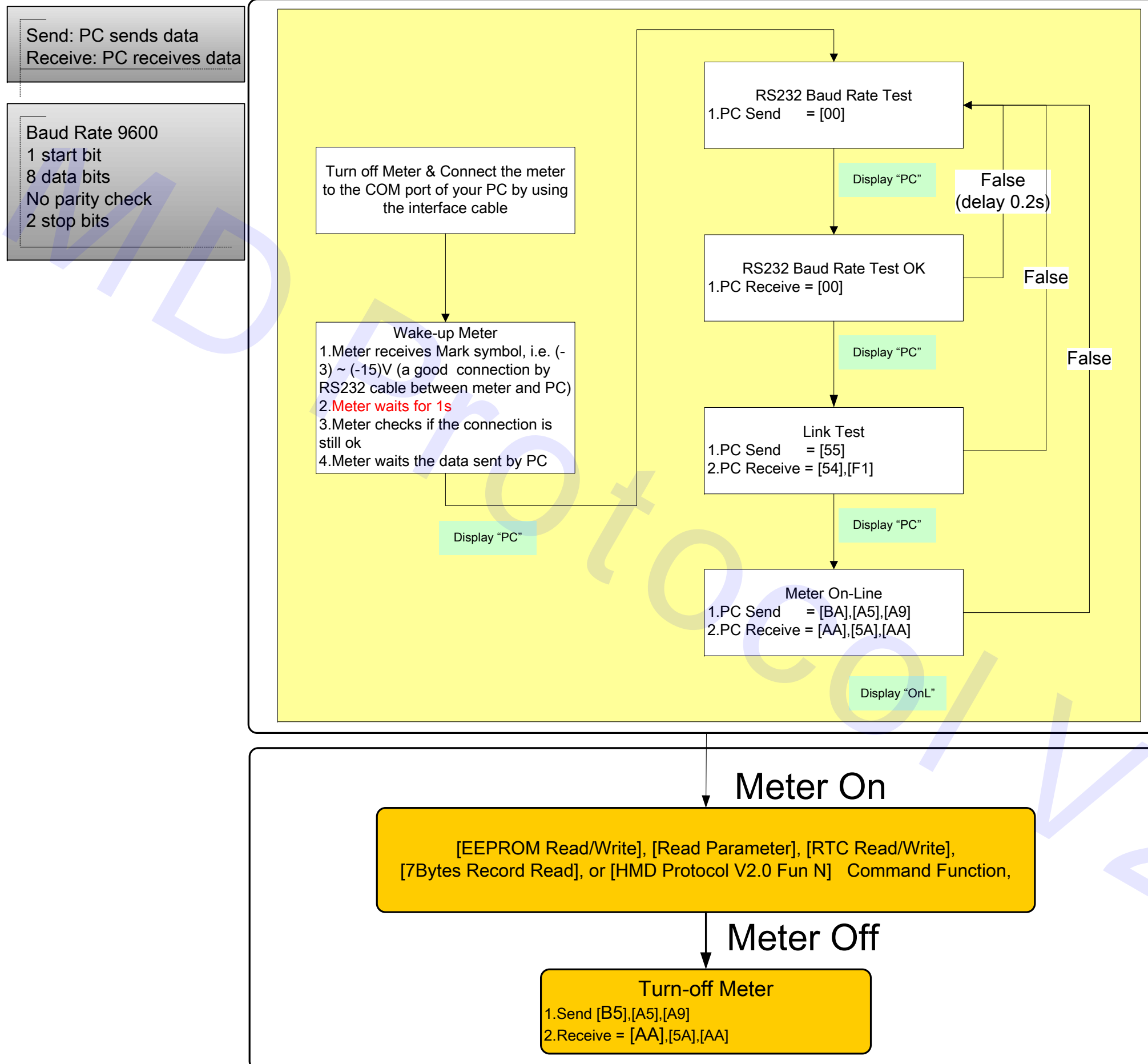
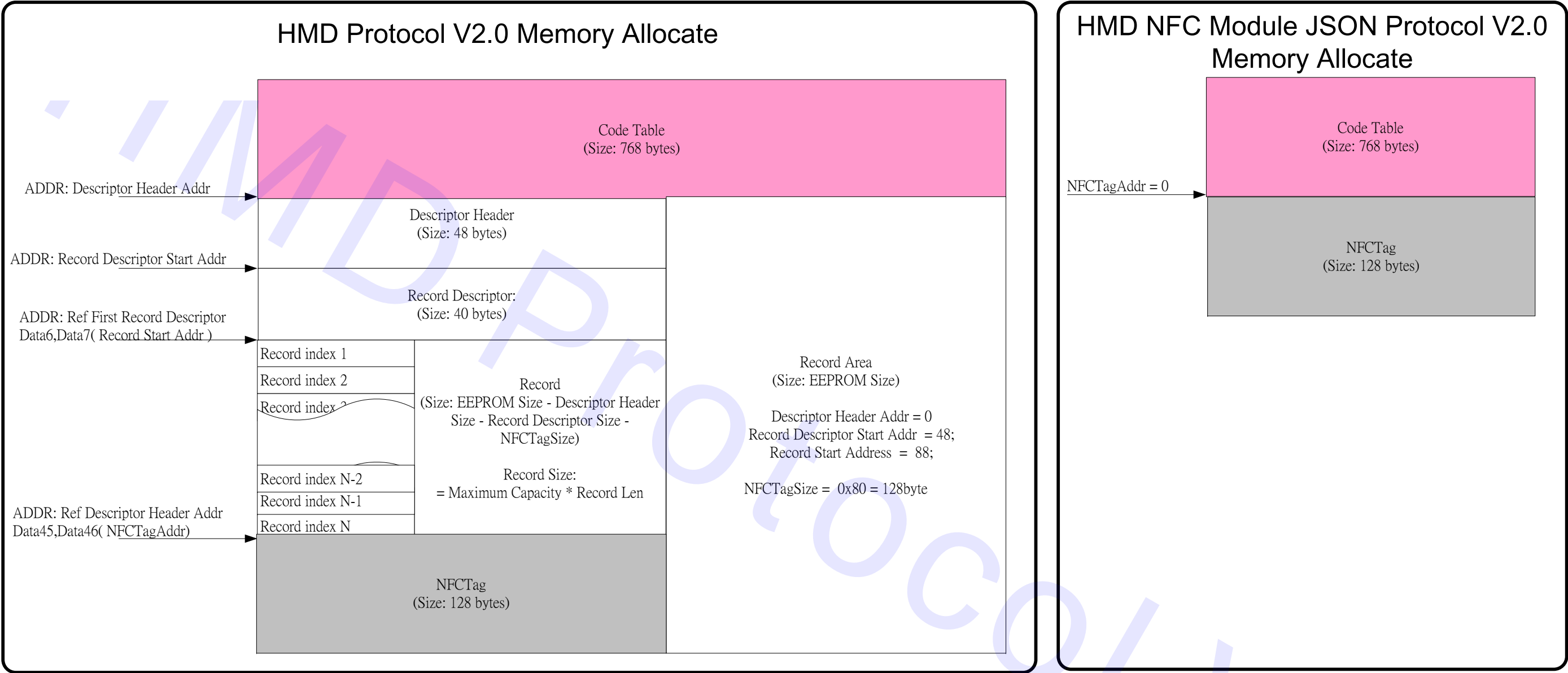


