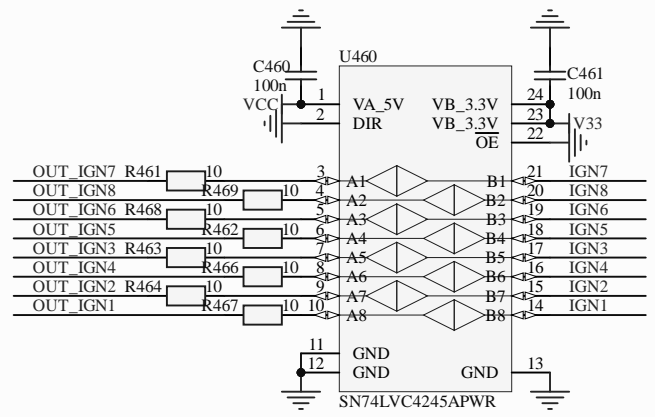
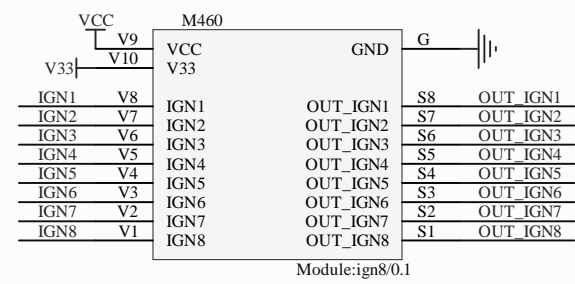


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 File: hellen1-vr-discrete.kicad_sch

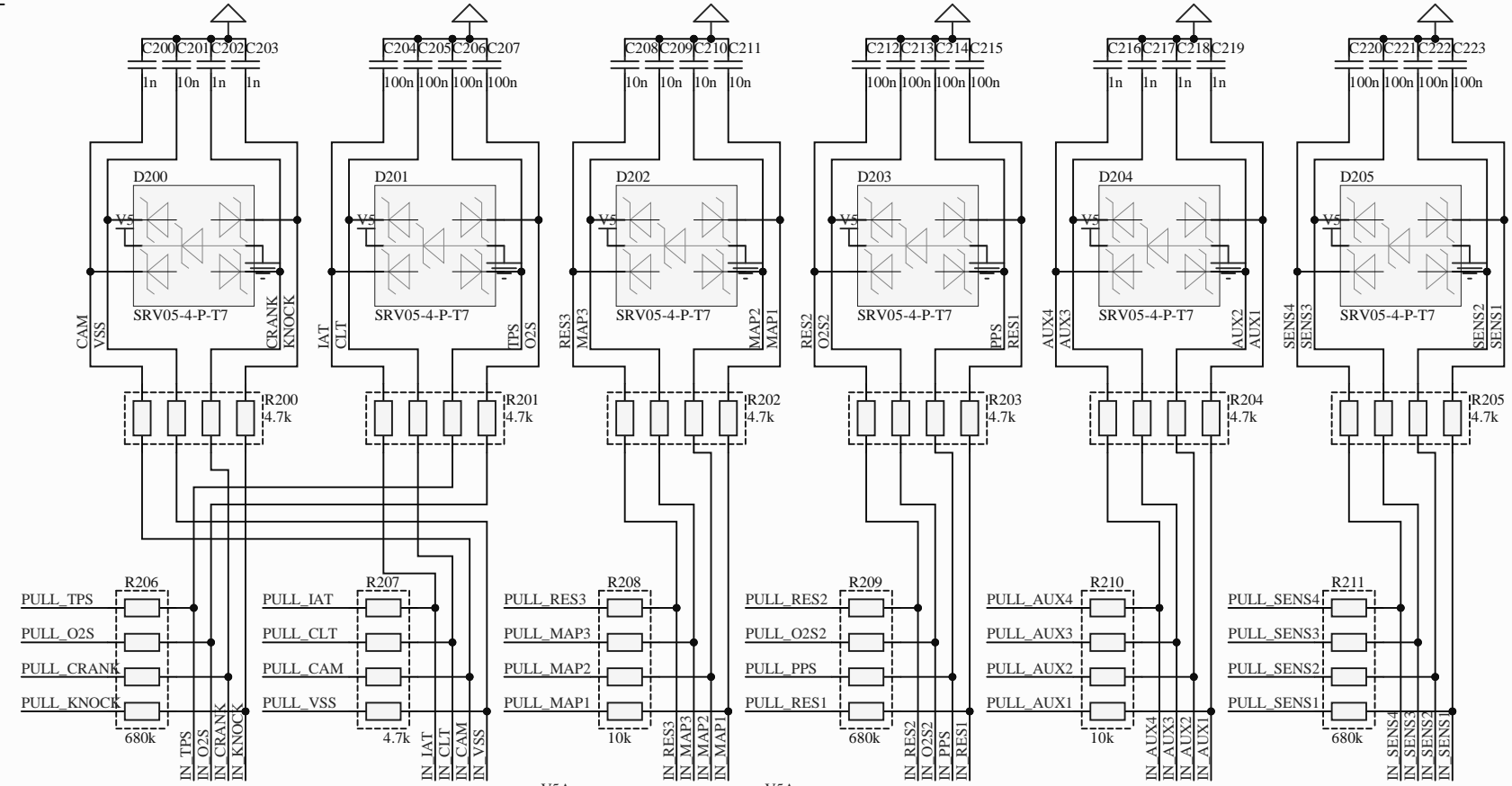
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 KiCad E.D.A. kicad (5.99.0-10483-ga6ad7a4a70)

