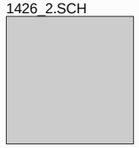
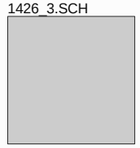
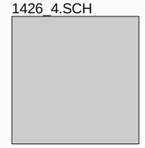
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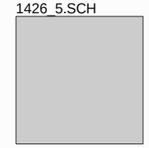
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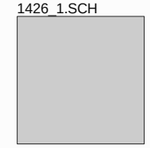
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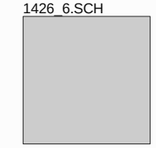
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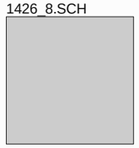
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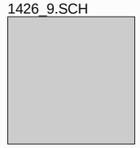
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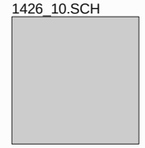
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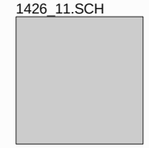
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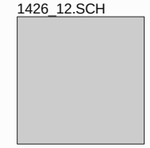
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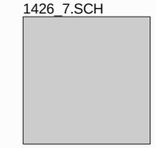
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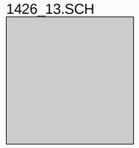
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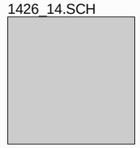
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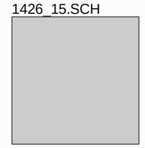
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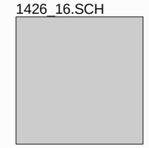
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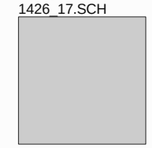
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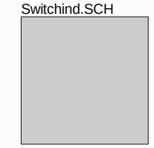
Name
1426_16.SCH



Name
1426_17.SCH



Button and indicators
Switchind.SCH



CREO

VLF Engine Satellite Elec.
Project Sheet

C:\WINNT\Profiles\rluther\Desktop\1426.DDB - Documents\1426.PRJ

DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD00	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	0 of 17

[2] BRD_SEL

[3-12,14] SPI.MISO

[2] SPI.SELECT

VCC
R16
10K
U9A
OE
2 SPI.MISO+
3 SPI.MISO-
OE/ LTC486
[15] P3-11 P3-24

U13E
74HC14

SPI.MOSI+ / SPI.MOSI- / SPI.SCK+ / SPI.SCK- / SPI.RST+ / SPI.RST- / SPI.A0+ / SPI.A0- / SPI.A1+ / SPI.A1- / SPI.A2+ / SPI.A2- / SPI.A3+ / SPI.A3- / SPI.A4+ / SPI.A4- / SPI.A5+ / SPI.A5- / SPI.A6+ / SPI.A6- / SPI.A7+ / SPI.A7-

R3A OMIT, R3B OMIT, R3C OMIT, R2A OMIT, R2B OMIT, R2C OMIT, R2D OMIT, R1A OMIT, R1B OMIT, R1C OMIT, R1D OMIT

2K2 D R10A, R10B, R10C, R10D, R10E, R10F, R9A, R9B, R9C, R9D, R9E, R9F, R9G, R9H, R8A, R8B, R8C, R8D, R8E, R8F, R8G, R8H

U6A, U6B, U6C, U5A, U5B, U5C, U5D, U4A, U4B, U4C, U4D — 26C32

GND

R11, R15 — 47R

C4, C9 — 10n

SPI.MOSI, SPI.RST, SPI.A0, SPI.A1, SPI.A2, SPI.A3, SPI.A4, SPI.A5, SPI.A6, SPI.A7

[15]

U14D, U14E, U27E, U27F — 74HC14

10SPI.SCK.SLOTA

12SPI.SCK.SLOTB

U14F
13 — 12 SPI.SCK

U13D
9 — 8 SPI.SCK.B

U13C
5 — 6 SPI.SCK/

U13B
SPI.RST 3 — 4 SPI.RST/

U13A
1 — 2 SPI.RST.B/

U13F
SPI.MOSI 13 — 12 SPI.MOSI.B

SPI.SCK
SPI.SCK/
SPI.RST
SPI.RST/
SPI.MOSI
SPI.MOSI.B/
SPI.RST.B/
SPI.SCK.B
[3-12]
[6]

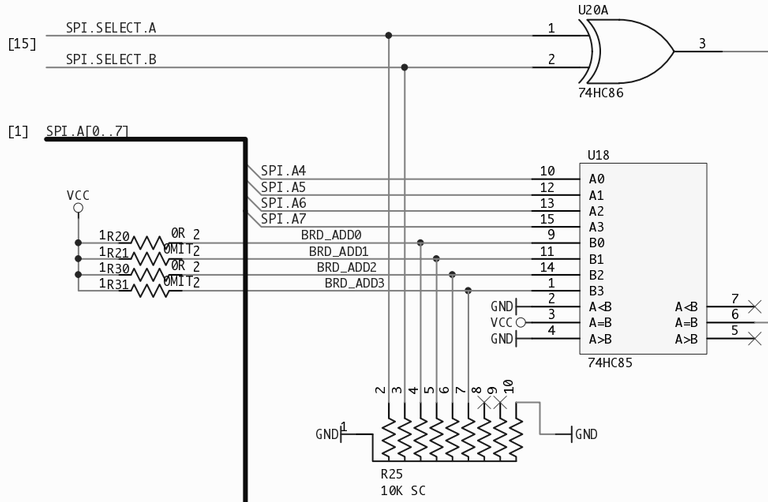
SPI.A[0..7] [2]