# HMD Protocol V2.0目錄

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# Initialization





Note1:

- (1) HMD Protocol V2.0 Memory Allocate: NFC EEPROM 24LRxx: Descriptor Header Addr = 0x0000.
- (2) HMD NFC Module JSON Protocol Memory Allocate: NFC EEPROM 24LRxx: NFCTagAddr = 0.
- (3) HMD Protocol V2.0 Memory Allocate: EEPROM 24Cxx: Descriptor Header Addr = 0x0300.
- (4) HMD Protocol V2.0 Memory Allocate: EEPROM 24Cxx: Descriptor Header Addr = 0x600.
- (5) unknown Protocol.

Note2:

How to Determine HMD Protocol or HMD NFC Module JSON Protocol Memory Allocate?

```
If((EEPROM ADDR[0] == 0x01) &&(EEPROM ADDR[3] == 0x14))
    Descriptor Header Addr = 0; /* (1) HMD Protocol V2.0 Memory Allocate: NFC EEPROM 24LRxx: Descriptor Header Addr = 0x0000. */
else If((NFC EEPROM ADDR[0] == '{' ))
    NFCTagAddr = 0; /* (2) HMD NFC Module JSON Protocol Memory Allocate: NFC EEPROM 24LRxx: NFCTagAddr = 0. */
else If((EEPROM ADDR[0x300] == 0x01) &&(EEPROM ADDR[0x300+3] == 0x14))
    Descriptor Header Addr = 768; /* (3) HMD Protocol V2.0 Memory Allocate: EEPROM 24Cxx: Descriptor Header Addr = 0x0300. */
else If((EEPROM ADDR[0x600] == 0x01) &&(EEPROM ADDR[0x600+3] == 0x14))
    Descriptor Header Addr = 1536; /* (4) HMD Protocol V2.0 Memory Allocate: EEPROM 24Cxx: Descriptor Header Addr = 0x0600. */
else
    Error ; /* (5) unknown Protocol */
```

CMD: [A8H]  
HMD Protocol Command

FUN: [01H]  
Read Descriptor Header

FUN 01 : Read Descriptor Header  
1.Send [A8],[01],[ChkSum]  
2.Receive = [A8],[01],[Data1]....[Data48],[ChkSum High byte],[ChkSum Low byte]