Rev:
 Id: 1/1



M200D			
PULL_CRANK J21	PULL_CRANK	PULL_MAP1	J14 PULL_MAP1
PULL_CAM J17	PULL_CAM	PULL_MAP2	J13 PULL_MAP2
PULL_VSS J18	PULL_VSS	PULL_MAP3	J12 PULL_MAP3
PULL_TPS J19	PULL_TPS	PULL_AUX1	J10 PULL_AUX1
PULL_PPS J5	PULL_PPS	PULL_AUX2	J9 PULL_AUX2
PULL_IAT J15	PULL_IAT	PULL_AUX3	J8 PULL_AUX3
PULL_CLT J16	PULL_CLT	PULL_AUX4	J7 PULL_AUX4
PULL_O2S J20	PULL_O2S	PULL_SENS1	J26 PULL_SENS1
PULL_O2S2 J4	PULL_O2S2	PULL_SENS2	J25 PULL_SENS2
		PULL_SENS3	J24 PULL_SENS3
		PULL_SENS4	J23 PULL_SENS4
PULL_RES1 J6	PULL_RES1		
PULL_RES2 J3	PULL_RES2		
PULL_RES3 J11	PULL_RES3	PULL_KNOCK	J22 PULL_KNOCK

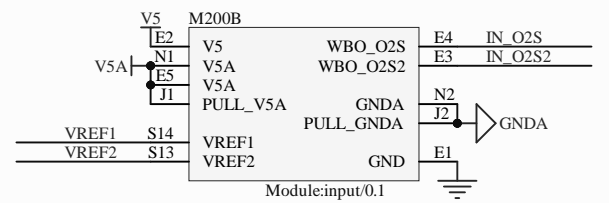
Module:input/0.1



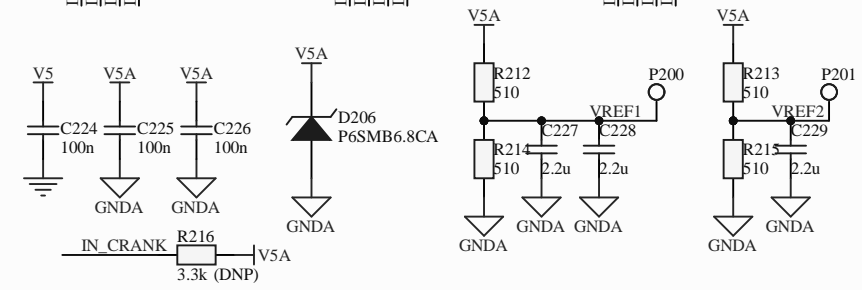
M200C		M200A	
IN_CRANK S8	IN_CRANK	N21 CRANK	CRANK
IN_CAM S5	IN_CAM	N19 CAM	CAM
IN_VSS S6	IN_VSS	N20 VSS	VSS
IN_TPS S10	IN_TPS	N17 TPS	TPS
IN_PPS S24	IN_PPS	N5 PPS	PPS
IN_IAT S16	IN_IAT	N15 IAT	IAT
IN_CLT S15	IN_CLT	N16 CLT	CLT
IN_O2S S9	IN_O2S	N18 O2S	O2S
IN_O2S2 S25	IN_O2S2	N4 O2S2	O2S2
IN_RES1 S23	IN_RES1	N6 RES1	RES1
IN_RES2 S26	IN_RES2	N3 RES2	RES2
IN_RES3 S22	IN_RES3	N11 RES3	RES3
IN_MAP1 S11	IN_MAP1	N14 MAP1	MAP1
IN_MAP2 S12	IN_MAP2	N13 MAP2	MAP2
IN_MAP3 S19	IN_MAP3	N12 MAP3	MAP3
IN_AUX1 S17	IN_AUX1	N10 AUX1	AUX1
IN_AUX2 S18	IN_AUX2	N9 AUX2	AUX2
IN_AUX3 S20	IN_AUX3	N8 AUX3	AUX3
IN_AUX4 S21	IN_AUX4	N7 AUX4	AUX4
IN_SENS1 S1	IN_SENS1	N26 SENS1	SENS1
IN_SENS2 S2	IN_SENS2	N25 SENS2	SENS2
IN_SENS3 S3	IN_SENS3	N24 SENS3	SENS3
IN_SENS4 S4	IN_SENS4	N23 SENS4	SENS4
IN_KNOCK S7	IN_KNOCK	N22 KNOCK	KNOCK