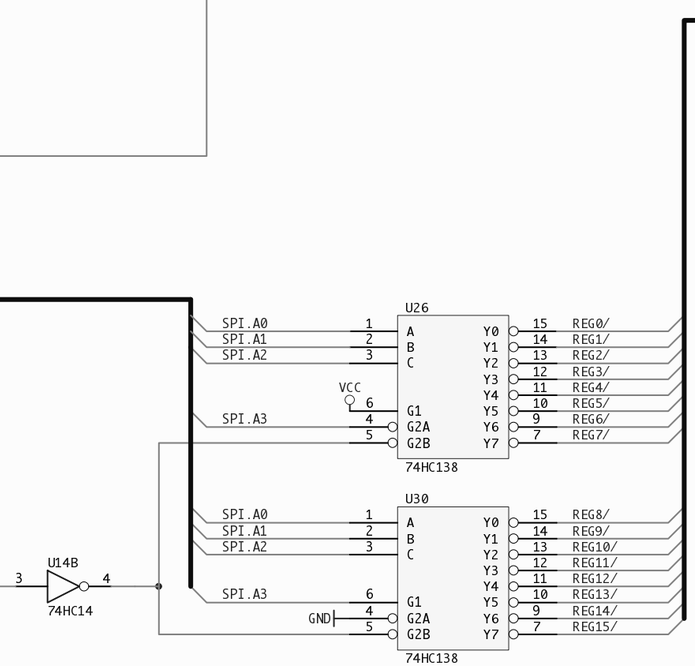
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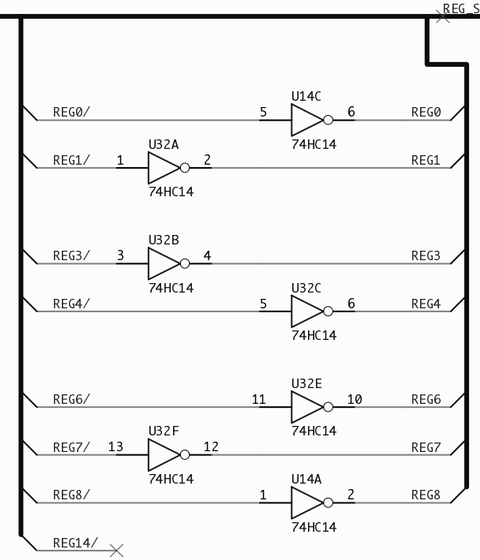
VLF Engine Satellite Elec.
SPI INTERFACE

C:\WINNT\Profiles\rluther\Desktop\1426.DDB - Documents\1426_1.SCH

DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD01	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	1 of 17







REGISTER TABLE

GRAY CODE		INPUT		OUTPUT
1010	REG10L	DCMOTOR BOARD		DCMOTOR BOARD
	REG10H	DCMOTOR BOARD		DCMOTOR BOARD
1011	REG11L	ANALOG BOARD		ANALOG BOARD
	REG11H	ANALOG BOARD		ANALOG BOARD
1001	REG9L	DCMOTOR BOARD		DCMOTOR BOARD
	REG9H	DCMOTOR BOARD		DCMOTOR BOARD
1000	REG8L	SPECIAL	SH12	SPECIAL + SPARE Q
	REG8H	ISO IN + DIG.IN24-27	SH5	SPARE Q
0000	REG0L	DIF.IN0-7		OC.OUT0-7
	REG0H	DIG.IN0-7		SS_LED + SPARE OC
0001	REG1L	DIG.IN8-15		OC.OUT8-15
	REG1H	DIG.IN16-23		OC.OUT16-23
0011	REG3L	TS I/F IO		TS I/F IO
	REG3H	TS I/F IO		TS I/F IO
0010	REG2L	DCMOTOR BOARD		DCMOTOR BOARD
	REG2H	DCMOTOR BOARD		DCMOTOR BOARD
0110	REG6L	HOME/AWAY2		
	REG6H	HOME/AWAY1		
0111	REG7L	HOME/AWAY2 INPUT		
	REG7H	HA-CABLES + SPARE	SH11	
0101	REG5L			LED DA TS
	REG5H			LED DA TS
0100	REG4L	VERSION		
	REG4H	DAUGHTER ID + VER	SH12	
1100	REG12L	ANALOG BOARD		ANALOG BOARD
	REG12H	ANALOG BOARD		ANALOG BOARD
1101	REG13L	ANALOG BOARD		ANALOG BOARD
	REG13H	ANALOG BOARD		ANALOG BOARD
1111	REG15L	PRESSURE SENSOR		PRES CHANNEL SELECT
	REG15H	PRESSURE SENSOR		PRES CHANNEL SELECT
1110	REG14L	DO NOT USE		DO NOT USE
	REG14H	DO NOT USE		DO NOT USE

