

Document: TN-021_2e



additional document to
L-719e_3.pdf HW-Manual
for phyCORE-TC1797
(Version: sept. 10):

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Description of phyCORE-TC1797 module documentation

The pcb PL2197.x is used for the phyCORE-TC1797 and phyCORE-TC1796 module. So the HW-manual L-719e_3 (HW-Manual for phyCORE-TC1796) can also be used for the phyCORE-TC1797.

Please refer to this Technical Note TN-021 for description of the difference and restriction on the phyCORE-TC1797 module

Revision History

Date	Version numbers	Changes in this manual
02. June -2009	TN-021_1 KSP-0150-1 PCB# PL2197.1	1 st Edition.
27. Sept-2010	TN-021e_2 KSP-0150-1 PCB# PL2197.2	2 nd Edition - description of connector X5 added - description of /BOOT Signal changed for PCB revision PL2197.2

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1.) no OCDS2 signals on TC1797

R60, RN20 – RN23 = 0R -> TC1797 has no OCDS2, pins are connected to GND.

2.) no external Flash is populated on phyCORE-TC1797

J11 = open -> /CS0 is not used for ext. Flash

3.) Ethernet U21 different addressing with TC1797

Jumper J20= 2+3

The following table shows the connection of the address lines of the TC1797 with the Ethernet Controller W5300

required 16Bit Bus Width		16Bit Bus Width
Ethernet W5300 U21	TC1797 pin name	TC1797 logic address LMBA
A0 -> GND		
A1	A8	A9
A2	A0	A1
A3	A1	A2
A4	A2	A3
A5	A3	A4
A6	A4	A5
A7	A5	A6
A8	A6	A7
A9	A7	A8

4.) P9.9/GPIO, P9.10/EMGSTOP, P9.11/GPIO, P9.12/GPIO are not connected to Molex connector X3 , thus this signals are not available.

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5.) Bootconfig HWCFG0 to 7 with dip - switch S2

The following table shows the configurations with the dip- switch S2 for different Boot modes. For additional information about Boot modes of the TC1797 refer to „TC1797 User’s Manual“ chapter „7.1 Start -up Mode Selection“

DIP-switch S2 [7...0]	HWCFG [7..0]	Boot Source	PC Start Address
S2 [7...0] (default) [OFF, OFF,ON,ON,ON,ON, ON, ON]	11xxxxxb (default)	Internal PFLASH memory	A000 0000H
S2 [7...0] (default) [OFF, ON,OFF, ON, OFF, ON, ON, ON]	10101xx0b	ASC0 Bootstrap Loader	
S2 [7...0] [ON, OFF, ON, ON, ON, ON , ON, ON]	010xxxx0b	CAN Bootstrap Loader	

6.) Bootsignal /BOOT on the phyCORE- Connector X3 pin9C

Since PCB revision PL2197.2 the /BOOT signal on the phyCORE- Connector X3 pin9C can be used to activate the ASC0 Bootstraploader.

The following table shows the configuration of the dip- switch S2 to use this function.

This configuration is a combination of “Internal Start from Flash” and “Bootstrap Loader Mode, ASC Bootloader”. The selected Bootmode depend on the state of HWCFG6, that is controlled by the /BOOT signal.

DIP-switch S2 [7...0]	HWCFG [7..0]	Boot Source	PC Start Address
S2 [7...0] (default) [OFF, OFF,OFF, ON, OFF, ON, ON, ON]	11101xx0b	Internal PFLASH memory, when /BOOT= high or not connected (default) ASC0 Bootstrap Loader when /BOOT= low	

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7.) ADC Supply for TC1797

As per datasheet TC1797:

All ADC parameters are optimized for and valid in the range of $VDDM = 5V \pm 5\%$

The Supply and reference voltage of the Fast-ADC is $VDDMF$ and $VFAREF = 3,3V$

jumper	default	function
J49		connects VAREF2 reference voltage with the ADC supply voltage <i>(refer to jumper j38)</i>
2+3	X	VAREF2 connected to ADC supply voltage <i>(refer to jumper j38)</i>
jumper	default	function
J38		Selection of the ADC supply voltage with the onboard 3,3V or external 5V Caution: an external 5V reference voltage for the ADC is not available on the phyCORE- module and Baseboard
closed	X	ADC is supplied onboard with 3,3V
open		ADC supply is supplied via the reference voltage input pins VAREF0 (X3.80D) und VAREF1 (X3.60D) of the phyCORE- Connector X3. 5V is possible Caution: voltage on VAREF0 and VAREF1 must be the same.

