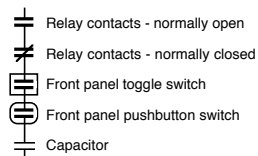


Simon 2006E Relay Processor

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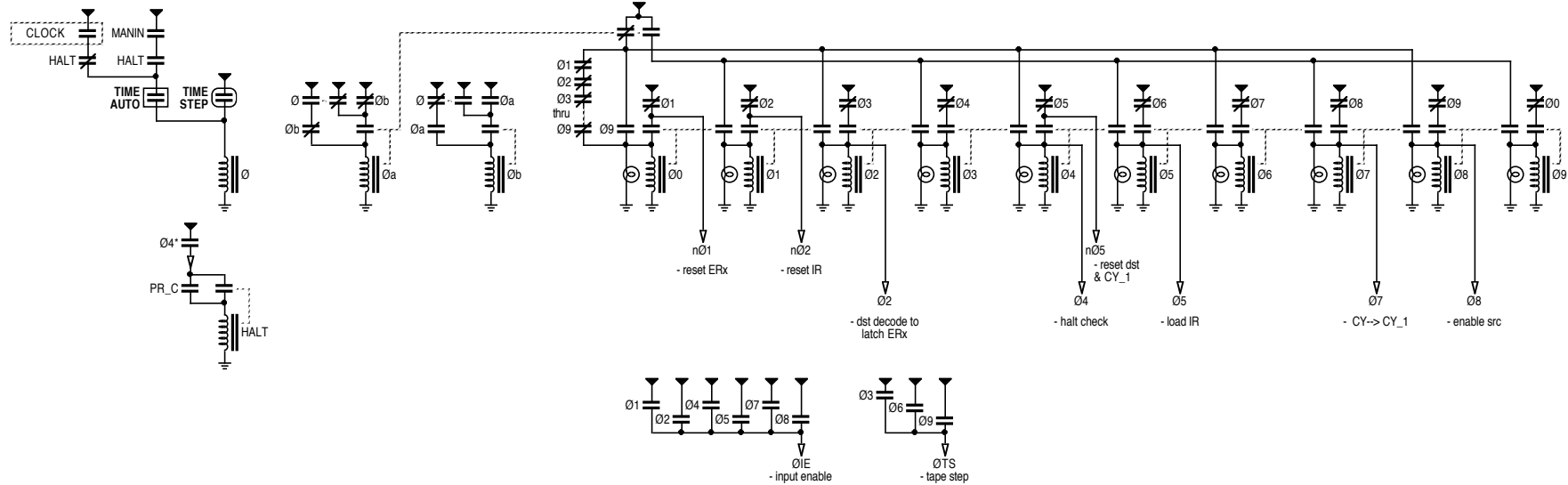
- Reverse EMF clamp diodes are installed on each relay coil.
- This design is based on Radio Electronics articles from 1950 Oct to 1951 Apr, with some new design aspects.
- 2006 Sep: Drawn / bhilpert.
2014 Sep: Minor updates / bh.

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Section: Title & Notes

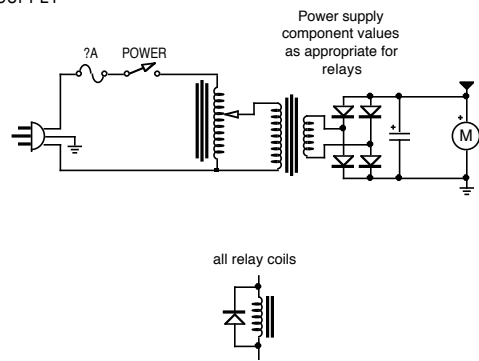
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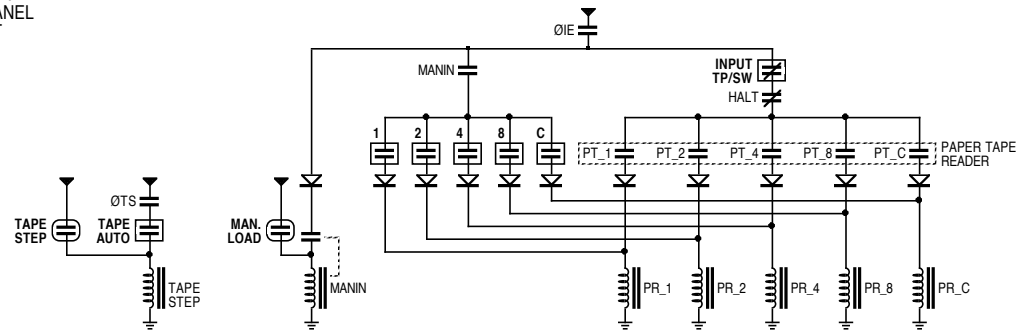