NOTE: BOARD MUST BE DESELECTED AFTER EACH TRANSFER TO LATCH

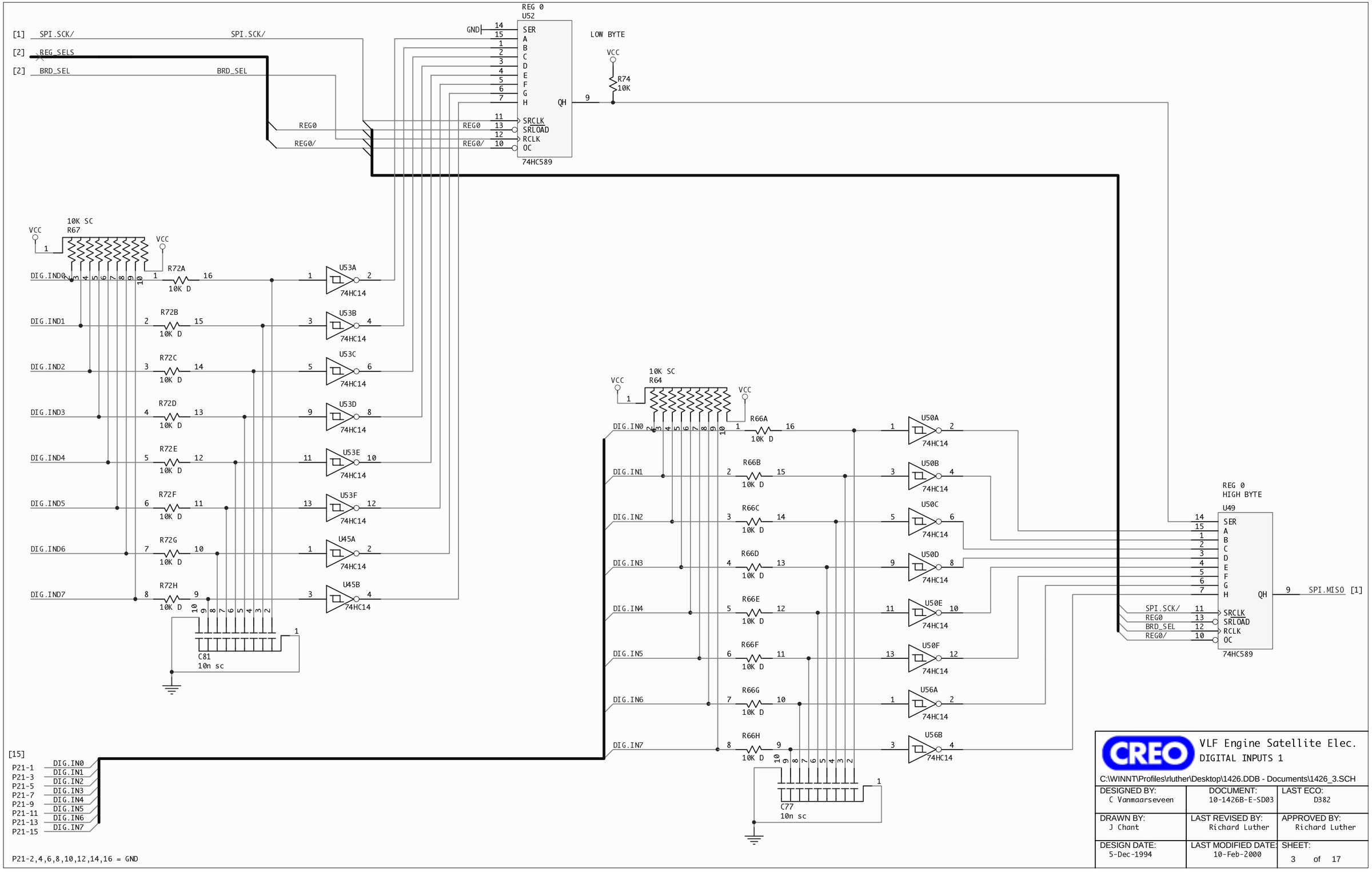
REGISTER ADDRESS SHOULD BE LEFT ON 14 WHILE BOARD IS SELECTED AND DESELECTED.

CREO

VLF Engine Satellite Elec.
REGISTER AND BOARD DECODE

C:\WINNT\Profiles\rluther\Desktop\1426.DDB - Documents\1426_2.SCH

DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD02	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	2 of 17