8.) Flex Ray™ channel1 and channel2 signals + 2x GPIO available on connector X5.

Since PCB revision PL2197.2 the Flex Ray™ signals (P0.9 to P0.14) of the TC1797 and two GPIOs (P0.8, P0.15) are available on a separate connector X5 of the phyCORE-TC1797
For the position of the connector X5 refer to page 51 in the HW-Manual L719e_3 for the dimension.

As the ports P0.8 to P0.15 are also connected through RN11 and RN12 to the ADC inputs of the TC1797, RN11 and RN12 must be not populated when using the connector X5.

On the current phyCORE- Tricore baseboard there is no connection with the connector X5 of the phyCORE-TC1797, because no mate connector is provided on the Baseboard

Please contact PHYTEC for information regarding the mate connector of connector X5 on the phyCORE-TC1797



27.09.2010

Pinning comparison of the phyCORE-connector X3 for TC1796 und TC1797 on the phyCORE-TC1796/97 KSP-0150-1 modul

= difference
 = not compatible

Baseboard				Baseboard				Baseboard				Baseboard			
X3A	Name an X3	GPIO/Funktion an TC1797	GPIO/ Funktion an TC1796	X3B	Name an X3	GPIO/Funktion an TC1797	GPIO/Funktion an TC1796	X3C	Name an X3	GPIO/Funktion an TC1797	GPIO/ Funktion an TC1796	X3D	Name an X3	GPIO/ Funktion an TC1797	GPIO/ Funktion an TC1796
1	BUS0	NC	NC	1	BUS1	RTC_CLKOUT	RTC_CLKOUT	1	3V3	3V3	3V3	1	3V3	3V3	3V3
2	GN6	---	---	2	BUS2	P10	P10	2	3V3	3V3	3V3	2	3V3	3V3	3V3
3	BUS3	P11	P11	3	BUS4	P12	P12	3	3V3	3V3	3V3	3	3V3	3V3	3V3
4	BUS5	ESR1	---	4	GN5	---	---	4	SV	NC	NC	4	GN6	---	---
5	BUS6	/CS3	/CS3	5	BUS7	/CS2	/CS2	5	SV	NC	NC	5	---	NC	NC
6	BUS8	/ADV	/ADV	6	BUS9	/CS1	/CS1	6	VBAT	VBAT_IN	VBAT_IN	6	---	NC	NC
7	GN8	---	---	7	BUS10	/RD	/RD	7	GN9	---	---	7	PF1	NC	NC
8	BUS11	/BC0	/BC0	8	BUS12	A22	---	8	PFO	RESOUT	RESOUT	8	WDI	NC	NC
9	BUS13	---	---	9	GN10	---	---	9	BDOT/BOOT	BDOT	BDOT	9	GN11	---	---
10	BUS14	A2	A2	10	BUS15	A1	A3	10	HDRRESET	HDRST	HDRST	10	RESIN	/RESIN	/RESIN
11	BUS16	A2	A4	11	BUS17	A3	A5	11	/PORESET	/PORST	/PORST	11	GPIO0	P80	P80
12	GN12	---	---	12	BUS18	A4	A6	12	GN12	---	---	12	GPIO1	P81	P81
13	BUS19	A5	A7	13	BUS20	A6	A8	13	GPIO2	P82	P82	13	GPIO3	P83	P83
14	BUS21	A7	---	14	GN13	---	---	14	GPIO4	P84	---	14	GN13	---	---
15	BUS22	A8	A10	15	BUS23	A9	A11	15	GPIO5	P85	P85	15	GPIO6	P86	P86
16	BUS24	A10	A12	16	BUS25	A11	A13	16	GPIO7	P87	P87	16	GPIO8	RxD0_TTL	RxD0_TTL
17	GN17	---	---	17	BUS26	A12	A14	17	GN17	---	---	17	GPIO9	TxD0_TTL	TxD0_TTL
18	BUS27	A19	A15	18	BUS28	D0	D0	18	GPIO10	CAN_H1 (P811)	CAN_H1 (P811)	18	GPIO11	CAN_L1	CAN_L1
