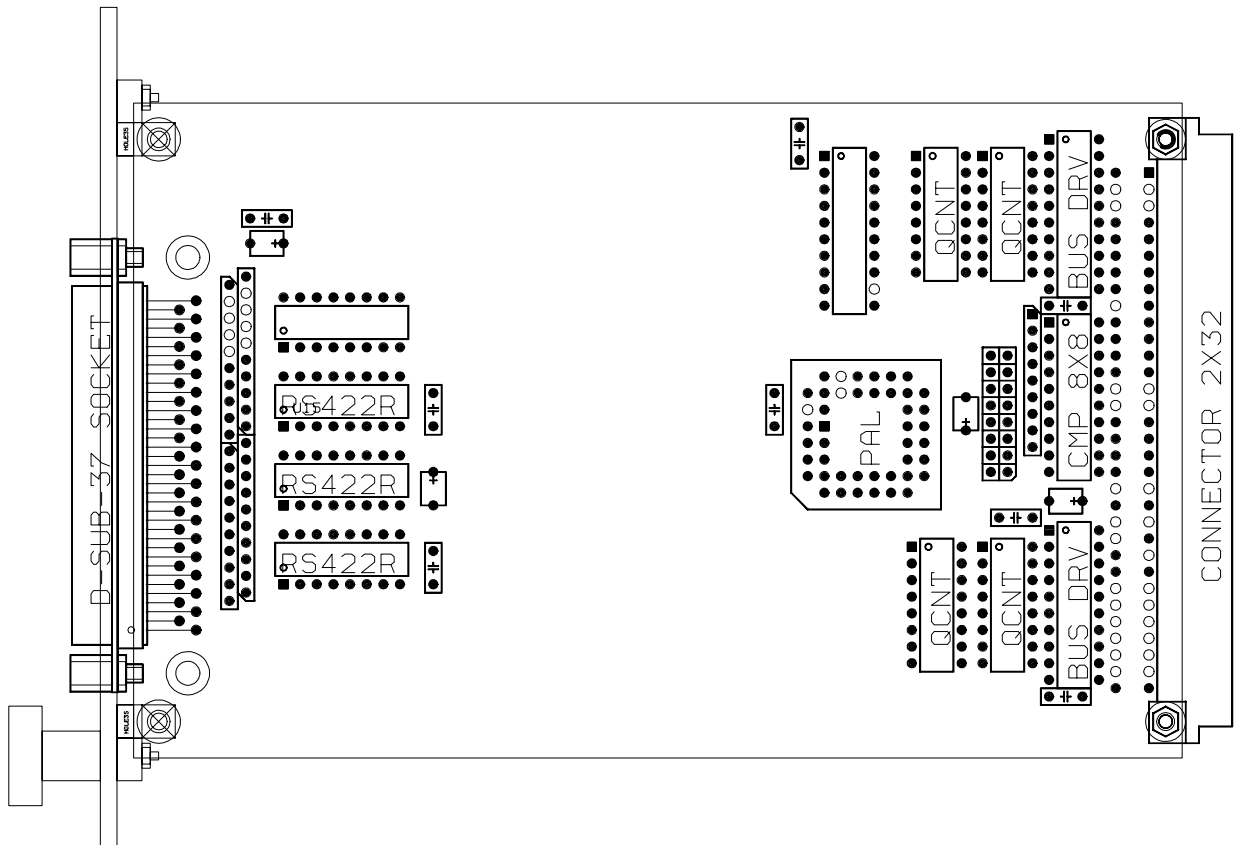


NEW

RUCH
LTD

Step / Dir Interface board IDP4



Features for Step / Dir Interface Board IDP4

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- Step / Direction Interface for 4 axis
- Euro-board 160 x 100 mm, Eurobus connection with 64 pin connector
- D-Sub-37 connector for four Step, Dir, Reset and Ready signals.
- Complete indexer interface for up to 4 stepper or servo-axis (Portal X1,X2,Y,Z)
- 4 channels RS422 Interface
- Base address settings per jumper, multiple boards at the same bus possible

