

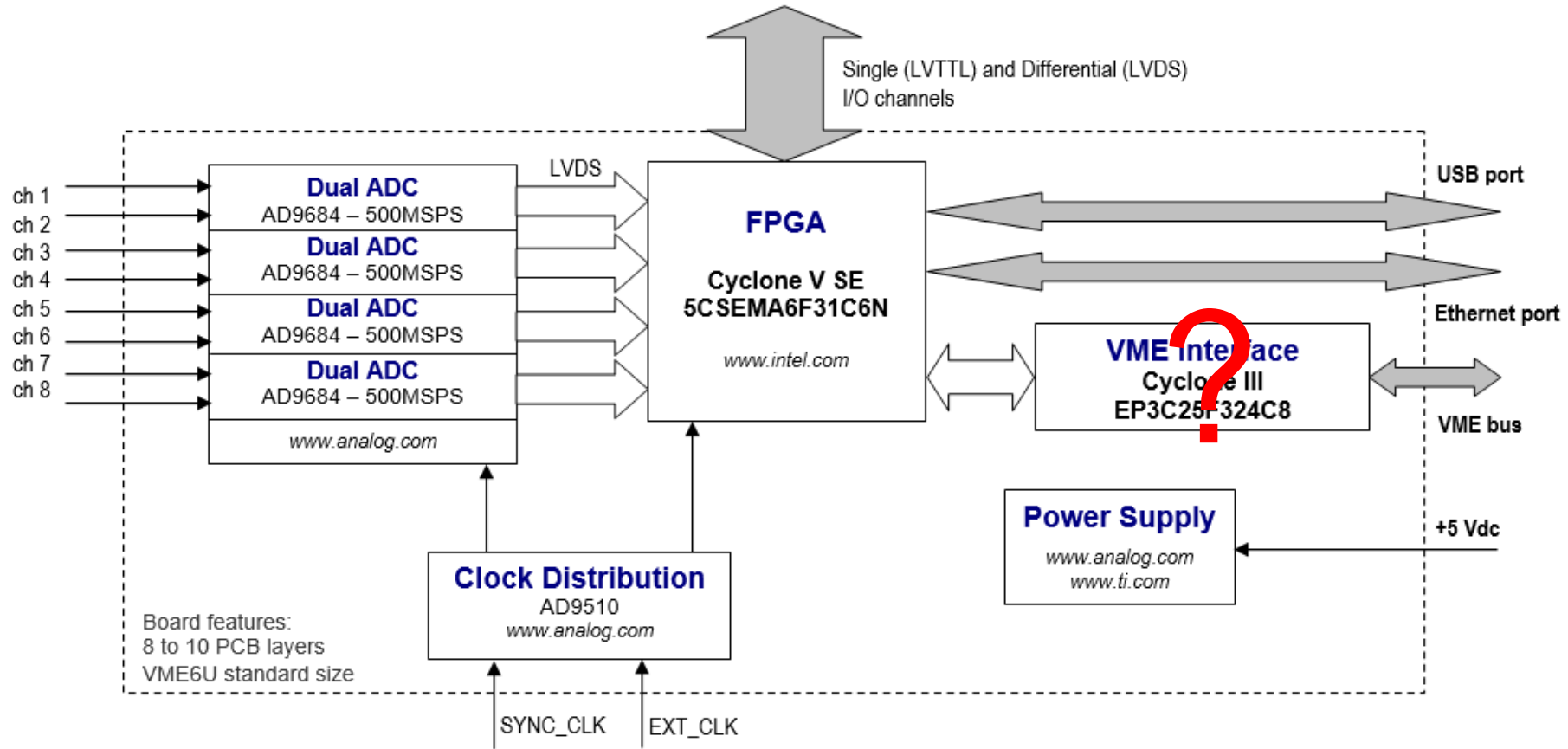
# CYGNO

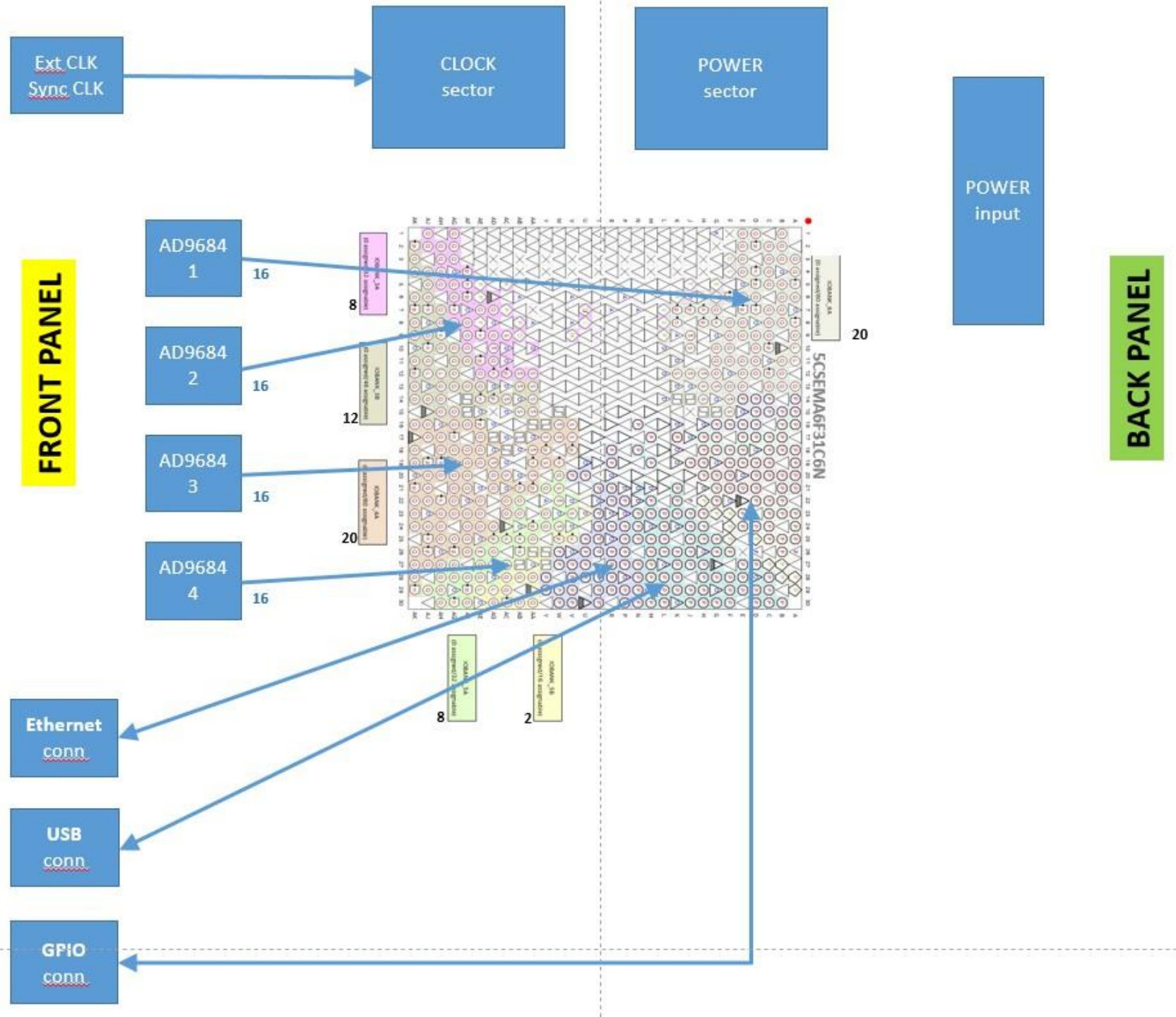
## Photomultiplier DAQ development

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- Survey and selection of technologies/devices: ADC, FPGA,  $\mu$ C. **DONE**
- Drawing electrical schematics: analog input circuit, ADC connections, microcontroller circuit. **DONE**
- Survey of other FPGA due to software licence issue (Quartus Prime). New FPGA family selected: **Cyclone V**. **DONE**
- Second ADC option selected due to transceiver speed limitation in Cyclone V.
- Drawing electrical schematics: FPGA circuit. **DOING**
- Defining and drawing ADC to FPGA data buses (16 x 4 LVDS channels). **DOING->DONE**
- Learning how to use the ARM processor in the FPGA to implement the Ethernet and USB interfaces. **DOING**