Data1		Data2		Data3		Data4		Data5		Data6		Data7		Data8		Data9~Data16	
7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0	
7,6,5,4,3,2,1,0		7,6,5,4,3,2,1,0		7,6,5,4,3,2,1,0		7,6,5,4,3,2,1,0		7,6,5,4,3,2,1,0		7,6,5,4,3,2,1,0		7,6,5,4,3,2,1,0		7,6,5,4,3,2,1,0		7,6,5,4,3,2,1,0	
Number of Descriptor		Event Type		ProductYear		DescriptorVerNo		ModelNo				FwNo				MID2	

Data17		Data18~Data26		Data27		Data28		Data29		Data30		Data31		Data32		Data33		Data34							
7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0							
7,6,5,4,3,2,1,0 Descriptor Type List		7,6,5,4,3,2,1,0 Reserved		7,6,5,4,3,2,1 Year		0, 7,6,5 Month		4,3,2,1,0 Day		7,6,5,4,3 Hour		2,1,0, 7,6,5 Minute		4,3 Se con d Voltage		3,2,1,0, 7,6 Tempera ture		5,4,3,2 Code		1,0, 7 Even tBG		6 M as kR ec Pid		5,4,3,2 Glucose Value	

Data35		Data36		Data37		Data38		Data39		Data40~Data44		Data45		Data46		Data47~Data48					
7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0					
7,6,5,4,3,2,1 New Year		0, 7,6,5 New Month		4,3,2,1,0 New Day		7,6,5,4,3 New Hour		2,1,0, 7,6,5 New Minute		4,3,2,1,0, 7 New Second		6, Me ter RD T 5,4 Hos tRD T 3,2,1,0 New Date Time		7,6,5,4,3,2,1,0 MID1		6,5,4,3,2,1,0 NFCTagAddr_H		7,6,5,4,3,2,1,0 NFCTagAddr_L		7,6,5,4,3,2,1,0 Reserved	

Data1(7:0):  
Number of Descriptor  
1: There are 1 Record Descriptor  
other: Prohibited  
Number of Descriptor ADDR: ( Descriptor Header Addr )

Data2(7:0):  
Event Type:  
Range: 0: Event means AC/PC/QCL/QCH  
1~255: Event means C/V/A/N

Data3(7:0):(ADDR:  
ProductYear:  
Range: 0~255.  
ProductYear same as, ADDR[113] PRODUCT\_YEAR  
Formula:  
Product Year= 2000+ProductYear  
Example:  
Product Year= 2000+12=2012

Data4(7:0):  
Descriptor Version No:  
Range: 0~255.  
Formula:  
Descriptor Version. No=DescriptorVerNo/10  
Example:  
DescriptorVerNo= 20  
Descriptor Version. No=20/10 = V2.0

Data5(7:0), Data6 (7:0)  
Model No:  
Range: 0~65535.  
Formula:  
Model No=ModelNo.  
Example:  
ModeNo= 471  
Mode No= 471

Data7(7:0), Data8 (7:0):  
Firmware Version:  
Range: 0~65535.  
FwNo\_L same as ADDR[153] FW\_NO.  
Formula:  
Firmware Version No=FwNo/10  
Example:  
FwNo= 20  
Firmware Version No=20/10 = V2.0

Data9(7:0) ~ Data16 (7:0):  
MID2:  
Data9: same as ADDR[241]: MID2 CHECK BYTE  
Data10 ~ Data13: same as ADDR[242]~[245]: MID2 4 byte ascii code.  
Data14 ~ Data16: same as ADDR[246]~[248]: MID2 之 7碼十進位數值 (0000000~9999999) 。以2進位值儲存。  
Formula:  
MID2 之 7碼之十進位數值 = Data14<<16 + Data15<<8 + Data16  
Example:  
Data14= 0x00, Data15= 0x00, Data16= 0x01,  
MID2 之 7碼之十進位數值 = Data14<<16 + Data15<<8 + Data16 = 0x000001

Data17(7:0):  
Descriptor Type List  
01H: BG (血糖) Descriptor Type is 01H, (特定時間非連續量測(t,s))  
02H: BP (血壓) Descriptor Type is 02H, (特定時間非連續量測(t,s))  
03H: PD (步數) Descriptor Type is 03H, (間隔時間連續量測(?t, c))  
04H: BT (體溫) Descriptor Type is 04H, (特定時間非連續量測(t,s))  
05H: BW (體重) Descriptor Type is 05H, (特定時間非連續量測(t,s))  
06H: BO (血氧) Descriptor Type is 06H, (間隔時間連續量測(?t, c))  
07H: IB (胰島素) Descriptor Type is 07H, (特定時間非連續量測(t,s))  
08H: BOs (血氧) Descriptor Type is 08H, (特定時間非連續量測(t,s))  
other: Reserved  
Example:  
There are 1 Descriptor type BG.  
Data17=01H Descriptor Type is BG