Pin assignment for Step/Dir Board IDP4

P2 37 pin D-Sub Indexer Male Connector, Front view

TTL Output D7	<i>D7</i>	20	⊙	⊙	01	<i>+5V</i>	Supply voltage +5V
TTL Output D5	<i>D5</i>	21	⊙	⊙	02	<i>D6</i>	TTL Output D6
Negative reset pulse axis W	<i>RWM</i>	22	⊙	⊙	03	<i>RWP</i>	Positive reset pulse axis W
Negative reset pulse axis Z	<i>RZM</i>	23	⊙	⊙	04	<i>RZP</i>	Positive reset pulse axis Z
Negative reset pulse axis Y	<i>RYM</i>	24	⊙	⊙	05	<i>RYP</i>	Positive reset pulse axis Y
Negative reset pulse axis X	<i>RXM</i>	25	⊙	⊙	06	<i>RXP</i>	Positive reset pulse axis X
Negative ready signal axis W	<i>GWM</i>	26	⊙	⊙	07	<i>GWP</i>	Positive ready signal axis W
Negative dir pulse axis W	<i>DWM</i>	27	⊙	⊙	08	<i>DWP</i>	Positive dir pulse axis W
Negative step pulse axis W	<i>SWM</i>	28	⊙	⊙	09	<i>SWP</i>	Positive step pulse axis W
Negative ready signal axis Z	<i>GZM</i>	29	⊙	⊙	10	<i>GZP</i>	Positive ready signal axis Z
Negative dir pulse axis Z	<i>DZM</i>	30	⊙	⊙	11	<i>DZP</i>	Positive dir pulse axis Z
Negative step pulse axis Z	<i>SZM</i>	31	⊙	⊙	12	<i>SZP</i>	Positive step pulse axis Z
Negative ready signal axis Y	<i>GYM</i>	32	⊙	⊙	13	<i>GYP</i>	Positive ready signal axis Y
Negative dir pulse axis Y	<i>DYM</i>	33	⊙	⊙	14	<i>DYP</i>	Positive dir pulse axis Y
Negative step pulse axis Y	<i>SYM</i>	34	⊙	⊙	15	<i>SYP</i>	Positive step pulse axis Y
Negative ready signal axis X	<i>GXM</i>	35	⊙	⊙	16	<i>GXP</i>	Positive ready signal axis X
Negative dir pulse axis X	<i>DXM</i>	36	⊙	⊙	17	<i>DXP</i>	Positive dir pulse axis X
Negative step pulse axis X	<i>SXM</i>	37	⊙	⊙	18	<i>SXP</i>	Positive step pulse axis X
			⊙	⊙	19	<i>GND</i>	Ground

All step, dir, ready, reset voltages are differential RS422 voltages with return GND.
 Step, dir, reset signals are inputs (from indexer), ready signals are outputs (to indexer).
 Connector is optimized for ribbon cable montage

Pin assignment for Step/Dir Board IDP4F

P2 37 pin D-Sub Indexer Female Connector, Front view

TTL Output D7	<i>D7</i>	37
TTL Output D5	<i>D5</i>	36
Negative reset pulse axis W	<i>RWM</i>	35
Negative reset pulse axis Z	<i>RZM</i>	34
Negative reset pulse axis Y	<i>RYM</i>	33
Negative reset pulse axis X	<i>RXM</i>	32
Negative ready signal axis W	<i>GWM</i>	31
Negative dir pulse axis W	<i>DWM</i>	30
Negative step pulse axis W	<i>SWM</i>	29
Negative ready signal axis Z	<i>GZM</i>	28
Negative dir pulse axis Z	<i>DZM</i>	27
Negative step pulse axis Z	<i>SZM</i>	26
Negative ready signal axis Y	<i>GYM</i>	25
Negative dir pulse axis Y	<i>DYM</i>	24
Negative step pulse axis Y	<i>SYM</i>	23
Negative ready signal axis X	<i>GXM</i>	22
Negative dir pulse axis X	<i>DXM</i>	21
Negative step pulse axis X	<i>SXM</i>	20