19	BUS29	D1	D1	19	GN18	---	---	19	GPIO11	RxD1_TTL	RxD1_TTL	19	GN18	---	---
20	BUS30	D2	D2	20	BUS31	D3	D3	20	GPIO13	TxD1_TTL	TxD1_TTL	20	GPIO14	CAN_L0	CAN_L0
21	BUS32	D4	D4	21	BUS33	D5	D5	21	GPIO15	RxD1_RS232	RxD1_RS232	21	GPIO16	CAN_H0	CAN_H0
22	GN22	---	---	22	BUS34	D6	D6	22	GPIO17	TXD0_RS232	TXD0_RS232	22	GPIO17	RxD0_TTL	RxD0_TTL
23	BUS35	D7	D7	23	BUS36	A14	A16	23	GPIO18	TXD1_RS232	TXD1_RS232	23	GPIO19	TXD0_RS232	TXD0_RS232
24	BUS37	A15	A17	24	GN23	---	---	24	GPIO20	SDA1	SDA1	24	GN23	---	---
25	BUS38	A16	A18	25	BUS39	A17	A19	25	GPIO21	SCL1	SCL1	25	GN24	PF4	PF4
26	BUS40	A18	A20	26	BUS41	A19	A21	26	GPIO23	MRST1	MRST1	26	GPIO24	SLSH1	SLSH1
27	GN26	---	---	27	BUS42	A20	A22	27	GN26	---	---	27	GPIO25	MRST0	MRST0
28	BUS43	A21	A23	28	BUS44	D8	D8	28	GPIO26	MSTR1	MSTR1	28	GPIO27	MSTR0	MSTR0
29	BUS45	D9	D9	29	GN27	---	---	29	GPIO28	SCLK1	SCLK1	29	GN27	---	---
30	BUS46	D10	D10	30	BUS47	D11	D11	30	GPIO29	SV_VBUS	SV_VBUS	30	GPIO30	SCLK0	SCLK0
31	BUS48	D12	D12	31	BUS49	D13	D13	31	GPIO31	SCL0	SCL0	31	GPIO32	SLSD0	SLSD0
32	GN28	---	---	32	BUS50	D14	D14	32	GPIO33	---	---	32	GPIO33	SDA0	SDA0
33	BUS51	D15	D15	33	BUS52	/BC1	/BC1	33	GPIO34	E_LINK	E_LINK	33	GPIO35	/RQRTIC	/RQRTIC
34	BUS53	/WAIT	/WAIT	34	GN29	---	---	34	GPIO36	E_SPEED	E_SPEED	34	GN29	---	---
35	BUS54	/CS0	/CS0	35	BUS55	/HLD	/HLD	35	GPIO37	E_RX+	E_RX+	35	GPIO38	E_RX+	E_RX+
36	BUS56	/HLDA	/HLDA	36	BUS57	/BREQ	/BREQ	36	GPIO39	E_TX+	E_TX+	36	GPIO40	E_TX+	E_TX+
37	GN30	---	---	37	BUS58	D16	D16	37	GN30	---	---	37	GPIO41	D+ (USB)	D+ (USB)
38	BUS59	D17	D17	38	BUS60	D18	D18	38	GPIO42	---	---	38	GPIO43	D- (USB)	D- (USB)
39	BUS61	D19	D19	39	GN31	---	---	39	GPIO44	/BRKIN	/BRKIN	39	GN31	---	---
40	BUS62	D20	D20	40	BUS63	D21	D21	40	GPIO45	/BRKOUT	/BRKOUT	40	GPIO46	TDI	TDI
41	BUS64	D22	D22	41	BUS65	D22	D22	41	GPIO47	/TRST	/TRST	41	GPIO48	TD0	TD0
42	GN32	---	---	42	BUS66	D24	D24	42	GN32	---	---	42	GPIO49	TMS	TMS
43	BUS67	D25	D25	43	BUS68	D26	D26	43	GPIO50	CAN_L2 (P812)	CAN_L2 (P812)	43	GPIO51	TCK	TCK
44	BUS69	D27	---	44	GN33	---	---	44	GPIO52	CAN_H2 (P813)	CAN_H2 (P813)	44	GN33	---	---
45	BUS70	D28	D28	45	BUS71	D29	D29	45	GPIO53	CAN_L3 (P814)	CAN_L3 (P814)	45	GPIO54	---	---
46	BUS72	D30	D30	46	BUS73	D31	D31	46	GPIO55	P55	P55	46	GPIO56	P56	P56
47	GN34	---	---	47	BUS74	/CS0MB	/CS0MB	47	GN34	---	---	47	GPIO57	P70	P70
48	BUS75	LAN (CS (WS300))	LAN (CS (WS300))	48	BUS76	MRW	MRW	48	GPIO58	P71	P71	48	GPIO59	P72	P72
49	BUS77	/WR	/WR	49	GN35	---	---	49	GPIO60	P73	P73	49	GN35	---	---