[1] SPI.SCK/
SPI.SCK/
[2] REG_SELS
[2] BRD_SEL
BRD_SEL
REG0
REG0/
REG 0
U52
GND
SER
A
B
C
D
E
F
G
H
QH
SRCLK
SRLOAD
RCLK
OC
74HC589
LOW BYTE
VCC
R74
10K
10K SC
R67
R72A
R72B
R72C
R72D
R72E
R72F
R72G
R72H
10K D
DIG.IND0
DIG.IND1
DIG.IND2
DIG.IND3
DIG.IND4
DIG.IND5
DIG.IND6
DIG.IND7
U53A
U53B
U53C
U53D
U53E
U53F
U45A
U45B
74HC14
C81
10n sc
10K SC
R64
R66A
R66B
R66C
R66D
R66E
R66F
R66G
R66H
DIG.IN0
DIG.IN1
DIG.IN2
DIG.IN3
DIG.IN4
DIG.IN5
DIG.IN6
DIG.IN7
U50A
U50B
U50C
U50D
U50E
U50F
U56A
U56B
C77
10n sc
REG 0
HIGH BYTE
U49
SPI.MISO [1]
[15]
P21-1
P21-3
P21-5
P21-7
P21-9
P21-11
P21-13
P21-15
P21-2,4,6,8,10,12,14,16 = GND
CREO
VLF Engine Satellite Elec.
DIGITAL INPUTS 1
C:\WINNT\Profiles\rluther\Desktop\1426.DDB - Documents\1426_3.SCH
DESIGNED BY: C Vanmaarseveen
DOCUMENT: 10-1426B-E-SD03
LAST ECO: D382
DRAWN BY: J Chant
LAST REVISED BY: Richard Luther
APPROVED BY: Richard Luther
DESIGN DATE: 5-Dec-1994
LAST MODIFIED DATE: 10-Feb-2000
SHEET: 3 of 17

[1] SPI.SCK
[1] SPI.SCK/
[1] SPI.MOSI
[1] SPI.RST/
[2] REG.SEL5
[2] BRD_SEL

10K SC
R80

REG_SEL5

P25-2 DIG.IN8 — R86A 10K D — D35 5082-2835 — U56C 74HC14
P25-5 DIG.IN9 — R86B 10K D — D34 5082-2835 — U56D 74HC14
P25-8 DIG.IN10 — R86C 10K D — D33 5082-2835 — U56E 74HC14
P25-11 DIG.IN11 — R86D 10K D — D32 5082-2835 — U56F 74HC14
P25-14 DIG.IN12 — R86E 10K D — D31 5082-2835 — U64A 74HC14
P25-17 DIG.IN13 — R86F 10K D — D30 5082-2835 — U64B 74HC14
P25-20 DIG.IN14 — R86G 10K D — D29 5082-2835 — U64C 74HC14
P25-23 DIG.IN15 — R86H 10K D — D28 5082-2835 — U64D 74HC14

P25-1,4,7,10,13,16,19,22 = 12V 10K SC
P25-3,6,9,12,15,18,21,24 = GND R76

C97 10n sc

[15]

P24-2 DIG.IN16 — R77A 10K D — D27 5082-2835 — U57A 74HC14
P24-5 DIG.IN17 — R77B 10K D — D26 5082-2835 — U57B 74HC14
P24-8 DIG.IN18 — R77C 10K D — D25 5082-2835 — U57C 74HC14
P24-11 DIG.IN19 — R77D 10K D — D24 5082-2835 — U57D 74HC14
P24-14 DIG.IN20 — R77E 10K D — D23 5082-2835 — U57E 74HC14
P24-17 DIG.IN21 — R77F 10K D — D22 5082-2835 — U57F 74HC14
P24-20 DIG.IN22 — R77G 10K D — D21 5082-2835 — U64E 74HC14
P24-23 DIG.IN23 — R77H 10K D — D20 5082-2835 — U64F 74HC14

P24-1,4,7,10,13,16,19,22 = 12V
P24-3,6,9,12,15,18,21,24 = GND

C86 10n sc

REG 1
LOW BYTE
U60

GND — SER, A, B, C, D, E, F, G, H — QH — 9
SPI.SCK/ — SRCLK
REG1 — SRLOAD
BRD_SEL — RCLK
REG1/ — OC
74HC589

SPI.MISO [1]

R79 10K

REG 1
HIGH BYTE
U61

SER, A, B, C, D, E, F, G, H — QH — 9
SPI.SCK/ — SRCLK
REG1 — SRLOAD
BRD_SEL — RCLK
REG1/ — OC
74HC589

REG 8
LOW BYTE
U3

SPI.MOSI — SER
SPI.SCK — SRCK
SPI.RST/ — SRCLR
SPI.RST — RCK
G

QA PFO.RST/ [12]
QB
QC
QD
QE SPARE.Q1 [15]
QF SPARE.Q2 [15]
QG SPARE.Q3 [15]
QH SPARE.Q4 [15]
QH1 — 9
74HC595

REG8/ — U12D — 74HC08 — 11
SPI.RST/

HIGH BYTE
U1

SER
SRCK
SRCLR
RCK
G

QA SPARE.Q5 [15]
QB SPARE.Q6 [15]
QC SPARE.Q7 [15]
QD SPARE.Q8 [15]
QE SPARE.Q9 [15]
QF SPARE.Q10 [15]
QG SPARE.Q11 [15]
QH SPARE.Q12 [15]
QH1 — 9
74HC595

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VLF Engine Satellite Elec.
DIGITAL INPUTS 2 + OUTPUTS

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DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD04	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	4 of 17

