

## For 5000 counts data logger models only

### "Bytes return" Format for "Command 4eh" will be:

return Byte(s): 512 bytes

Data format returned by DMM:0000\_dddd

Memory map of data logger series: Initial 1<sup>st</sup> "512 Bytes return" for "Command 4eh"

Page0						
Address	Description	Bit7~4	Bit3	Bit2	Bit1	Bit0
0	DON'T CARE					
1						
191						
192	EndAddr0	0000	EA3	EA2	EA1	EA0
193	EndAddr1	0000	EA7	EA6	EA5	EA4
194	EndAddr2	0000	EA11	EA10	EA9	EA8
195	EndAddr3	0000	EA15	EA14	EA13	EA12
196	EndPage0	0000	EP3	EP2	EP1	EP0
197	EndPage1	0000	EP7	EP6	EP5	EP4
198	DON'T CARE					
199						
221						
222	State	0000	HzMode	TrigLevel		Select State
223	Function	0000	Func			
224	DataSet1	0000	Range			
225		0000	Interval			
226		0000	D0			
227		0000	D1			
228		0000	D2			
229	DataSet1	0000	OL	Sign	D3	
230	DataSet2	0000	Range			
231		0000	Interval			
232		0000	D0			
233		0000	D1			
234		0000	D2			
235	DataSet2	0000	OL	Sign	D3	
236	DataSet3					
		One DataSet contains 6 Buffers, format same as DataSet1				
241	DataSet3					
242	DataSet4					
		One DataSet contains 6 Buffers, format same as DataSet1				
511	DataSet48					

\*1  
\*1  
\*1  
\*1  
\*1  
\*1

\*2  
\*2  
\*3  
\*4  
\*5  
\*5  
\*5  
\*5

### "Bytes return" Format for "Command 52h" will be:

return Byte(s): 512 bytes

Data format returned by DMM:0000\_dddd

\*6

Memory map of data logger series: Consecutive 2<sup>nd</sup> ~128<sup>th</sup> "512 Bytes return" for "Command 52h"

Page0						
Address	Description	Bit7~4	Bit3	Bit2	Bit1	Bit0
512	DataSet49	0000	Range			
513		0000	Interval			
514		0000	D0			
515		0000	D1			
516		0000	D2			
517	DataSet49	0000	OL	Sign	D3	
518	DataSet50	One DataSet contains 6 Buffers, format same as DataSet49				
32761	DataSet5423					
32762	No. 5424					
	One DataSet contains 6 Buffers, format same as DataSet49 (for 43000 points model only)					
65533	No. 10885	DON'T CARE				
65534						
65535						

Memory map of data logger series: Consecutive 129<sup>th</sup>~256<sup>th</sup> "512 Bytes return" for "Command 52h"

Page1 (43000 points model only)						
Address	Description	Bit7~4	Bit3	Bit2	Bit1	Bit0
0	DON'T CARE					
1						
2	No. 10886					
	One DataSet contains 6 Buffers, format same as DataSet49 (for 43000 points model only)					
65533	No. 21807					
65534	DON'T CARE					
65535						

Memory map of data logger series: **Consecutive 257th~384th** "512 Bytes return" for "**Command 52h**"

Page2(BM515 only)						
Address	Description	Bit7~4	Bit3	Bit2	Bit1	Bit0
0	DON'T CARE					
1						
2	No. 21808					
	One DataSet contains 6 Buffers, format same as DataSet49 (for 43000 points model only)					
65533	No. 32729					
65534	DON'T CARE					
65535						

Memory map of data logger series: **Consecutive 385th~512nd** "512 Bytes return" for "**Command 52h**"

Page3(BM515 only)						
Address	Description	Bit7~4	Bit3	Bit2	Bit1	Bit0
0	DON'T CARE					
1						
2	No. 32730					
	One DataSet contains 6 Buffers, format same as DataSet49 (for 43000 points model only)					
65533	No. 43651					
65534	DON'T CARE					
65535						

\*1:

EndPage	Bit7~4	Bit3~0	EndAddr	Bit15~12	Bit11~8	Bit7~4	Bit3~0
	EndPage1	EndPage0		EndAddr3	EndAddr2	EndAddr1	EndAddr0

End Address= EndPage:(EndAddr\*2+5)  
The last DataSet of Page 0 is No. 10885.  
The last DataSet of Page 1 is No. 21807.  
The last DataSet of Page 2 is No. 32729.