# ADCs to FPGA connections

**1<sup>st</sup> layout view**  
-  
**only component placement**

	ADC signal	ADC pin	Schem Name	FPGA pin	Signal Name	FPGA pin	Signal Name	FPGA pin	Signal Name	FPGA pin	Signal Name
				ADC1	Bank 8A	ADC2	Bank 3A	ADC3	3B-4A	ADC4	3B-4A 5A-5B
					DIFFT		DIFFT		DIFFB		DIFFR- DIFFT
1	DCO+	K14	DCPx	K14	9p	AF14	31p	AC18	55p	Y26	23p
2	DCO-	K13	DCNx	J14	9n	AF15	31n	AD17	55n	Y27	23n
3	STS+	L14	STPx	F9	39p	AG1	10p	AH13	30p	AG15	38p
4	STS-	L13	STNx	F8	39n	AH2	10n	AH14	30n	AH15	38n
5	D13+	M14	DP13x	H8	17p	AJ1	14p	V16	43p	AA21	79p
6	D13-	M13	DN13x	G8	17n	AJ2	14n	W16	43n	AB21	79n
7	D12+	P14	DP12x	J7	25p	AF4	7p	V17	51p	AC22	78p
8	D12-	N14	DN12x	H7	25n	AF5	7n	W17	51n	AC23	78n
9	D11+	P13	DP11x	K7	33p	AD7	5p	Y17	59p	AE22	70p
10	D11-	N13	DN11x	K8	33n	AE7	5n	AA18	59n	AE23	70n
11	D10+	P12	DP10x	J10	37p	AC9	9p	AE17	42p	AF23	66p
12	D10-	N12	DN10x	J9	37n	AD10	3n	AF18	42n	AF24	66n
13	D9+	P11	DP9x	G10	35p	AF11	18p	AJ17	50p	W20	4p
14	D9-	N11	DN9x	F10	35n	AG11	18n	AK18	50n	Y21	4n
15	D8+	P10	DP8x	E9	11p	AJ11	34p	V18	71p	W21	6p
16	D8-	N10	DN8x	D9	11n	AK11	34n	W19	71n	W22	6n
17	D7+	P9	DP7x	K12	29p	AA12	11p	Y18	63p	AB22	8p
18	D7-	N9	DN7x	J12	29n	AB12	11n	AA19	63n	AB23	8n
19	D0+	P6	DP0x	H13	21p	AC12	15p	AE18	58p	V23	13p
20	D0-	N6	DN0x	H12	21n	AD12	15n	AE19	58n	W24	13n
21	D6+	P5	DP6x	G12	31p	AD11	1p	Y19	75p	Y23	11p
22	D6-	N5	DN6x	G11	31n	AE12	1n	AA20	75n	Y24	11n
23	D5+	P4	DP5x	F11	23p	AA13	19p	AC20	67p	AA24	9p
24	D5-	N4	DN5x	E11	23n	AB13	19n	AD19	67n	AB25	9n
25	D4+	P3	DP4x	D11	7p	AE13	22p	AF19	54p	AD25	2p
26	D4-	N3	DN4x	D10	7n	AF13	22n	AG20	54n	AC25	2n
27	D3+	P2	DP3x	H14	13p	AG12	26p	AD20	74p	AD26	15p
28	D3-	N2	DN3x	G13	13n	AG13	26n	AD21	74n	AC27	15n
29	D2+	P1	DP2x	F13	15p	AA14	35p	AF20	62p	W25	17p
30	D2-	N1	DN2x	E13	15n	AA15	35n	AF21	62n	V25	17n
31	D1+	M1	DP1x	E12	19p	AB15	27p	AG21	46p	AB30	19p
32	D1-	M2	DN1x	D12	19n	AC14	27n	AH20	46n	AA30	19n

**FRONT PANEL**

