

# ASIC Boards Status

M.Contalbrigo

R.Malaguti

P.Musico

M.Turisini

Dario Orcchini

Marco Mirazita

Vincenzo Lucherini

---

Rich Meeting, 2014 March 21<sup>th</sup>

---

# Status

- 3 ASIC electrical scheme complete,
- 2ASIC in progress
- Spacers and fixing screws positioning
- Boards dimension
- HV connector proposal
- HSTL Standard
- Test Pulse(s)
- ASIC board Manual (mid April '14)
- ADAPTER Board Manual (mid April '14)

## ***HSTL:***

- VH = 1,8 Volt
- VL = 0,0 Volt

# MAROC internal ADC

Name	LEVEL	MAROCpin
TrasmitON_1	HSTL	114
TrasmitON_2	HSTL	114
TrasmitON_3	HSTL	114
OUT_ADC_1	HSTL	115
OUT_ADC_2	HSTL	115
OUT_ADC_3	HSTL	115
start_ADCb	TTL	116
RST_ADCb_R	TTL	184
CKb_40M	LVDS	186
CK_40M	LVDS	188

We never used the internal ADC

Datasheet reports a textual description and temporal diagram

64 Ramp converters - 12 bit - 40MHz  
Ramp is shared (also GreyCounter is shared)

Readout at 40 MHz  
Start automatically after last conversion  
(TrasmitON goes high)

***To be verified with french colleagues!***

# Connectors positioning

Connectors positioning on Roberto's design for 3ASIC version:

	X[mm]	Y[mm]	Rot [degree]		Model
J1	-53.0000	2.0000	270	m	ERM8-040-X-X-DV
J7	0.0000	2.0000	270	m	ERM8-040-X-X-DV
J8	53.0000	2.0000	270	m	ERM8-040-X-X-DV
J5	23.5000	-21.0000	180		ERF5-070-X-X-DV
J6	-23.5000	-21.0000	180		ERF5-070-X-X-DV

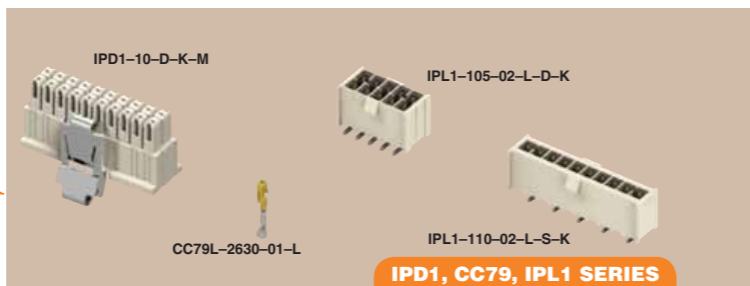
Origin of the reference system is the center of the central MaPMT  
X,Y referred to connector's center.

“m” means that the component is on MaPMT side (not FPGA side)

# (Small) HV connector



(2,54 mm) .100"



IPD1, CC79, IPL1 SERIES

## DISCRETE WIRE COMPONENTS & TOOLING

### SPECIFICATIONS

For complete specifications see [www.samtec.com?IPD1](http://www.samtec.com?IPD1) or [www.samtec.com?CC79](http://www.samtec.com?CC79)

### TOOLING

- Hand tool (20-24 AWG): CAT-HT-179-2024-11
- Hand tool (26-30 AWG): CAT-HT-179-2630-11
- Mini Applicator (20-24 AWG): CAT-MA-179-2024-XX-01
- Mini Applicator (26-30 AWG): CAT-MA-179-2630-XX-01

TYPE	POSITIONS PER ROW	ROW OPTION	K	LATCH OPTION	TYPE	WIRE GAUGE	01	PLATING OPTION
IPD1 = Body, Loose	-02, -03, -04, -05, -06, -08, -10, -12, -15, -16, -20, -25 (Standard sizes)	-S = Single Row -D = Double Row	-K = Keyed Polarization	-M = Metal Latch (Metal for more rugged environments) (-02, -05 & -10 positions only) (Leave blank for plastic latch)	CC79L = Contact, Loose	-2630 = 26 to 30 AWG -2024 = 20 to 24 AWG		-L = 10µ" (0,25 µm) Gold on contact, Tin on tail