[12] REG8.MISO

[1] SPI.SCK/

[2] BRD_SEL

[2] REG_SEL5

1K SC
R92

VCC 1 2 3 4 5 6 7 8 9 10 VCC

P30-1 ISO.IN0+ 1 U65A 15 — R94A 1 16 — U31A 1 2
R90 2 16 GND
GND P1K ILQ30
10K D 74HC14

P30-3 ISO.IN1+ 4 U65B 14 — R94B 2 15 — U31B 3 4
R89 3 13 GND
GND P1K ILQ30
10K D 74HC14

P30-5 ISO.IN2+ 5 U65C 11 — R94C 3 14 — U63A 1 2
R88 6 12 GND
GND P1K ILQ30
10K D 74HC14

P30-7 ISO.IN3+ 8 U65D 10 — R94D 4 13 — U63B 3 4
R87 7 9 GND
GND P1K ILQ30
10K D 74HC14

[15]
P31-1 DIG.IN24 — R94E 5 12 — U63C 5 6
10K D 74HC14

P31-3 DIG.IN25 — R94F 6 11 — U63D 9 8
10K D 74HC14

P31-5 DIG.IN26 — R94G 7 10 — U63E 11 10
10K D 74HC14

P31-7 DIG.IN27 — R94H 8 9 — U63F 13 12
10K D 74HC14

10 9 8 7 6 5 4 3 2 1
C98
10n sc

P31-2,4,6,8 = GND

REG 8
HIGH BYTE
U55

14 SER
15 A
1 B
2 C
3 D
4 E
5 F
6 G
7 H — QH 9 — SPI.MISO [1]

SPI.SCK/ 11 SRCLK
REG8 13 SRLOAD
BRD_SEL 12 RCLK
REG8/ 10 OC

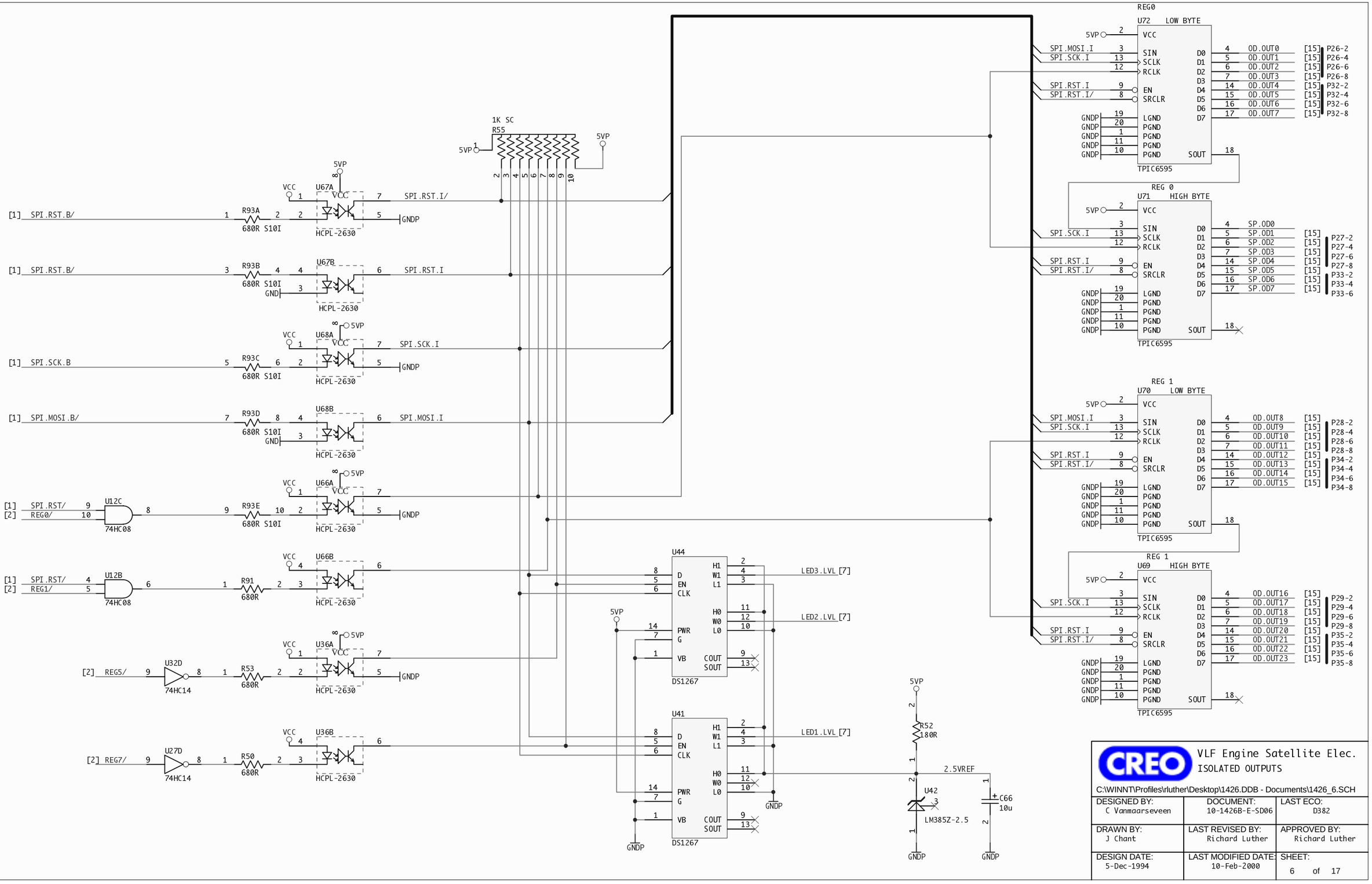
74HC589

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VLF Engine Satellite Elec.
ISOLATED DIGITAL INPUTS