Data18(7:0) ~ Data26(7:0):  
Reserved  
Data27(7:0)~ Data34(7:0):  
BG Type of Latest Record:  
The BG Type of Latest Record copy from  
BG Type of Latest Record Address+0 ~ +7 Record Data  
If BG Type of Total Record is 0,  
BG Type of Latest Record fill 0. (Data27~Data34=0)

Data35(7:0) ~ Data39 (7:0):  
New Year: (Range: 0~99)(unit is 1)  
Formula: y= 2000+x  
y=New Year Date, x=New Year,  
Example:  
x=New Year=99,  
y=2000+99=2099  
New Month: (Range: 1~12)(unit is 1)  
New Day: (Range: 1~31)(unit is 1)  
New Hour: (Range: 0~23) (unit is 1)  
New Minute: (Range: 0~59) (unit is 1)  
New Second: (Range: 0~59)(unit is 1)  
New Date Time= 0: 無需更新時間,

Data40(7:0) ~ Data44 (7:0):  
MID1:  
Data40: 機種別 High byte: same as ADDR[250]  
Data41: 機種別 Low byte: same as ADDR[249]  
Data42 ~ Data44: same as ADDR[253]~[255]:  
MID1 之 序號 (0000000~9999999) 。  
以2進位值儲存。  
Formula:  
MID1 之 序號 = Data42<<16 + Data43<<8 + Data44  
Example:  
Data42= 0x00, Data43= 0x00, Data44= 0x01,  
MID1 之 序號 =  
Data42<<16 + Data43<<8 + Data44 = 0x000001

Data45(7:0)~Data46(7:0)  
Data45: NFCTagAddr\_H  
Data46: NFCTagAddr\_L  
Example:  
NFCTagAddr = 0x0180,  
NFCTagAddr\_H = 0x01,  
NFCTagAddr\_L = 0x80,

Data47(7:0) ~ Data48 (7:0)  
Reserved

MeterRDT: Meter Request Date Time =1: Meter 提出同步時間的請求,  
當Host(手機或NFC Reader)讀到此需求時, 需更新 New Date Time=1,  
且更新日期時間至New Year~New Second, 並將Request Date Time 清為0.  
HostRDT: Host Request Date Time =1: Host 提出同步時間的請求,  
當Meter 讀到此需求時, 若Meter 有需要同步時間, 則將Meter 會將  
MeterRDT 設為1, 並將HostRDT清為0,  
New Date Time=1: 立即更新Meter時間

CMD: [A8H]  
HMD Protocol Command

FUN: [02H]  
Read Record Descriptor

FUN 02 : Read Record Descriptor

1.Send [A8],[02],[DescriptorType],[ChkSum]  
2.Receive = [A8],[02],[Data1],[Data2].....[Data40],[ChkSum High byte],[ChkSum Low byte]

One Record Descriptor Size: 40 bytes  
Example:  
8 Record Descriptor = 8 \* 40 = 320 bytes

Example: BG  
DescriptorType: 01H

Record Block Description																									
Data1		Data2		Data3		Data4		Data5		Data6		Data7		Data8		Data9		Data10		Data11		Data12		Data13	
7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0		7 ~ 0	
7,6,5,4,3,2 Descriptor Type	1,0 Del taT	7,6,5,4,3,2,1,0 Record Len(Bytes)		7,6,5,4,3,2,1,0 Meter Status Len(Bits)		7,6,5,4,3,2,1,0 Condition Len (Bits)		7,6,5,4,3,2,1,0 Result Len (Bits)		7,6,5,4,3,2,1,0 (bit15~bit8 Record Start Addr		7,6,5,4,3,2,1,0 (bit7~bit0)		7,6,5,4,3,2,1,0 (bit15~bit8 Totoal Record		7,6,5,4,3,2,1,0 (bit7~bit0)		7,6,5,4,3,2,1,0 (bit15~bit8 Latest Record Address		7,6,5,4,3,2,1,0 (bit7~bit0)		7,6,5,4,3,2,1,0 (bit15~bit8 Maximum Capacity		7,6,5,4,3,2,1,0 (bit7~bit0)	
Formula (for Meter Status Field)						Meter Status Field Property																			
Data14	Data15	Data16	Data17	Data18	Data19	Data20	Data21	Data22	Data23	Data24	Data25	Data26	Data27	Data28	Data29	Data30									
7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0									
7,6,5,4,3,2,1, 0 Second Slope	7,6,5,4,3,2,1, 0 Voltage Slope	7,6,5,4,3,2,1, 0 Voltage Intercept	7,6,5,4,3,2,1, 0 Temperature Slope	7,6,5,4,3,2,1, 0 Reserved	7,6,5,4,3,2,1,0 Meter Status_01 Property	7,6,5,4,3,2,1,0 Meter Status_02 Property	7,6,5,4,3,2,1,0 Meter Status_03 Property	7,6,5,4,3,2,1,0 Meter Status_04 Property	7,6,5,4,3,2,1,0 Meter Status_05 Property	7,6,5,4,3,2,1,0 Meter Status_06 Property	7,6,5,4,3,2,1,0 Meter Status_07 Property	7,6,5,4,3,2,1,0 Meter Status_08 Property	7,6,5,4,3,2,1,0 Meter Status_09 Property	7,6,5,4,3,2,1,0 Meter Status_10 Property	7,6,5,4,3,2,1,0 Meter Status_11 Property	7,6,5,4,3,2,1,0 Meter Status_12 Property									
Condition Field Property							Result Field Property																		
Data31	Data32	Data33	Data34	Data35	Data36	Data37	Data38	Data39	Data40																
7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0																
7,6,5,4,3,2,1,0 Condition_01 Property	7,6,5,4,3,2,1,0 Condition_02 Property	7,6,5,4,3,2,1,0 Condition_03 Property	7,6,5,4,3,2,1,0 Condition_04 Property	7,6,5,4,3,2,1,0 Condition_5 Property	7,6,5,4,3,2,1,0 Result_01 Property	7,6,5,4,3,2,1,0 Result_02 Property	7,6,5,4,3,2,1,0 Result_03 Property	7,6,5,4,3,2,1,0 Result_04 Property	7,6,5,4,3,2,1,0 Result_05 Property																