Insulator Material: Nylon 66

Contact Material: Phosphor Bronze

Not easy to find on the market

OnBoard: SAMTEC IPL1-103-02-L-S-K (female)

Cable: SAMTEC IPD1-03-S-K (male)

Voltage and current monitor at rack (included in the HV module)

Mates with: MMSD, MMSS, MMSDT, MMSST (Does not mate with IPS1)

### SPECIFICATIONS

For complete specifications [www.samtec.com?IPL1](http://www.samtec.com?IPL1)

Insulator Material: Natural LCP  
Terminal Material: Phosphor Bronze  
Plating: Sn or Au over 50µ" (1,27 µm) Ni  
Operating Temp Range: -55°C to +125°C  
Voltage Rating: 675 VAC/954 VDC  
RoHS Compliant: Yes

Processing:  
Lead-Free Solderable: Yes  
-S & -D (-02 Lead Style)  
SMT Lead Coplanarity: (0,10 mm) .004" max (02-05) (0,13 mm) .005" max (06-10) (0,15 mm) .006" max (11-25)  
-SH SMT Lead Coplanarity: (0,15 mm) .006" max (02-25)

### RECOGNITIONS

For complete scope of recognitions see [www.samtec.com/quality](http://www.samtec.com/quality)



Note: Some lengths, styles and options are non-standard, non-returnable.

IPL1	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTION	K
		02, 03, 04, 05, 06, 08, 10, 12, 15, 16, 20, 25 (Standard sizes)	-01 = Through-hole -02 = Surface Mount	-L = 10µ" (0,25 µm) Gold on contact, Matte Tin on tail	-S = Single Row Vertical -SH = Single Row Horizontal (-02 lead style only) -D = Double Row Vertical	-RA = Right Angle (-01 lead style only)	-K = Keyed Polarization

SH = No. of positions x (2,54) .100 + (4,06) .160

Also Available (MOQ Required):

- Other sizes
- With or without Plug Polarization
- Guide post holes
- Other platings
- Contact Samtec.

Due to technical progress, all designs, specifications and components are subject to change without notice.

WWW.SAMTEC.COM

SAMTEC USA • Tel: +1-800-SAMTEC-9 or +1-812-944-6733 SAMTEC NORTHERN CALIFORNIA • Tel: +1-408-395-5900 SAMTEC SOUTHERN CALIFORNIA • Tel: +1-800-726-8329  
SAMTEC SOUTH AMERICA • Tel: +55 31 3786 3227 SAMTEC UNITED KINGDOM • Tel: +44 01236 739292 SAMTEC GERMANY • Tel: +49 (0) 89 / 89460-0  
SAMTEC FRANCE • Tel: +33 1 69 95 26 00 SAMTEC ITALY • Tel: +39 039 8900337 SAMTEC NORIC/BALTIC • Tel: +46 8 4477280 SAMTEC BENELUX • Tel: +44 01236 739292  
SAMTEC ISRAEL • Tel: +972 3 7526600 SAMTEC INDIA • Tel: +91 80 3272 1612 SAMTEC ANZ • Tel: +613 9580 0683 SAMTEC SINGAPORE • Tel: +65 6745 5955 SAMTEC JAPAN • Tel: +81 45 475 1385  
SAMTEC SHANGHAI • Tel: +86 21 6083 3766 SAMTEC SHENZHEN • Tel: +86 755 83776780 SAMTEC TAIWAN • Tel: +886 2 2735 6109 SAMTEC HONG KONG • Tel: +852 26904858 SAMTEC KOREA • Tel: +82 31 717 5685