TIMING

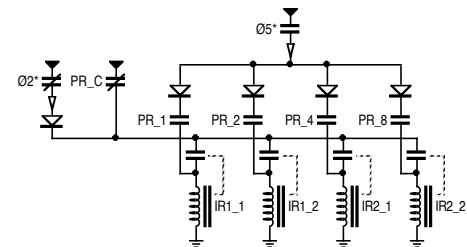
POWER SUPPLY



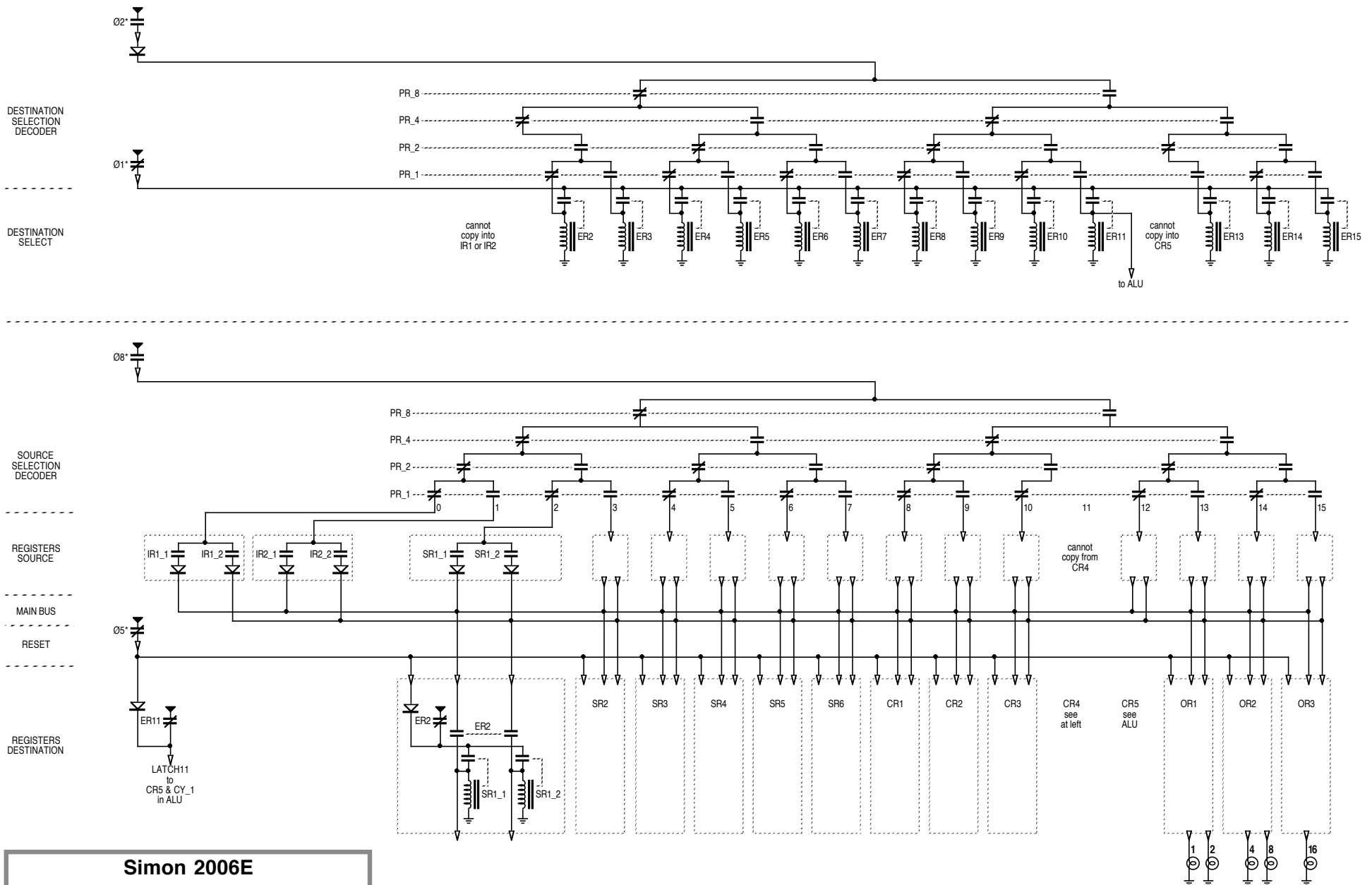
TAPE and FRONT PANEL INPUT



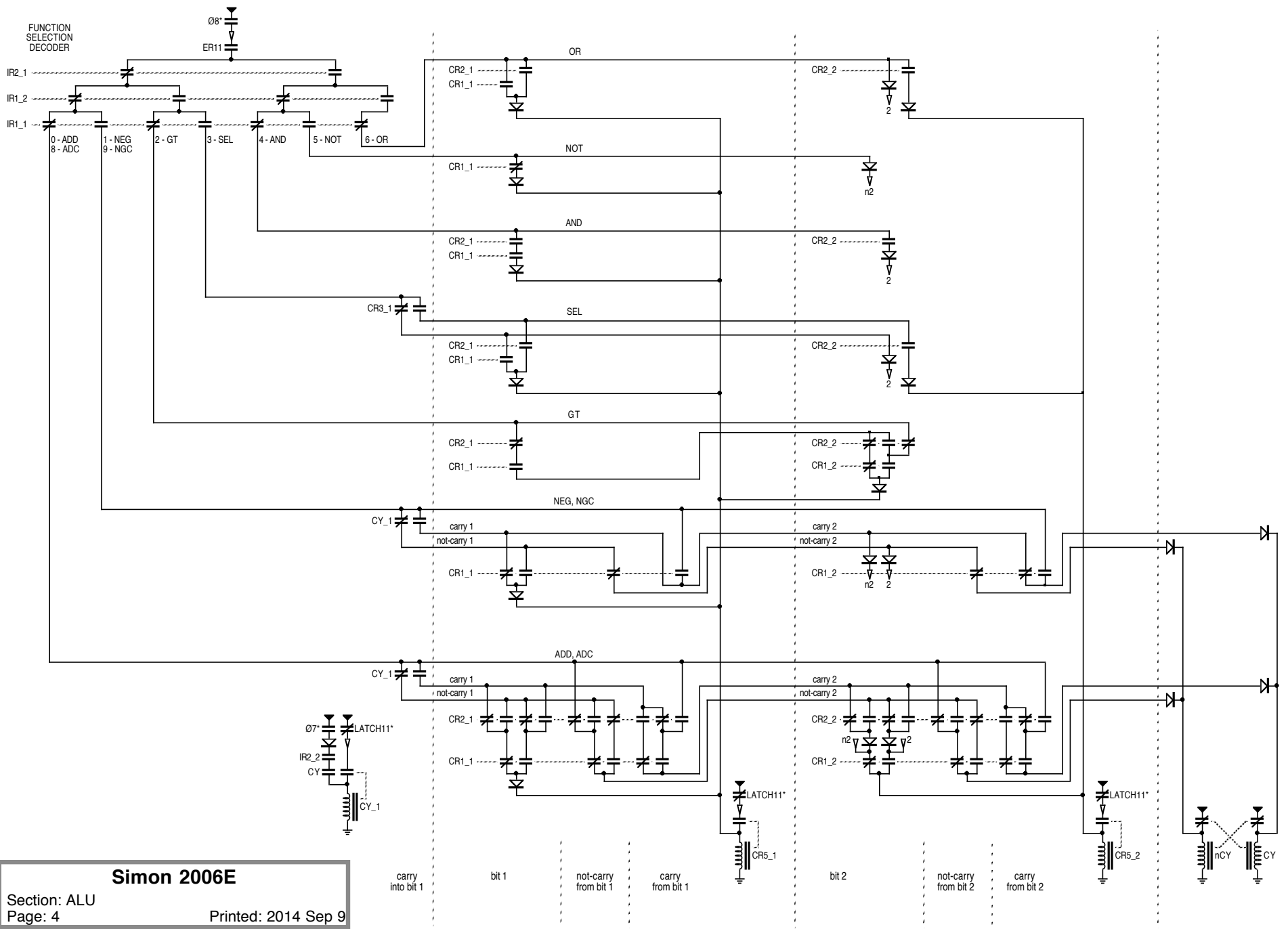
INPUT REGISTER



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ALU Function Truth Tables

ADC	CYin	CR1_b	CR2_b	CYout	CR5_b	
for	0	0	0	0	0	
each	0	0	1	1	0	
bit	0	1	0	1	0	
b=1,2	0	1	1	0	1	
	1	0	0	1	0	
	1	0	1	0	1	
	1	1	0	0	1	
	1	1	1	1	1	
NGC	CY_1	CR1_2	CR1_1	CY	CR5_2	CR5_1
	0	0	0	0	0	0
	0	0	1	1	1	1
	0	1	0	1	1	0
	0	1	1	1	0	1
	1	0	0	1	1	1
	1	0	1	1	1	0
	1	1	0	1	0	1
	1	1	1	1	0	0
GT	CR1_2	CR1_1	CR2_2	CR2_1	CR5_1	
	0	0	x	x	0	
	0	1	0	0	1	
	0	1	0	1	0	
	0	1	1	x	0	
	1	x	0	x	1	
	1	0	1	x	0	
	1	1	1	0	1	
	1	1	1	1	0	

