

ODIN Q_MP registers (Base address 0x1000)

Version: 2.3

2006.07.10

Address	Bits	Register	Read/Write	Explanation	Remark	Default
000	-	UPDATE	RW	Reading/writing updates all counters (Dataless)	Entire board	
	0	R_STOP		Start/stop run	Start/stops all triggers and TFC functions except BCR	1
004	0	RST_CNT		Reset all ODIN counters	Entire board	0
	1	RST_L0ERST		Reset L0 electronics reset		0
	2	RST_L01ERST		Reset L0+L1 electronics reset		0
	3	RST_CALTRG_A		Reset calibration trigger A		0
	4	RST_CALTRG_B		Reset calibration trigger B		0
	5	RST_CALTRG_C		Reset calibration trigger C		0
	6	RST_PERCMD		Reset periodic command		0
	7	RST_ECR		Reset ECR periodicity counter		0
	8	RST_IP_DEST		Reset IP broadcasting		0
	9	RST_IPMEM		Reset IP destination table		0
	10	RST_AFIFO		Reset L0 Accept FIFO		0
	11	RST_FEB		Reset Front-End Buffer		0
	12	RST_TTCRX		Reset TTCrx		0
008	0	R_STOP_EXT_ENB		Enable start/stop on external signal (P5-R)		0
	1	R_L0ERST_ENB		Enable L0 electronics reset		0
	2	R_L01ERST_ENB		Enable L0+L1 electronics reset		0
	3	R_CALTRG_A_ENB		Enable calibration trigger A		0
	4	R_CALTRG_B_ENB		Enable calibration trigger B		0
	5	R_CALTRG_C_ENB		Enable calibration trigger C		0
	6	R_PERCMD_ENB		Enable periodic command		0
	7	R_ECR_ENB		Enable ECR		0
	8	R_IP_DEST_ENB		Enable IP destination broadcasting		0
	9	R_BCR_ENB		Enable BCR		1
00C	0	DMND_ECR	WO	Demand ECR		0
	1	DMND_L0ERST	WO	Demand L0 electronics reset		0
	2	DMND_L01ERST	WO	Demand L0+L1 electronics reset		0
	3	DMND_CALTRG_A	WO	Demand calibration sequence A		0
	4	DMND_CALTRG_B	WO	Demand calibration sequence B		0
	5	DMND_CALTRG_C	WO	Demand calibration sequence C		0

	6	DMND_PERCMD	WO	Demand periodic command		0
	7	DMND_MEP_FLUSH	WO	Flush MEP by forcing sending the destination assignment	At the end of run, don't flush while triggers are enabled	0
010	11 .. 0	P_BCR_OFS		Offset of BCR and ECR	value+64	32
014	11 .. 0	P_ORBIT_LEN		Length of LHC orbit	Warning: This should be 3563!	256
018	15 .. 0	P_ECR_PER		ECR periodicity	value+1	3
01C	11 .. 0	P_L0ERST_OFS		Offset of L0 electronics reset		0
020	23 .. 0	P_L0ERST_PER		Periodicity of L0 electronics reset		0
	31 .. 24	P_L0ERST_DEL_RT		Delay to release trigger after L0 electronics reset		0
024	9 .. 0	P_L0ERST_DEL_DM		Delay to empty L0 derandomizer during L0 electronics reset		0
028	11 .. 0	P_L01ERST_OFS		Offset of L0+L1 electronics reset		0
02C	23 .. 0	P_L01ERST_PER		Periodicity of L0+L1 electronics reset	value+1	0
	31 .. 24	P_L01ERST_DEL_RT		Delay to release trigger after L0+L1 electronics reset		0
030	23 .. 0	P_CALTRG_A_PER		Periodicity of calibration sequence A	value+1	0
034	11 .. 0	P_CALTRG_A_OFS		Offset of calibration sequence A		0
	19 .. 12	P_CALTRG_A_DEL		Delay of calibration trigger A		0
	22 .. 20	P_CALTRG_A_WIN		Trigger window of consecutive calibration triggers	Number of consecutive triggers = 1 +/- window	0
	23		unused			
	26 .. 24	P_CALTRG_A_CMD	RO	Calibration command		"100"
038	23 .. 0	P_CALTRG_B_PER		Periodicity of calibration sequence B	value+1	0
03C	11 .. 0	P_CALTRG_B_OFS		Offset of calibration sequence B		0
	19 .. 12	P_CALTRG_B_DEL		Delay of calibration trigger B		0
	22 .. 20	P_CALTRG_B_WIN		Trigger window of consecutive calibration triggers B	Number of consecutive triggers = 1 +/- window	0
	23		unused			
	26 .. 24	P_CALTRG_B_CMD		Calibration command B		"101"
040	23 .. 0	P_CALTRG_C_PER		Periodicity of calibration sequence C	value+1	0
044	11 .. 0	P_CALTRG_C_OFS		Offset of calibration sequence C		0
	19 .. 12	P_CALTRG_C_DEL		Delay of calibration trigger C		0
	22 .. 20	P_CALTRG_C_WIN		Trigger window of consecutive calibration triggers C	Number of consecutive triggers = 1 +/- window	0
	23		unused			
	26 .. 24	P_CALTRG_C_CMD		Calibration command C		"110"
048	23 .. 0	P_PERCMD_PER		Periodicity of periodic command	value+1	0
04C	11 .. 0	P_PERCMD_OFS		Offset of periodic command		0
	19 .. 12	P_USRCMD		TTC user command		0
050	15 .. 0	INT_IPMEM_ADDR		Address for writing to the IP destination table		0
054	15 .. 0	INT_IPMEM_DEST		Destination to write or read in the IP destination table	Writing/reading increments address counter	0
058	11 .. 0	P_IPMEM_ADRANGE		End address in IP destination table	#addresses - 1	0