Data1(7:2):  
Descriptor Type  
01H: BG (血糖) Descriptor Type is 01H, ((t,s), (DeltaT= 0))  
02H: BP (血壓) Descriptor Type is 02H, ((t,s), (DeltaT= 0))  
03H: PD (步數) Descriptor Type is 03H, ((?t, c), (DeltaT=1))  
04H: BT (體溫) Descriptor Type is 04H, ((t,s), (DeltaT= 0))  
05H: BW (體重) Descriptor Type is 05H, ((t,s), (DeltaT= 0))  
06H: BO (血氧) Descriptor Type is 06H, ((?t, c), (DeltaT=1))  
07H: IB (胰島素) Descriptor Type is 07H, ((t,s), (DeltaT= 0))  
08H: BOs (血氧) Descriptor Type is 08H, ((t,s), (DeltaT= 0))  
other: Reserved

Data1(1:0):  
DeltaT  
0: t, s (Specific Time, discrete)  
1: ?t, c (Delta Time, continuous)  
2~3: Reserved  
Atten: If Condition is 1 (?t, c),  
Don't care Record Len ,  
Result Len, Maximum Capacity

Example:  
If Descriptor Type is BG, DeltaT =0  
(Specific Time, discrete)  
If Descriptor Type is PD, DeltaT =1  
(Delta Time, continuous)

Data2(7:0):  
Record Length(bytes)  
Range: 0~44 bytes

Data3(7:0):  
Meter Status Length(bits)  
Range: 0~192 bits

Data4(7:0):  
Condition Length(bits)  
Range: 0~80 bits

Data5 (7:0):  
Result Length(bits)  
Range: 0~80 bits

Data6~Data7(2bytes)  
Specific Descriptor Type of  
Record Start Address  
Range: 0x0058~0xFFFF

Data8~Data9(2bytes)  
Specific Descriptor Type of Total Record  
Range: 0~65535

Data10~Data11(2bytes)  
Specific Descriptor Type of Latest Record Address  
Range: 0x0058~0xFFFF  
Formula: (DeltaT=0): (Specific Time, discrete)  
y=Latest Record Address;  
k=Maximum Capacity;  
a=Current Index; ( Range: 0 ~ k-1)  
x=RecordLength; b=Record Start Address;  
if(a==0) {  
a=k-1;  
y=(a)x+b;  
}  
else y=(a-1)x+b;  
Example:  
BG Type:  
k=Maximum Capacity=50;  
a=Current Index=1; ( Range: 0 ~ (50-1))  
x=RecordLength=8; b=Record Start Address=0x0358;  
y=(a-1)x+b=0x0358;

Data12~Data13(2bytes)  
Specific Descriptor Type of Maximum Capacity  
Range: 0~65535

Data14(7:0):  
Second Slope  
Range: 0~255 (unit is 1)  
Formula: y=ax  
y=Second Time, a=Second Slope\*1, x=Second,  
Example:  
Second Slope=15, Second=3,  
a=Second Slope\*1=15, x=Second=3  
Second Time=y=ax=15\*3=45(S)

Data15, Data16(7:0):  
Voltage Slope: Range: 0~255 (unit is 0.1)  
Voltage Intercept: Range: 1~255(unit is 0.01)  
Formula: y=ax+b  
y=Battery Voltage, a=Voltage Slope\*0.1,  
x=Voltage\*0.01, b=Voltage Intercept\*0.01  
Example:  
Voltage Slope=10, Voltage=127, Votage Intercept=223,  
a=Votage Slope\*0.1=10\*0.1=1, x=Voltage=127\*0.01=1.27,  
b=Votage Intercept\*0.01=223\*0.01=2.23,  
Battery voltage= y=ax+b=1\*1.27+ 2.23=3.50(V)