Switch Types & Contacts Tally

Switch	Form	N.O.	N.C.	D.T.	Poles
1	toggle	1	-	-	1
2	toggle	1	-	-	1
4	toggle	1	-	-	1
8	toggle	1	-	-	1
16	toggle	1	-	-	1
MAN LOAD	momentary	1	-	-	1
INPUT T/M	toggle	-	-	1	1
TAPE A/M	toggle	1	-	-	1
TAPE STEP	momentary	1	-	-	1
TIME A/M	toggle	1	-	-	1
TIME STEP	momentary	1	-	-	1
POWER	toggle	1	-	-	1

Diodes Tally

Section	Count
input	11
IR	5
dst decoder	1
main bus	30
reg reset	13
ALU carry 1	1
ALU bit 1	10
ALU bit 2	11
ALU carry	4
Total	86

Relay Contacts Tally

Relay	N.O.	N.C.	D.T.	Poles	4PDT	2PDT
Ø	-	-	2	2	0	1
Øa	1	2	-	3	1	0
Øb	3	-	1	4	1	0
Ø0	2	1	1	4	1	0
Ø1	2	1	1	4	1	0
Ø2	2	1	1	4	1	0
Ø3	2	1	1	4	1	0
Ø4	2	1	1	4	1	0
Ø5	2	1	1	4	1	0
Ø6	2	1	1	4	1	0
Ø7	2	1	1	4	1	0
Ø8	2	1	1	4	1	0
Ø9	2	1	1	4	1	0
HALT	1	-	1	2	0	1
ER2	3	1	-	4	1	0
ER3	3	1	-	4	1	0
ER4	3	1	-	4	1	0
ER5	3	1	-	4	1	0
ER6	3	1	-	4	1	0
ER7	3	1	-	4	1	0
ER8	3	1	-	4	1	0
ER9	3	1	-	4	1	0
ER10	3	1	-	4	1	0
ER11	2	1	-	3	1	0
ER13	3	1	-	4	1	0
ER14	3	1	-	4	1	0
ER15	3	1	-	4	1	0
PR_1	2	1	13	16	4	0
PR_2	2	-	7	9	2	1
PR_4	1	-	4	5	1	1
PR_8	1	-	2	3	1	0
PR_C	1	1	-	2	0	1
MANIN	2	-	-	2	0	1
IR1_1	2	1	3	6	1	1
IR1_2	2	-	2	4	1	0
IR2_1	2	-	1	3	1	0
IR2_2	3	-	-	3	1	0
SR1_1	2	-	-	2	0	1
SR1_2	2	-	-	2	0	1
SR2_1	2	-	-	2	0	1
SR2_2	2	-	-	2	0	1
SR3_1	2	-	-	2	0	1
SR3_2	2	-	-	2	0	1
SR4_1	2	-	-	2	0	1
SR4_2	2	-	-	2	0	1
SR5_1	2	-	-	2	0	1
SR5_2	2	-	-	2	0	1
SR6_1	2	-	-	2	0	1
SR6_2	2	-	-	2	0	1
CR1_1	4	1	3	8	2	0
CR1_2	2	1	5	8	2	0
CR2_1	7	3	2	12	3	0
CR2_2	7	3	3	13	3	1
CR3_1	2	-	1	3	1	0
CR3_2	2	-	-	2	0	1
CR5_1	2	-	-	2	0	1
CR5_2	2	-	-	2	0	1
CY_1	1	-	2	3	1	0
CY	1	1	-	2	0	1
nCY	-	1	-	1	0	1
OR1_1	2	-	-	2	0	1
OR1_2	2	-	-	2	0	1
OR2_1	2	-	-	2	0	1
OR2_2	2	-	-	2	0	1
OR3_1	2	-	-	2	0	1
OR3_2	2	-	-	2	0	1
33				33	6	
Functional Relays: 66				4PDT 2PDT		
Physical Relays: 80				49	31	

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