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DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD05	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	5 of 17

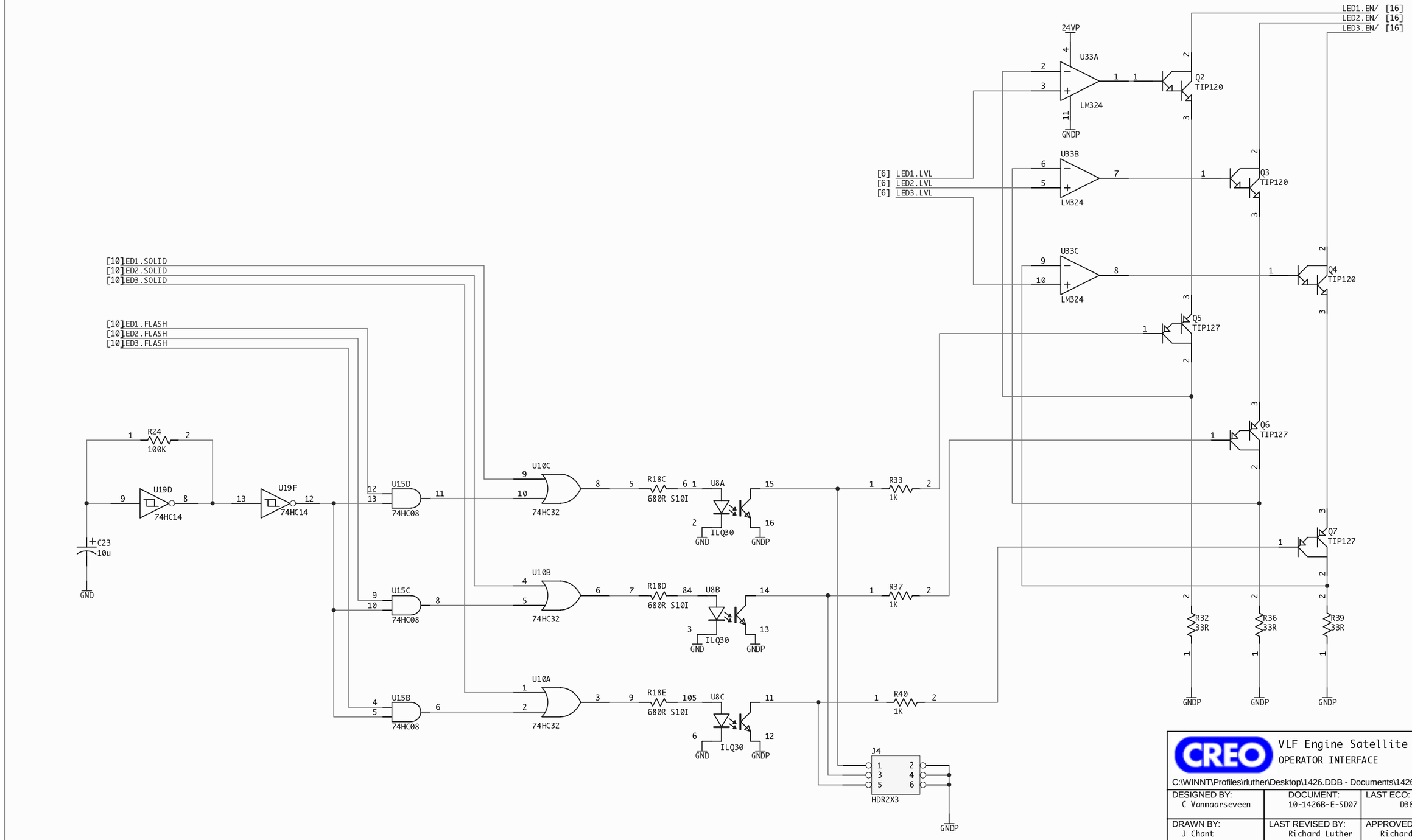


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VLF Engine Satellite Elec.
ISOLATED OUTPUTS

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DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD06	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	6 of 17



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VLF Engine Satellite Elec.
OPERATOR INTERFACE

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DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD07	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	7 of 17

P12-7 HOME.2A+ 1 — R22A 100R S8I — 2 P12-8 HOME.2A-
R23A 2K2 D — R23B 2K2 D
U21A 26C32 (OE, GND) — U21B 26C32 (OE, GND)
2A
3 HOME.2A
5 AWAY.2A

P12-9 AWAY.2A+ 3 — R22B 100R S8I — 4 P12-10 AWAY.2A-
R23C 2K2 D — R23D 2K2 D
U21B 26C32
P12-13 BAY.2A+ 7 — R22D 100R S8I — 8 P12-14 BAY.2A-
R23G 2K2 D — R23H 2K2 D
U21D 26C32
13 BAY.2A

