

Parameter ID	Parameter Name	Parameter Description	Type	Min. Write Value	Max. Write Value	Value Description	Request	Response
0	Run Start	Start acquisition of MCA data	Func	0	1	0=Delete existing MCA data 1=Resume existing MCA data	Standard	Standard
1	Run Stop	Stop acquisition of MCA data	Func	-	-	-	Standard	Standard
2	Run Stop Condition Type	Set type of stop condition for MCA data acquisition	R/W	0	4	0=None 1=Stop at fixed Livetime 2=Stop at fixed Realtime 3=Stop at fixed Input Counts 4=Stop at fixed Output Counts	Standard	Standard
3	Run Stop Condition Value Low	Set LSBytes value of stop condition for MCA data acquisition	R/W	0	65535	Time in units of 10µs or number of counts	Standard	Standard
4	Run Stop Condition Value High	Set MSBytes value of stop condition for MCA data acquisition	R/W	0	65535	Time in units of 10µs or number of counts	Standard	Standard
5	Run Status	Read current status of run	R	-	-	0=No run active 1=run active	Standard	Standard
6	Run Reatime Low	Read LSBytes of realtime in run	R	-	-	Time in units of 10µs	Standard	Standard
7	Run Realtime High	Read MSBytes of realtime in run	R	-	-	Time in units of 10µs	Standard	Standard
8	Run Livetime Low	Read LSBytes of livetime in run	R	-	-	Time in units of 10µs	Standard	Standard
9	Run Livetime High	Read MSBytes of livetime in run	R	-	-	Time in units of 10µs	Standard	Standard
10	Run Output Counts Low	Read LSBytes of output counts in run	R	-	-	Number of counts	Standard	Standard
11	Run Output Counts High	Read MSBytes of output counts in run	R	-	-	Number of counts	Standard	Standard
12	Run Input Counts Low	Read LSBytes of input counts in run	R	-	-	Number of counts	Standard	Standard
13	Run Input Counts High	Read MSBytes of input counts in run	R	-	-	Number of counts	Standard	Standard
14	Run Output Count Rate Low	Read MSBytes of output count rate in run	R	-	-	Counts per second	Standard	Standard
15	Run Output Count Rate High	Read MSBytes of output count rate in run	R	-	-	Counts per second	Standard	Standard
16	Run Input Count Rate Low	Read LSBytes of input count rate in run	R	-	-	Counts per second	Standard	Standard
17	Run Input Count Rate High	Read MSBytes of output count rate in run	R	-	-	Counts per second	Standard	Standard
18	Run Statistics	Read Parameters 5 to 17 simultaneously	Func	-	-	Response Bytes 1-2 : 0=No Run Active, 1=Run Active Response Bytes 3-10 : Time in units of 10µs Response Bytes 11-18: Numbers of counts Response Bytes 19-26: Counts per second	Standard	Non-Standard (13 x 4Byte)
19	MCA Read	Read MCA data of current run	Func	-	-	Counts per bin Starts at LSByte of bin 0 Ends at MSByte of last bin	Non-Standard	Non-Standard (Configured by Parameter 20 + 21)
20	MCA Number of Bins	Set or read the number of bins in MCA	R/W	9	13	Width of MCA as 2^x	Standard	Standard
21	MCA Bytes per bin	Set or read the number of bytes per bin in MCA	R/W	1	3	Bytes per bin	Standard	Standard

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32	Fastfilter Peaking Time	Set or read the peaking time of the fastfilter	R/W	2	40	Time in units of 12.5ns	Standard	Standard
33	Fastfilter Gap Time	Read the gap time of the fastfilter	R	-	-	Time in units of 12.5ns	Standard	Standard
34	Mediumfilter Peaking Time	Read the peaking time of the mediumfilter	R	-	-	Time in units of 12.5ns	Standard	Standard
35	Mediumfilter Gap Time	Read the gap time of the mediumfilter	R	-	-	Time in units of 12.5ns	Standard	Standard
36	Slowfilter Peaking Time	Set or read the peaking time of the slowfilter	R/W	2	1008	Time in units of 12.5ns, Permitted values: 2, 4, 6, 8, 12 and n*16	Standard	Standard
37	Slowfilter Gap Time	Set or read the gap time of the slowfilter	R/W	2	127	Time in units of 12.5ns	Standard	Standard
38	Fastfilter Trigger Threshold	Set or read trigger threshold for pulse detection with the fastfilter	R/W	0	16384	Arbitrary Unit	Standard	Standard
39	Mediumfilter Trigger Threshold	Set or read the trigger threshold for pulse detection with the mediumfilter	R/W	0	16384	Arbitrary Unit	Standard	Standard