⊙	19	<i>+5V</i>	Supply voltage +5V
⊙	18	<i>D6</i>	TTL Output D6
⊙	17	<i>RWP</i>	Positive reset pulse axis W
⊙	16	<i>RZP</i>	Positive reset pulse axis Z
⊙	15	<i>RYP</i>	Positive reset pulse axis Y
⊙	14	<i>RXP</i>	Positive reset pulse axis X
⊙	13	<i>GWP</i>	Positive ready signal axis W
⊙	12	<i>DWP</i>	Positive dir pulse axis W
⊙	11	<i>SWP</i>	Positive step pulse axis W
⊙	10	<i>GZP</i>	Positive ready signal axis Z
⊙	09	<i>DZP</i>	Positive dir pulse axis Z
⊙	08	<i>SZP</i>	Positive step pulse axis Z
⊙	07	<i>GYP</i>	Positive ready signal axis Y
⊙	06	<i>DYP</i>	Positive dir pulse axis Y
⊙	05	<i>SYP</i>	Positive step pulse axis Y
⊙	04	<i>GXP</i>	Positive ready signal axis X
⊙	03	<i>DXP</i>	Positive dir pulse axis X
⊙	02	<i>SXP</i>	Positive step pulse axis X
⊙	01	<i>GND</i>	Ground

All step, dir, ready, reset voltages are differential RS4222 voltages with return GND.
 Step, dir, reset signals are inputs (from indexer), ready signals are outputs (to indexer).
 Connector is optimized for ribbon cable montage

Base address settings for Step/Dir Board IDP4 by Jumper J11-J04

Jumper	J11	J10	J09	J08	J07	J06	J05	J04	Address base
Address bit	A11	A10	A09	A08	A07	A06	A05	A04	
	Off	Off	Off	Off	Off	Off	Off	Off	810FF0
	Off	Off	Off	Off	Off	Off	Off	On	810FE0
	Off	Off	Off	Off	Off	Off	On	Off	810FD0
	Off	Off	Off	Off	Off	On	Off	Off	810FB0
	Off	Off	Off	Off	On	Off	Off	Off	810F70
	Off	Off	Off	On	Off	Off	Off	Off	810EF0
	Off	Off	On	Off	Off	Off	Off	Off	810DF0
	Off	On	Off	Off	Off	Off	Off	Off	810BF0
	On	Off	Off	Off	Off	Off	Off	Off	8107F0

On – Jumper is set (related address bit is 0), Off – Jumper is removed (related address bit is 1)

Default setting is J4-J11 Off Off Off Off Off Off Off **On**, Address base 810FE0 (for C32F DSP)

Jumper J04 is upper Jumper (marked with S1 on component side of PCB), J11 is downer Jumper

Address map for default address setting and DSP C32F

		Read		Write					
Address	Data bits	15-8	7-0	15-8	7-4	3	2	1	0
810FE0		QCYL	QCWL	-	-	RDX	RDY	RDZ	RDW
810FE1		QCYH	QCWH	-	-				
810FE2		QCXL	QCZL	-	-				
810FE3		QCXH	QCZH	-	-				
810FE4		-	RFX	-	-				WFX
810FE5		-	RFY	-	-				WFY
810FE6		-	RFZ	-	-				WFZ
810FE7		-	RFW	-	-				WFW

Legend

QCYL -> QC=Quadrature counter HCTL2016; Y=Axis Y, L=Low Byte

QCWH -> QC=Quadrature counter; W=Axis W, H=High Byte

RFX -> Read flag for axis X in Bit D0, WFW -> write flag for axis W in Bit D0

RDX -> Ready bit for axis X, by writing 1 by DSP to this bit Ready Signal for external indexer will be set on connector

By write flags it are set to 1, by external reset signal from Connector flags will be cleared and quadrature counter will be reset to zero

Test cable for Pulse Simulator LPT PC <-> IDP4

Recommended test cable IDP4 <-----> LPT Port PC
For using PC as Indexer-Simulator

D-Sub-37F	Pin	Cable IDP4 <-> LPT PC	Pin	D-Sub-25M
GND	19	>----->	25	GND
SXP	18	>----->	02	DD0
DXP	17	>----->	03	DD1
SYP	15	>----->	04	DD2
DYP	14	>----->	05	DD3
SZP	12	>----->	06	DD4
DZP	11	>----->	07	DD5
SWP	09	>----->	08	DD6
DWP	08	>----->	09	DD7
GXP	16	>----->	11	BUSY
GYP	13	>----->	15	/ERR
GZP	10	>----->	10	PE
GWP	07	>----->	13	SEL
RXP	06	>----->	14	/AF
RYP	05	>----->	16	INIT
RZP	04	>----->	17	SLIN

Test cable for Pulse Simulator LPT PC <-> IDP4