For example 1:  
if (EndPage= 00h, EndAddr= 3FFAh =16378d)  
then (End Address = Page 0 : 32761\*)  $*(16378*2+5=32761)$   
So Total dataSets = (32761-224\*+1)/6= 5423  $*224$ : start address for first DataSet of Page 0

For example 2:  
if (EndPage= 03h, EndAddr= 3FFAh =16378d)  
then (End Address = Page 3 : 32761\*)  $*(16378*2+5=32761)$   
So Total dataSets = 32729\* + (32761-2\*+1)/6 = 38189  $*2$ : start address for first DataSet of Page 3  
 $*32729$ : last DataSet of Page 2

\*2:

State	0000	HzMode	TrigLevel	Select State
Function	0000		Func	

bit format	Func	HzMode	Select State
AcV	0001	0	0
DcV	0010	0	0
DCmV	0011	0	0
ACmV	0011	0	1
Cx	0100	0	0
Diode	0100	0	1
degree C	0101	0	0
degree F	0101	0	1
Ohm	0110	0	0
continuity	0110	0	1
DCA	0111	0	0
ACA	0111	0	1
DCmA	1000	0	0
ACmA	1000	0	1
DCuA	1001	0	0
ACuA	1001	0	1
Hz of AcV	0001	1	0
Hz of DcV	0010	1	0
Hz of DCmV	0011	1	0
Hz of ACmV	0011	1	1
Hz of Cx	0100	1	0
Hz of Diode	0100	1	1
Hz of degree C	0101	1	0
Hz of degree F	0101	1	1
Hz of Ohm	0110	1	0
Hz of continuity	0110	1	1
Hz of DCA	0111	1	0
Hz of ACA	0111	1	1
Hz of DCmA	1000	1	0
Hz of ACmA	1000	1	1
Hz of DCuA	1001	1	0
Hz of ACuA	1001	1	1

Trig Level	TL1	TL0	function range
Trig Level1	0	0	Hz of ACV, DCV 5V range
Trig Level2	0	1	Hz of ACV, DCV 50V range
Trig Level3	1	0	Hz of ACV, DCV 500V range
Trig Level4	1	1	Hz of ACV, DCV 1000V range

\*3:

Range	bit3~0	
1	0000	for 5V, 50mV, 50nF, Dx, 500Ohm, 5A, 50mA, 500uA, 9.999Hz ranges
2	0001	for 50V, 500mV, 500nF, 500Ohm, Continuity, 10A, 500mA, 5000uA, 99.99Hz ranges
3	0010	for 500V, 5uF, 5kOhm, 999.9Hz ranges
4	0011	for 1000V, 50uF, 50kOhm, 9.999kHz ranges
5	0101	for 500uF, 500kOhm, 99.99kHz ranges
6	0110	for 9999uF, 5MOhm, 999.9kHz ranges
7	0111	for 50MOhm range
8	1000	

\*4:

Interval(seconds)	bit3~bit0	Note
0.05	0000	AcV,DcV,mV,A,mA,uA only
0.4	0000	Hz mode only
0.2	0000	Dx,degree C & F,Ohm only
1	0001	
20	0010	
40	0011	
60	0100	
120	0101	
240	0110	
480	0111	

\*5: Dataset

DataSet Format: Each DataSet contains 6 Buffers.

byte5				byte4	byte3	byte2	byte1	byte0
bit7~bit4	bit3	bit2	bit1~0	bit7~0	bit7~0	bit7~0	bit7~0	bit7~0
0000	OL	Sign(±)	D3	D2	D1	D0	Interval	Range

\*\*\* Data= D3 D2 D1 D0(Hex)

For example 1:

If [(byte5, byte4, byte3, byte2, byte1, byte0) = (0101b, 00h, 03h, 02h, 00h, 01h) 1032h=4146  
and State=00h, function=02h, Range=0001b]

then this DataSet is "DC -41.46V" & interval=0.05second

For example 2:

If [(byte5, byte4, byte3, byte2, byte1, byte0) = (0010b, 06h, 0Fh, 01h, 00h, 05h) 26F1h=9969  
and State=00001100b (Hz bit: 1, TrigLevel bits : 10), function=01h, Range=0101b]

then this DataSet is "99.69kHz" on ACV 500V range & interval=0.4second

\*6: Very important

Command 4eh will reset Address Index of memory in BM510 series. In order to download the recorded data correctly, each time please send the commands as following procedures.

1. Send Command 4eh to get initial set of 512 bytes data.
2. Send Command 52h to get consecutive 2'nd set of 512 bytes data.
3. Send Command 52h to get consecutive 3'rd set of 512 bytes data.
4. Repeat "Send Command 52h" up to the "last number of 512 bytes data set".

\*: "last number of 512 bytes data set" = EndPage \* 128 + EndAddr / 512

Example 1: if (EndPage= 00h, EndAddr= 3FFAh =16378d)

then (End Address = Page 0 : 32761)

(16378\*2+5=32761)

So Total dataSets = (32761-224+1)/6= 5423

224: start address for first DataSet of Page 0

"last number of 512 bytes data set" = 0 \* 128 + 32761 / 512 = 63.~

Send "Command 4eh" and then Repeat "send Command 52h" for 63 times,  
and then you will get all recorded data for Example 1.

Example 2: if (EndPage= 03h, EndAddr= 3FFAh =16378d)

then (End Address = Page 3 : 32761)

(16378\*2+5=32761)

So Total dataSets = 32729 + (32761-2+1)/6 = 38189

2: start address for first DataSet of Page 3

"last number of 512 bytes data set" = 3 \* 128 + 32761 / 512 = 447.~

Send "Command 4eh" and then Repeat "send Command 52h" for 447 times,  
and then you will get all recorded data for Example 2.