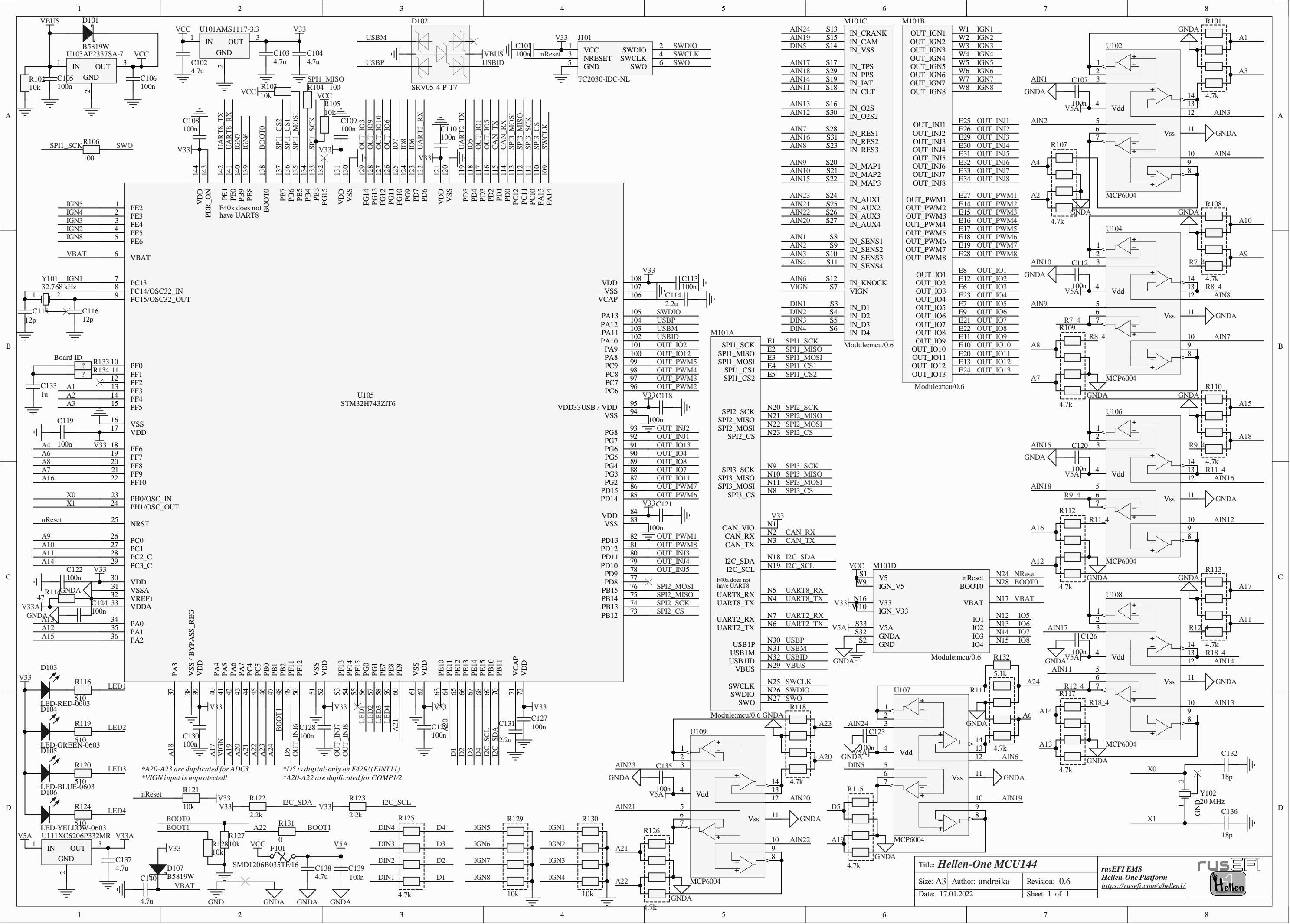
Module:input/0.1

Module:input/0.1



Module:input/0.1





IGN5	1	PE2	VDD_ON	144	143
IGN4	2	PE3	PE1	142	141
IGN3	3	PE4	PE0	140	139
IGN2	4	PE5	IGN6	138	137
IGN8	5	PE6	IGN7	136	135
VBAT	6	VBAT	BOOT0	134	133
Y101_IGN1	7	PC13	PB7	132	131
PC14/OSC32_IN	8	PC15/OSC32_OUT	PB6	130	129
PF0	10	PF1	PB5	128	127
PF2	12	PF3	PB4	126	125
PF4	14	PF5	PB3	124	123
VSS	16	VDD	PG15	122	121
PF6	18	PF7	PG14	120	119
PF8	20	PF9	PG13	118	117
PF10	22	PH0/OSC_IN	PG12	116	115
PH1/OSC_OUT	24	NRST	PG11	114	113
PC0	26	PC1	PG10	112	111
PC2_C	28	PC3_C	PG9	110	109
VDD	30	VSSA	PD6	108	107
VREF+	32	VDDA	PD5	106	105
PA0	34	PA1	PD4	104	103
PA2	36	PA3	PD3	102	101
VSS / BYPASS_REG	37	VDD	PD2	100	99
PA4	38	PA5	PD1	98	97
VIGN	39	PA6	PD0	96	95
PA7	40	PA8	PC6	94	93
PA9	41	PA10	PG8	92	91
PA11	42	PA12	PG7	90	89
PA13	43	PA14	PG6	88	87
PA15	44	PA16	PG5	86	85
PC4	45	PC5	PG4	84	83
PC6	46	PC7	PG3	82	81
PC8	47	PC9	PG2	80	79
PC10	48	PC11	PG1	78	77
PC12	49	PC13	PG0	76	75
PC14	50	PC15	PG15	74	73
PC16	51	PC17	PG14	72	71
PC18	52	PC19	PG13	70	69
PC20	53	PC21	PG12	68	67
PC22	54	PC23	PG11	66	65
PC24	55	PC25	PG10	64	63