P15-7 HOME.2B+ 1 — R35A 100R S8I — 2 P15-8 HOME.2B-
R38A 2K2 D — R38B 2K2 D
U25A 26C32 (OE, GND) — U25B 26C32 (OE, GND)
2B
3 HOME.2B
5 AWAY.2B

P15-9 AWAY.2B+ 3 — R35B 100R S8I — 4 P15-10 AWAY.2B-
R38C 2K2 D — R38D 2K2 D
U25C 26C32
P15-13 BAY.2B+ 7 — R35D 100R S8I — 8 P15-14 BAY.2B-
R38G 2K2 D — R38H 2K2 D
U25D 26C32
13 BAY.2B

P5-7 HOME.1A+ 1 — R12A 100R S8I — 2 P5-8 HOME.1A-
R13A 2K2 D — R13B 2K2 D
U7A 26C32 (OE, GND) — U7B 26C32 (OE, GND)
1A
3 HOME.1A
5 AWAY.1A

P5-9 AWAY.1A+ 3 — R12B 100R S8I — 4 P5-10 AWAY.1A-
R13C 2K2 D — R13D 2K2 D
U7C 26C32
P5-13 BAY.1A+ 7 — R12D 100R S8I — 8 P5-14 BAY.1A-
R13G 2K2 D — R13H 2K2 D
U7D 26C32
13 BAY.1A

P8-7 HOME.1B+ 1 — R19A 100R S8I — 2 P8-8 HOME.1B-
R17A 2K2 D — R17B 2K2 D
U16A 26C32 (OE, GND) — U16B 26C32 (OE, GND)
1B
3 HOME.1B
5 AWAY.1B

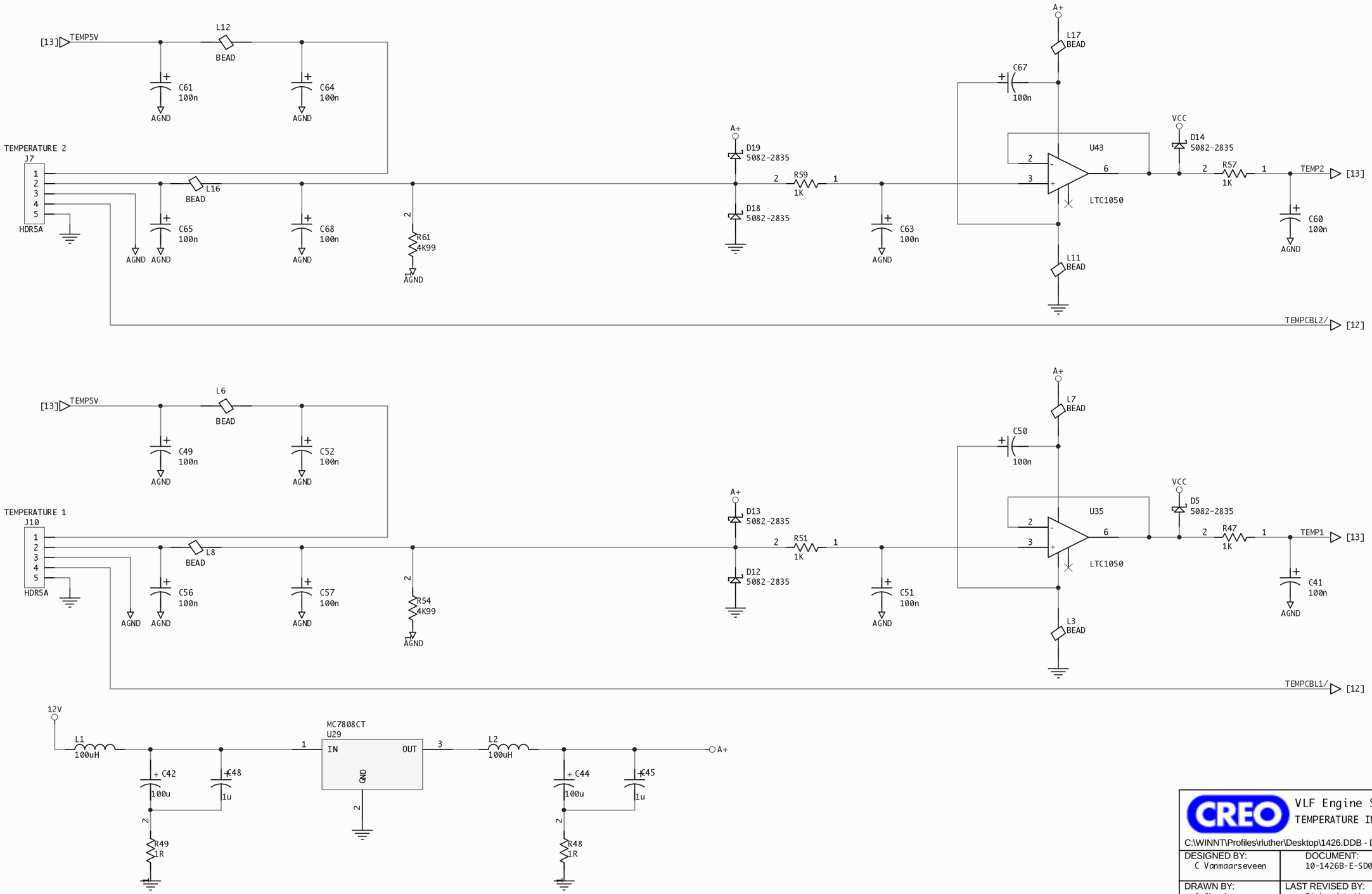
P8-9 AWAY.1B+ 3 — R19B 100R S8I — 4 P8-10 AWAY.1B-
R17C 2K2 D — R17D 2K2 D
U16C 26C32
P8-13 BAY.1B+ 7 — R19D 100R S8I — 8 P8-14 BAY.1B-
R17G 2K2 D — R17H 2K2 D
U16D 26C32
13 BAY.1B