40	Mediumfilter Pulse Detection Enable	Set or read utilisation of mediumfilter for pulse detection	R/W	0	1	0=Disable pulse detection by mediumfilter 1=Enable pulse detection by mediumfilter	Standard	Standard
41	Fastfilter Maximum Width	Set or read maximum width of fastfilter	R/W	0	255	Time in units of 12.5ns	Standard	Standard
42	Mediumfilter Maximum Width	Set or read maximum width of mediumfilter	R/W	0	1023	Time in units of 12.5ns	Standard	Standard
43	Reset Inhibit Time	Set or read inhibit time after detection of reset	R/W	0	255	Time in units of 12.5ns	Standard	Standard
44	Baseline Average Length	Set or read length of running average for baseline mean	R/W	1	8	Length of running average as 2^x	Standard	Standard
45	Baseline Trim	Set or read value of baseline trim	R/W	0	4	0=Longest possible medium filter 1=Long medium filter 2=Intermediate medium filter 3=Short medium filter 4=Shortest possible medium filter	Standard	Standard
46	Baseline Correction Enable	Set or read utilisation of baseline correction	R/W	0	1	0=Disable Baseline Correction 1=Enable Baseline Correction	Standard	Standard
47	Digital Energy Gain	Set or read value for digital gain for energy values	R/W	0	16383	Arbitrary Unit: 5461 ≈ 5eV/Bin	Standard	Standard
48	Digital Energy Offset	Set or read value for digital offset for energy values	R/W	0	65535	Arbitrary Unit: 0 is -256 Bins, 32768 is 0 Bins, 65565 is +256 Bins	Standard	Standard
49	Dynamic Reset Enable	Set or read utilisation of dynamic reset	R/W	0	1	0=Disable Dynamic Reset 1=Enable Dynamic Reset	Standard	Standard
50	Dynamic Reset Threshold	Set or read threshold of dynamic reset	R/W	0	65535	ADC-Code (1 LSB=30μV) 0= -1V; 65535= +1V	Standard	Standard
51	Dynamic Reset Duration	Set or read duration of dynamic reset	R/W	0	65535	Time in units of 12.5ns	Standard	Standard

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64	Parameter Set Load	Load parameter set from user data memory	Func	0	1	Number of memory slot	Standard	Standard
65	Parameter Set Save	Save current parameter set into user data memory	Func	0	1	Number of memory slot	Standard	Standard
66	Firmware Version Major	Read major number of firmware version	R	-	-	Version number	Standard	Standard
67	Firmware Version Minor	Read minor number of firmware version	R	-	-	Version number	Standard	Standard
68	Firmware Version Patch	Read patch number of firmware version	R	-	-	Version number	Standard	Standard
69	Firmware Version Build	Read build number of firmware version	R	-	-	Version number	Standard	Standard
70	Firmware Variant	Read variant code of firmware	R	-	-	Variant Code	Standard	Standard
71	MCU Passthrough	UART communication with MCU	Func	-	-	MCU Datagramm	Non-Standard	Non-Standard
72	MCU Status	Read status information about the MCU	R	-	-	Bit 0: 0=Not PWR; 1=PWR Bit 1: 0=Not RDY; 1=RDY Bit 2: 0=Not ARDY; 1=ARDY	Standard	Standard
73	Board Temperature	Read board temperature	R	-	-	Temperature in units of 1/16 K	Standard	Standard
74	Analog Hardware Powerdown	Set or read powerdown status of analog hardware	R/W	0	1	0=Disable Powerdown 1=Enable Powerdown	Standard	Standard
75	Clocking Speed	Set or read clocking speed of DPP	R/W	0	0	0=80MHz	Standard	Standard
79	Read all Parameter	Read parameters 0 to 255 simultaneously	Func	-	-	See respective entries in this document	Standard	Non-Standard (256 x4Byte)
80	Event Trigger Source	Set or read trigger source for "Event Scope Get" and "Event Rate Calculate"	R/W	0	12	0=Instant Trigger, 1=Specific ADC Value, 2=ADC Out of Range, 3=Fastfilter Trigger, 4=Fastfilter Reset Detected, 5=Fastfilter Pileup, 6=Mediumfilter Trigger, 7=Mediumfilter Reset Detected, 8=Mediumfilter Pileup, 9=New Output Count (Any Energy), 10=New Output Count (Specific Energy), 11=New Baseline Sample, 12=Dynamic Reset	Standard	Standard
81	Event Trigger Value	Set or read trigger value for "Event Scope Get" and "Event Rate Calculate"	R/W	0	65535	Depends on parameter "Event Trigger Source"	Standard	Standard