PC26	56	PC27	PG9	62	61
PC28	57	PC29	PG8	60	59
PC30	58	PC31	PG7	58	57
PC32	59	PC33	PG6	56	55
PC34	60	PC35	PG5	54	53
PC36	61	PC37	PG4	52	51
PC38	62	PC39	PG3	50	49
PC40	63	PC41	PG2	48	47
PC42	64	PC43	PG1	46	45
PC44	65	PC45	PG0	44	43
PC46	66	PC47	PG15	42	41
PC48	67	PC49	PG14	40	39
PC50	68	PC51	PG13	38	37
PC52	69	PC53	PG12	36	35
PC54	70	PC55	PG11	34	33
PC56	71	PC57	PG10	32	31
PC58	72	PC59	PG9	30	29
PC60	73	PC61	PG8	28	27
PC62	74	PC63	PG7	26	25
PC64	75	PC65	PG6	24	23
PC66	76	PC67	PG5	22	21
PC68	77	PC69	PG4	20	19
PC70	78	PC71	PG3	18	17
PC72	79	PC73	PG2	16	15
PC74	80	PC75	PG1	14	13
PC76	81	PC77	PG0	12	11
PC78	82	PC79	PG15	10	9
PC80	83	PC81	PG14	8	7
PC82	84	PC83	PG13	6	5
PC84	85	PC85	PG12	4	3
PC86	86	PC87	PG11	2	1
PC88	87	PC89	PG10	0	0
PC90	88	PC91	PG9	0	0
PC92	89	PC93	PG8	0	0
PC94	90	PC95	PG7	0	0
PC96	91	PC97	PG6	0	0
PC98	92	PC99	PG5	0	0
PC100	93	PC101	PG4	0	0
PC102	94	PC103	PG3	0	0
PC104	95	PC105	PG2	0	0
PC106	96	PC107	PG1	0	0
PC108	97	PC109	PG0	0	0
PC110	98	PC111	PG15	0	0
PC112	99	PC113	PG14	0	0
PC114	100	PC115	PG13	0	0
PC116	101	PC117	PG12	0	0
PC118	102	PC119	PG11	0	0
PC120	103	PC121	PG10	0	0
PC122	104	PC123	PG9	0	0