Data17(7:0):  
Temperature Slope  
Range: 0~255 (unit is 0.1)  
Formula: y=ax  
y=Meter Temperature, a=Temperature Slope,  
x=Temperature,  
Example:  
Temperature Slope=8, Temperature=32  
a=Temperature Slope\*0.1=0.8, x=Temperature=32  
Meter Temperature=y=ax=0.8\*32=26(°C)



Read Record Descriptor (Example )

Example List	Record Block Description													Formula (for Meter Status Field)					Meter Status Field Property												Condition Field Property					Result Field Property				
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31	D32	D33	D34	D35	D36	D37	D38	D39	D40
BG	04	08	2A	0C	0A	03	58	00	01	03	58	03	85	0F	0A	DF	08	00	16	23	34	44	55	61	76	85	00	00	00	00	13	22	60	33	00	19	00	00	00	00
BP	08	0A	2A	08	1E	03	58	00	01	03	58	03	85	0F	0A	DF	08	00	16	23	34	44	55	61	76	85	00	00	00	00	22	60	33	00	00	19	29	39	00	00
PD continuous	0D	0	2A	16	0	03	58	00	01	03	58	0	0	0F	0A	DF	08	00	16	23	34	44	55	61	76	85	00	00	00	00	4D	57	00	00	00	1F	00	00	00	00
BT	10	07	2A	05	09	03	58	00	01	03	58	03	85	0F	0A	DF	08	00	16	23	34	44	55	61	76	85	00	00	00	00	60	33	00	00	00	18	00	00	00	00
BW	14	08	2A	06	10	03	58	00	01	03	58	03	85	0F	0A	DF	08	00	16	23	34	44	55	61	76	85	00	00	00	00	60	33	F0	00	00	1F	00	00	00	00
BO continuous	19	0	2A	16	0	03	58	00	01	03	58	0	0	0F	0A	DF	08	00	16	23	34	44	55	61	76	85	00	00	00	00	4D	57	00	00	00	1F	00	00	00	00
IB	1C	09	2A	06	18	03	58	00	01	03	58	03	85	0F	0A	DF	08	00	16	23	34	44	55	61	76	85	00	00	00	00	22	F2	00	00	00	1B	2B	00	00	00
BOs	20	08	2A	0C	0A	03	58	00	01	03	58	03	85	0F	0A	DF	08	00	16	23	34	44	55	61	76	85	00	00	00	00	22	60	33	F3	00	19	00	00	00	00

Note: D1~D40: Data1 ~ Data40 (Hex)

Data19(3:0)~Data30(3:0):  
Meter Status Field Length (bits)  
0: means Field Length is 1bit,  
1: means Field Length is 2bits,  
...  
15: means Field Length is 16bits,

Data19(7:4)~Data30(7:4)  
Meter Status Field Property  
0: No Use Field,  
1: Year: (Range: 0~99)(unit is 1)  
Formula:  $y=2000+x$   
y=Year Date, x=Year,  
Example:  
x=Year=99,  
y=2000+99=2099  
2: Month: (Range: 1~12)(unit is 1)  
3: Day: (Range: 1~31)(unit is 1)  
4: Hour: (Range: 0~23) (unit is 1)  
5: Minute: (Range: 0~59) (unit is 1)  
6: Second: (Range: 0~59)(unit is 1)  
Formula: As Data14 Formula  
Example: As Data14 Example  
7: Voltage: (Range: 0~127) (unit is 0.01)  
Formula: As Data15, Data16 Formula  
Example: As Data15, Data16 Example  
8: Temperature: (Range: 0~63) (unit is 1)  
Formula: As Data17 Formula  
Example: As Data17 Example  
9~14:Reserved,  
15:Gap: Data bits fill 0

Data36(3:0)~Data40(3:0):  
Result Field Length (bits)  
0: means Field Length is 1bit,  
1: means Field Length is 2bits,  
...  
15: means Field Length is 16bits,

Data36(7:4)~Data40(7:4)  
Result Field Property  
Example:  
In this Case Descriptor Type is BG,  
0: No Use Field,  
1: Result1:

- (a) IF Descriptor Type is 01H, define Result1 for **Glucose Value** (Range: 0~999), (unit is 1 mg/dl)
- (b) IF Descriptor Type is 02H, define Result1 for **DBP Value**(Range: 0~999), (unit is 1 mmHg)
- (c) IF Descriptor Type is 03H, define Result1 for **First PD Value(Start m Result=1) to Latest PD Value (Start m Result=Accumulator N Result)** (Range: 0~999), (unit is 1 step)
- (d) IF Descriptor Type is 04H, define Result1 for **Temperature BT Value** (Range: 0~500), (unit is 0.1 °C)
- (e) IF Descriptor Type is 05H, define Result1 for **Weight BW Value** (Range: 0~5000), (unit is 0.1 Kg)
- (f) IF Descriptor Type is 06H, define Result1 for **First BO Value(Start m Result=1) to Latest BO Value (Start m Result=Accumulator N Result)** (Range: 0~1000), (unit is 0.1 %)
- (g) IF Descriptor Type is 07H, define Result1 for **Insulin Pen1 Value** (Range: 0~4000), (unit is 0.01 mm)
- (h) IF Descriptor Type is 08H, define Result1 for **BOs Value** (Range: 0~1000), (unit is 0.1 %)
- 2: Result2:

(a) IF Descriptor Type is 02H, define Result2 for **SBP Value**(Range: 0~999), (unit is 1 mmHg)

(b) IF Descriptor Type is 07H, define Result2 for **Insulin Pen2 Value** (Range: 0~4000), (unit is 0.01 mm)
- 3: Result3:

(a) IF Descriptor Type is 02H, define Result3 for **HB Value**(Range: 0~999), (unit is 1 bmp )
- 4~14:Reserved
- 15:Gap: Data bits fill 0

Data31(3:0)~Data35(3:0):  
Condition Field Length (bits)  
0: means Field Length is 1bit,  
1: means Field Length is 2bits,  
...  
15: means Field Length is 16bits,

Data31(7:4)~Data35(7:4)  
Condition Field Property  
0: No Use Field,  
1: Code (Range: 0~15)  
2: Event: (Range:0~7)  
(a) IF Descriptor Type is 01H, define Event for EventBG  
IF Event Type=0, EventBG means ( 0: AC, 1: PC, 2: QCL, 3: QCH )  
Event Type=1~255, EventBG means ( 0: C, 1: V, 2: A, 3:N )  
(b) IF Descriptor Type is 02H, define Event for EventBP,  
EventBP means ( 0: AC, 1: PC )  
(c) IF Descriptor Type is 07H, define Event for EventIB,  
EventIB means ( 0: AC, 1: PC )  
(c) IF Descriptor Type is 08H, define Event for EventBOs,  
EventBOs means ( 0: AC, 1: PC )  
3: Pid: (Range: 0~15): Pid=0: No use PID, Pid=1~15: means P01~P15,  
4: DeltaTime (Range: 1~16000), means DeltaTime 1~16000s  
5: Accumulator N Result : (Range: 0~100), means Accumulator N Result 0~100  
6: MaskRec:0: Unmask Record, 1: Mask Record  
7~14:Reserved  
15:Gap: Data bits fill 0

RTC Read/Write (Date\_Time)

Read RTC

1.Send: [A1],[A5],[A9]  
2.Receive: [B1] [Year],[Month],[Date],[Hour],[Minute],[Second],[ChkSum High Byte],[ChkSum Low Byte]  
or Receive: [A2] [Year],[Month],[Date],[Hour],[Minute],[Second],[ChkSum High Byte],[ChkSum Low Byte]  
Note: [ChkSum High byte], [ChkSum High byte]=[B1]+...+[Second],

Example(Hex): Read RTC Date Time: 2015(2000+[Year]), August,08, PM: 05:08:39.  
A1, A5, A9  
B1, 0F, 08, 08, 11, 08, 27, 01, 10  
or A2, 0F, 08, 08, 11, 08, 27, 01, 01

CMD: [A1H]  
[Read RTC] Command Function

Write RTC

1.Send: [B1],[Year],[Month],[Date],[Hour],[Minute],[Second],[ChkSum High Byte],[ChkSum Low Byte]  
2.Receive: [B2],[5E],[BB]

Example(Hex): Write RTC Date Time: 2015(2000+[Year]), August,08, PM: 05:08:39.  
B1, 0F, 08, 08, 11, 08, 27, 01, 10  
B2, 5E, BB

CMD: [B1H]  
[Write RTC] Command Function

Parameter Read

Read Total Record No.

1.Send: [AE],[A5],[A9]  
2.Receive: [Data\_H],[Data\_L],[5A],[AA]

Example(Hex): Read Total Record No(2 byte(0~65535), Total Record No: 291 (0123h)  
Send: AE,A5,A9  
Receive: 01,23,5A, AA

CMD: [AEH]  
[Read Total Record No.] Command Function

Read Production Year.

1.Send: [AC],[B5],[B9]  
2.Receive: [Data],[5C],[BB]

Example(Hex): Read Product Year(1 byte(0~99)(Real Product Year is 2000 + [Data]), Product Year: 2015+15 (0Eh).  
Send: AC,B5, B9  
Receive: 0E,5C, BB