	16 .. 12	P_MEP_LEN		Size of Multi-Event Packet	value + 1	0
05C	31 .. 0			unused		
060	0	S_RPT_L0ERST	RO	L0 electronics reset is postponed (pending)		
	1	S_RPT_L01ERST	RO	L0+L1 electronics reset is postponed (pending)		
	2	S_RPT_CALTRG_A	RO	Calibration trigger A is postponed (pending)		
	3	S_RPT_CALTRG_B	RO	Calibration trigger B is postponed (pending)		
	4	S_RPT_CALTRG_C	RO	Calibration trigger C is postponed (pending)		
	5	S_RPT_PERCMD	RO	Periodic command is postponed (pending)		
	6	S_IP_FIFO_FULL_CONT	RO	IP FIFO full continuously		
	7	S_IP_FIFO_FULL_INST	RO	IP FIFO got full instantaneously	Reset by counter reset	
	8	S_ERR_PWR_CONT	RO	Power error continuous		
	9	S_ERR_PWR_INST	RO	Power error instantaneously	Reset by counter reset	
	10	S_TTC_READY	RO	TTCrx mezzanine ready	If TTCrx mezzanine is plugged	
064	31 .. 0	RST_SEL_CNT		Reset selected counters	One bit per counter	
068	31 .. 0	C_BCLK1	RO	Number of bunch clocks		
06C	61 .. 32	C_BCLK2	RO			
070	31 .. 0	C_BCR	RO	Number of bunch counter resets		
074	31 .. 0	C_ECR	RO	Number of event counter resets		
078	31 .. 0	C_L0ERST	RO	Number of L0 electronics resets		
07C	31 .. 0	C_L01ERST	RO	Number of L0+L1 electronics resets		
080	31 .. 0	C_CALCMD_A	RO	Number of calibration commands A sent		
084	31 .. 0	C_CALCMD_B	RO	Number of calibration commands B sent		
088	31 .. 0	C_CALCMD_C	RO	Number of calibration commands C sent		
08C	31 .. 0	C_PERCMD	RO	Number of periodic commands sent		
090	31 .. 0	C_IP_BRDCST	RO	Number of L1 IP destinations sent		
094	31 .. 0			unused		
098	15 .. 0	D_IP_BRDCST	RO	Current IP broadcast frame		
09C	31 .. 0	C_TTC_TRGCMD	RO	Number of trigger commands received via TTC		
0A0	31 .. 0	C_TTC_L0ERST	RO	Number of L0 electronics reset received via TTC		
0A4	31 .. 0	C_TTC_L01ERST	RO	Number of L0+L1 electronics reset received via TTC		
0A8	31 .. 0	C_TTC_CALIB	RO	Number of calibration commands received via TTC		
0AC	31 .. 0	C_TTC_OTHERS	RO	Number of other commands received via TTC		
0B0	31 .. 0	C_TTC_TRGTYPE_0	RO	Number of trigger types 0 received via TTC		
0B4	31 .. 0	C_TTC_TRGTYPE_1	RO	Number of trigger types 1 received via TTC		
0B8	31 .. 0	C_TTC_TRGTYPE_2	RO	Number of trigger types 2 received via TTC		
0BC	31 .. 0	C_TTC_TRGTYPE_3	RO	Number of trigger types 3 received via TTC		

0C0	31..0	C_TTC_TRGTYPE_4	RO	Number of trigger types 4 received via TTC		
0C4	31..0	C_TTC_TRGTYPE_5	RO	Number of trigger types 5 received via TTC		
0C8	31..0	C_TTC_TRGTYPE_6	RO	Number of trigger types 6 received via TTC		
0CC	31..0	C_TTC_TRGTYPE_7	RO	Number of trigger types 7 received via TTC		
0D0	31..0	C_TTC_LCMD	RO	Number of long broadcasts received via TTC		
0D4	31..0	C_TTC_DEST	RO	Number of destination broadcasts received via TTC		
0D8	31..0	C_TTC_FLUSH	RO	Number of flush broadcasts received via TTC		
0DC	31..0	C_TTC_L0TRG	RO	Number of L0 trigger accepts received via TTC		
0E0	31..0	C_TTC_BCR	RO	Number of BCRs received via TTC		
0E4	31..0	C_TTC_ECR	RO	Number of ECRs received via TTC		
0E8	31..0	TST_GPS1_OUT		Test data for FEB	Written by test write in Q_L0 if Q_MP set in test mode	0
0EC	7..0	TST_GPS2_OUT		Test data for FEB	Written by test write in Q_L0 if Q_MP set in test mode	0
0F4	0	TST_MODE		Set Q_MP in test mode		0
0F8	31..0	TST_LBUS		Local bus test register		0
0FC	31..0	VERSION	RO	Version number of the VHDL code	Date in decimal YEAR MO DA HR	