PC124	105	PC125	PG8	0	0
PC126	106	PC127	PG7	0	0
PC128	107	PC129	PG6	0	0
PC130	108	PC131	PG5	0	0
PC132	109	PC133	PG4	0	0
PC134	110	PC135	PG3	0	0
PC136	111	PC137	PG2	0	0
PC138	112	PC139	PG1	0	0
PC140	113	PC141	PG0	0	0
PC142	114	PC143	PG15	0	0
PC144	115	PC145	PG14	0	0
PC146	116	PC147	PG13	0	0
PC148	117	PC149	PG12	0	0
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PC156	121	PC157	PG8	0	0
PC158	122	PC159	PG7	0	0
PC160	123	PC161	PG6	0	0
PC162	124	PC163	PG5	0	0
PC164	125	PC165	PG4	0	0
PC166	126	PC167	PG3	0	0
PC168	127	PC169	PG2	0	0
PC170	128	PC171	PG1	0	0
PC172	129	PC173	PG0	0	0
PC174	130	PC175	PG15	0	0
PC176	131	PC177	PG14	0	0
PC178	132	PC179	PG13	0	0
PC180	133	PC181	PG12	0	0
PC182	134	PC183	PG11	0	0
PC184	135	PC185	PG10	0	0
PC186	136	PC187	PG9	0	0
PC188	137	PC189	PG8	0	0
PC190	138	PC191	PG7	0	0
PC192	139	PC193	PG6	0	0
PC194	140	PC195	PG5	0	0
PC196	141	PC197	PG4	0	0
PC198	142	PC199	PG3	0	0
PC200	143	PC201	PG2	0	0
PC202	144	PC203	PG1	0	0
PC204	145	PC205	PG0	0	0

*A20-A23 are duplicated for ADC3
 *D5 is digital-only on F429! (EINT11)
 *VIGN input is unprotected!
 *A20-A22 are duplicated for COMP1/2