82	Event Scope Sampling Interval	Set or read sampling interval for "Event Scope Get"	R/W	1	65535	Sample frequency as fraction of 80MHz	Standard	Standard
83	Event Scope Trigger Timeout	Set or read trigger timeout for "Event Scope Get"	R/W	0	4	0=Timeout after 1s without trigger 1=Timeout after 2s without trigger 2=Timeout after 4s without trigger 3=Timeout after 8s without trigger 4=Timeout after 16s without trigger	Standard	Standard
84	Event Scope Get	Trigger and read signal trace	Func	0	5	0=ADC-Data, 1=Fastfilter, 2=Mediumfilter, 3=Slowfilter, 4=Baseline-Average, 5= Baseline-Sample	Non-Standard	Non-Standard
85	Event Rate Calculate	Refresh parameter 86 und 87	Func	0	4	0=Run trigger for 1s 1=Run trigger for 2s 2=Run trigger for 4s 3=Run trigger for 8s 4=Run trigger for 16s	Standard	Standard
86	Event Rate Low	Amount of triggered events LSBytes	R	-	-	Trigger amount	Standard	Standard
87	Event Rate High	Amount of triggered events MSBytes	R	-	-	Trigger amount	Standard	Standard
90	Key Revision	Read revision number of encryption key	R	-	-	Version number	Standard	Standard
91	Delete Firmware	Delete firmware in the update section of the configuration memory	Func	x	x	x	Standard	Standard
92	Write Firmware Section	Write a firmware section to the configuration memory	Func	0	4095	Firmware Segment Number, Firmware Data; Defined in DPP3_Befehlsdokumentation.docx	Non-Standard	Standard
93	Read Firmware Section	Read a firmware section from the configuration memory	Func	0	4095	Firmware Segment Number Defined in DPP3_Befehlsdokumentation.docx	Standard	Non-Standard
94	Service Code Low	Service code for maintenance access	R/W	0	65535	Code to unlock service mode; PW Data is 4 Byte (Parameter ID 95 and 94): 0x444F 4449 = Access to parameter slot 0 and MAC address 0x4353 413F = Access to parameter Reset Detection 0x5550 4657 = Access to parameter "Delete Firmware"	Standard	Standard
95	Service Code High	Service code for maintenance access	R/W	0	65535	Code to unlock service mode	Standard	Standard

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96	Ethernet Powerdown	Set or read powerdown status of ethernet chip	R/W	0	1	0=Disable Powerdown 1=Enable Powerdown	Standard	Standard
97	Ethernet Protocol	Set or read ethernet protocol	R/W	1	2	1=TCP, 2=UDP	Standard	Standard
98	Ethernet Speed	Set or read ethernet speed mode	R/W	0	4	0=Auto negotiation 1=10MBits Half Duplex 2=10MBits Full Duplex 3=100MBits Half Duplex 4=100Mbps Full Duplex	Standard	Standard
100	Ethernet IP Address 0-1	Set or read MSByte of ethernet IP address	R/W	0	65535	IP Address	Standard	Standard
101	Ethernet IP Address 2-3	Set or read LSByte of ethernet IP address	R/W	0	65535	IP Address	Standard	Standard
102	Ethernet Subnet Mask 0-1	Set or read MSByte of ethernet subnet mask	R/W	0	65535	Subnet	Standard	Standard
103	Ethernet Subnet Mask 2-3	Set or read LSByte of ethernet subnet mask	R/W	0	65535	Subnet	Standard	Standard
104	Ethernet Gateway IP Address 0-1	Set or read MSByte of ethernet gateway IP address	R/W	0	65535	IP Address	Standard	Standard
105	Ethernet Gateway IP Address 2-3	Set or read LSByte of ethernet gateway IP address	R/W	0	65535	IP Address	Standard	Standard
106	Ethernet Port	Read ethernet port	R	-	-	Port number	Standard	Standard
107	Ethernet MAC Address 0-1	Read LSByte of ethernet MAC address	R	0	65535	MAC des DPPs	Standard	Standard
108	Ethernet MAC Address 2-3	Read Medium Bytes of ethernet MAC address	R	0	65535	MAC des DPPs	Standard	Standard
109	Ethernet MAC Address 4-5	Read MSByte of ethernet MAC address	R	0	65535	MAC des DPPs	Standard	Standard
110	Ethernet Reconfigure	Apply current ethernet configuration	Func	-	-	-	Standard	Standard
115	USB Powerdown	Set or read powerdown status of the USB chip	R/W	0	1	0=Disable Powerdown 1=Enable Powerdown	Standard	Standard
118	SPI Powerdown	Set or read powerdown status SPI communication	R/W	0	1	0=Disable Powerdown 1=Enable Powerdown	Standard	Standard