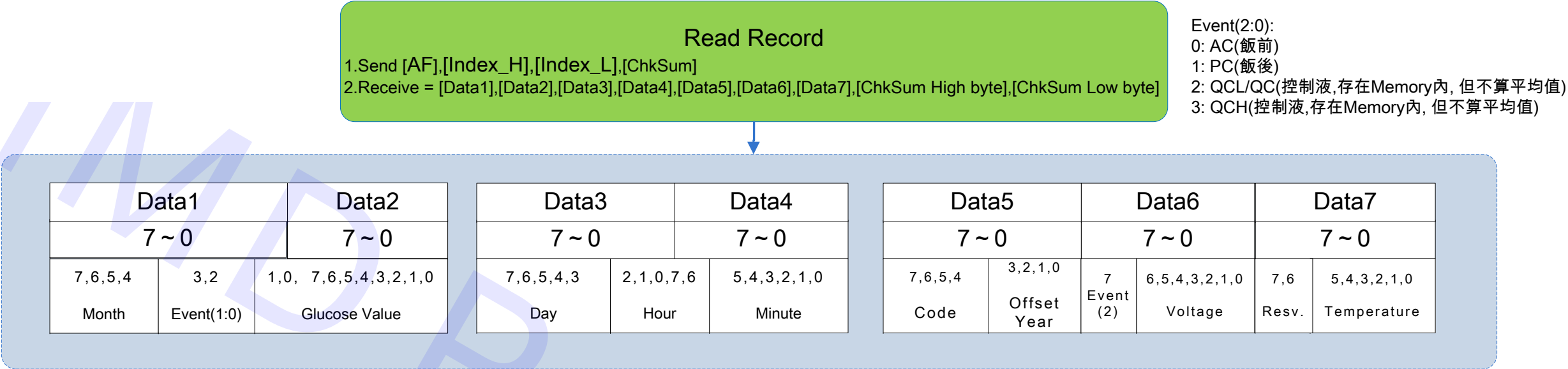
CMD: [ACH]  
[Read Production Year.] Command Function

Read Model Number.

1.Send: [AD],[B5],[B9]  
2.Receive: [Data],[5C],[BB]

Example(Hex): Read Model No(1 byte(0~255), Model No: 135 (87h).  
Send: AD,B5, B9  
Receive: 87,5C, BB

CMD: [ADH]  
[Read Model Number.] Command Function



Data1(7:4):  
Month: (Range: 1~12)  
Data1(1:0), Data2(7:0)  
Glucose Value: (Range: 0~999)(unit: mg/dL)

Data3(7:3):  
Day: (Range: 1~31)  
Data3(2:0), Data4(7:6):  
Hour: (Range: 0~23)  
Data4(5:0):  
Minute: (Range: 0~59)

Data5(3:0):  
Offset Year: (Range: 0~15)  
Formula:  
Year=2000+Product Year+Offset Year,  
Example:  
Offset Year=1, Product Year=15  
Year= 2000+15+1=2016,

Data5(7:4):  
Code: (Range: 0~15)

Data6(6:0):  
Voltage: (Range: 0~127)  
Formula:  
Battery voltage=(Voltage\*0.01)+ 2.23,  
Example:  
Voltage=127  
Battery voltage= (127\*0.01)+ 2.23=3.50 (V)

Data6(7), Data1(3:2): (Range: 0~3)  
Event(2:0): (0: AC, 1: PC, 2: QCL, 3: QCH )  
Example:  
Event=1  
PC(飯後)

Data7(5:0):  
Temperature: (Range: 0~255)  
Formula:  
Meter Temperature=0.8\*Temperature,  
Example:  
Temperature=32  
Meter Temperature=0.8\*32=26 (°C)

Data7(7:6):  
Resv: no use.



Read Record (FUN 03)

Record Size= Record Len ( Record Descriptor Data2 (DescriptorType: 01H))

CMD: [A8H]  
HMD Protocol Command  
FUN: [03H]  
Read Descriptor Type  
Record  
DescriptorType: [01H]  
Descriptor Type 01H Record

FUN 03 : Read Descriptor Type 01H Record Format  
1.Send [A8],[03],[DescriptorType],[IndexH],[IndexL],[ChkSum]  
2.Receive = [A8],[03],[Data1],[Data2].....[Data8],[ChkSum High byte],[ChkSum Low byte]

Example: BG  
DescriptorType: 01H

Meter Status Field								Condition Field		Result Field
Data1	Data2		Data3	Data4		Data5	Data6	Data7	Data8	
7 ~ 0	7 ~ 0		7 ~ 0	7 ~ 0		7 ~ 0	7 ~ 0	7 ~ 0	7 ~ 0	
7,6,5,4,3,2,1 Year	0, 7,6,5 Month	4,3,2,1,0 Day	7,6,5,4,3 Hour	2,1,0, 7,6,5 Minute	4,3 Sec d	2,1,0, 7,6,5,4 Voltage	3,2,1,0, 7,6 Tempera ture	5,4,3,2 Code	1,0, 7 Even tBG	6 Mas kR ec Pid Glucose Value

EventBG:  
IF Event Type=0, EventBG means ( 0: AC, 1: PC, 2: QCL, 3: QCH )  
IF Event Type=1~255, EventBG means ( 0: C, 1: V, 2: A, 3:N )  
Glucose Value: (Range: 0~999), (unit is 1 mg/dl)