50	BUS78	/BFCLK1	/BFCLK1	50	BUS79	/ADV	/ADV	50	GPIO61	P74	P74	50	GPIO62	P75	P75
51	BUS80	/BFCLK0	/BFCLK0	51	BUS81	/BA4	/BA4	51	GPIO63	P76	P76	51	GPIO64	P77	P77
52	GN36	---	---	52	BUS82	/BC2	/BC2	52	GN36	---	---	52	GPIO65	AN43	AN43
53	BUS83	/CS_RAM2	/CS_RAM2	53	BUS84	/BC3	/BC3	53	GPIO66	AN41	AN41	53	GPIO67	AN42	AN42
54	BUS85	P115	---	54	GN37	---	---	54	GPIO68	AN40	AN40	54	GN37	---	---
55	BUS86	P113	P113	55	BUS87	P114	P114	55	GPIO69	AN39	AN39	55	GPIO70	AN39	AN39
56	BUS88	P111	P111	56	BUS89	P112	P112	56	GPIO71	AN36	AN36	56	GPIO72	AN37	AN37
57	GN38	---	---	57	BUS90	P110	P110	57	GPIO72	---	---	57	GPIO73	AN38	AN38
58	BUS91	P18	P18	58	BUS92	P19	P19	58	GPIO74	AN33	AN33	58	GPIO75	AN34	AN34
59	BUS93	P17	---	59	GN39	---	---	59	GPIO76	AN32	AN32	59	GN39	---	---
60	BUS94	P16	P16	60	BUS95	P15	P15	60	GPIO77	AN31	AN31	60	GPIO78	VAREF1	VAREF1
61	BUS96	P14	P14	61	BUS97	P13	P13	61	GPIO79	AN30	AN30	61	GPIO80	AN29	AN29
62	GN40	---	---	62	BUS98	P315	P315	62	GN40	AGND	AGND	62	GPIO81	AN28	AN28
63	BUS99	P314	P314	63	BUS100	P313	P313	63	GPIO82	AN27	AN27	63	GPIO83	AN28	AN28
64	BUS101	P312	P312	64	GN41	---	---	64	GPIO84	AN25	AN25	64	GN41	AGND	AGND
65	BUS102	P311	P311	65	BUS103	P310	P310	65	GPIO86	AN24	AN24	65	GPIO86	AN23	AN23
66	BUS104	P39	P39	66	BUS105	P38	P38	66	GPIO87	AN22	AN22	66	GPIO88	AN21	AN21
67	GN42	---	---	67	BUS106	P37	P37	67	GPIO88	AGND	AGND	67	GPIO89	AN20	AN20
68	BUS107	P36	P36	68	BUS108	P35	P35	68	GPIO90	AN19	AN19	68	GPIO91	AN18	AN18
69	BUS109	P34	---	69	GN43	---	---	69	GPIO92	AN17	AN17	69	GN43	AGND	AGND
70	BUS110	P33	P33	70	BUS111	P32	P32	70	GPIO93	AN16	AN16	70	GPIO94	AN15	AN15
71	BUS112	P31	P31	71	BUS113	P30	P30	71	GPIO95	AN14	AN14	71	GPIO96	AN13	AN13
72	GN44	---	---	72	BUS114	P215	P215	72	GN44	AGND	AGND	72	GPIO97	AN12	AN12
73	BUS115	P214	P214	73	BUS116	P213	P213	73	GPIO98	AN11	AN11	73	GPIO99	AN10	AN10
74	BUS117	P212	P212	74	GN45	---	---	74	GPIO100	AN9	AN9	74	GN45	AGND	AGND
75	BUS118	P211	P211	75	BUS119	P210	P210	75	GPIO101	AN8	AN8	75	GPIO102	AN7	AN7
76	BUS120	P29	P29	76	BUS121	P28	P28	76	GPIO103	AN6	AN6	76	GPIO104	AN6	AN6
77	GN46	---	---	77	BUS122	P27 (SL507)	P27 (SL507)	77	GN46	AGND	AGND	77	GPIO105	AN4	AN4
78	BUS123	P26 (SL506)	P26 (SL506)	78	BUS124	P25 (SL505)	P25 (SL505)	78	GPIO106	AN3	AN3	78	GPIO107	AN2	AN2
79	BUS125	P24 (SL504)	P24 (SL504)	79	GN47	---	---	79	GPIO108	AN1	AN1	79	GN47	AGND	AGND
80	BUS126	P23 (SL503)	P23 (SL503)	80	BUS127	P22 (SL502)	P22 (SL502)	80	GPIO109	AN0	AN0	80	GPIO110	VAREF0	VAREF0