P12-11 P15-11 OVRUN.CCW.2 — R42B 10K S10I, R42A 10K S10I — R42C 10K S10I — C32 10n — D2 5082-2835 — U31D 74HC14 — OVRUN.CCW2/
2A 2B
P12-12 P15-12 OVRUN.CW.2 — R42D 10K S10I — C31 10n — D1 5082-2835 — U31E 74HC14 — OVRUN.CW2/
P5-11 P8-11 OVRUN.CCW.1 — R41D 10K S10I, R41B 10K S10I — R41A 10K S10I — C37 10n — D4 5082-2835 — U31F 74HC14 — OVRUN.CCW1/
1A 1B
P5-12 P8-12 OVRUN.CW.1 — R41C 10K S10I — C36 10n — D3 5082-2835 — U31C 74HC14 — OVRUN.CW1/
VCC

U28 74HC589
GND
A: HOME.2A, AWAY.2A, HOME.1A, AWAY.1A
B: HOME.2B, AWAY.2B, HOME.1B, AWAY.1B
SER, A, B, C, D, E, F, G, H, QH
SPI.SCK/ → SRCLK
REG7 → SRLOAD
BRD_SEL → RCLK
REG7/ → OC
QH → R34 10K → REG7.MISO [11]

HIGH BYTE
U34 74HC589
GND
OVRUN.CCW1/, OVRUN.CW1/, OVRUN.CCW2/, OVRUN.CW2/, BAY.1A, BAY.1B, BAY.2A, BAY.2B
SER, A, B, C, D, E, F, G, H, QH
SPI.SCK/ → SRCLK
REG6 → SRLOAD
BRD_SEL → RCLK
REG6/ → OC
QH → SPI.MISO [1]

VLF Engine Satellite Elec. HOME / AWAY INTERFACE		
C:\WINNT\Profiles\rluther\Desktop\1426.DDB - Documents\1426_8.SCH		
DESIGNED BY: C Vanmaarseveen	DOCUMENT: 10-1426B-E-SD08	LAST ECO: D382
DRAWN BY: J Chant	LAST REVISED BY: Richard Luther	APPROVED BY: Richard Luther
DESIGN DATE: 5-Dec-1994	LAST MODIFIED DATE: 10-Feb-2000	SHEET: 8 of 17



CREO

VLF Engine Satellite Elec.

TEMPERATURE INPUTS

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DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD09	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	9 of 17

REG 3
LOW BYTE
U2

SPI.MOSI 14 SER
SPI.SCK 11 SRCK
SPI.RST/ 10 SRCLR
12 RCK
SPI.RST 13 G

QA 15
QB 1 — LED1.SOLID [7]
QC 2 — LED2.SOLID [7]
QD 3 — LED3.SOLID [7]
QE 4 — LED1.FLASH [7]
QF 5 — LED2.FLASH [7]
QG 6 — LED3.FLASH [7]
QH 7
QH1 9

74HC595

[2] REG3/ 1
[2] SPI.RST/ 2
U12A
3
74HC08

HIGH BYTE
U11

14 SER
SPI.SCK 11 SRCK
SPI.RST/ 10 SRCLR
12 RCK
SPI.RST 13 G

QA 15 — DZ.ENB [16]
QB 1
QC 2
QD 3
QE 4 — BEEPER
QF 5
QG 6
QH 7
QH1 9

74HC595

12V
1
V+
Beep
V-
J6
X10PK
2
BEEPER- [16]
3
R7
4K7
1
2
2
Q1
2N3904
1
GND

NOTE: This is not a beeper - it's a connector.

VCC
10K SC
R26
1
VCC

[16] IND.CD/ 2 — R28A 10K D — 16 — 1
[16] BUTTON.CD/ 2 — R28B 10K D — 15
[16] MDZ.CD/ 3 — R28C 10K D — 14
[16] DZ.CD/ 4 — R28D 10K D — 13
[2] TS.I.SPARE0 5 — R28E 10K D — 12
TS.I.SPARE1 6 — R28F 10K D — 11
[16] BUTTON 7 — R28G 10K D — 10

C26
100n
GND

REG_SELS

REG 3
HIGH BYTE
U23

GND 14 SER
15 A
1 B
2 C
3 D
4 E
5 F
6 G
7 H
QH 9 — SPI.MISO [1]

SPI.SCK/ 11 SRCLK
REG3 13 SRLOAD
BRD_SEL 12 RCLK
REG3/ 10 OC

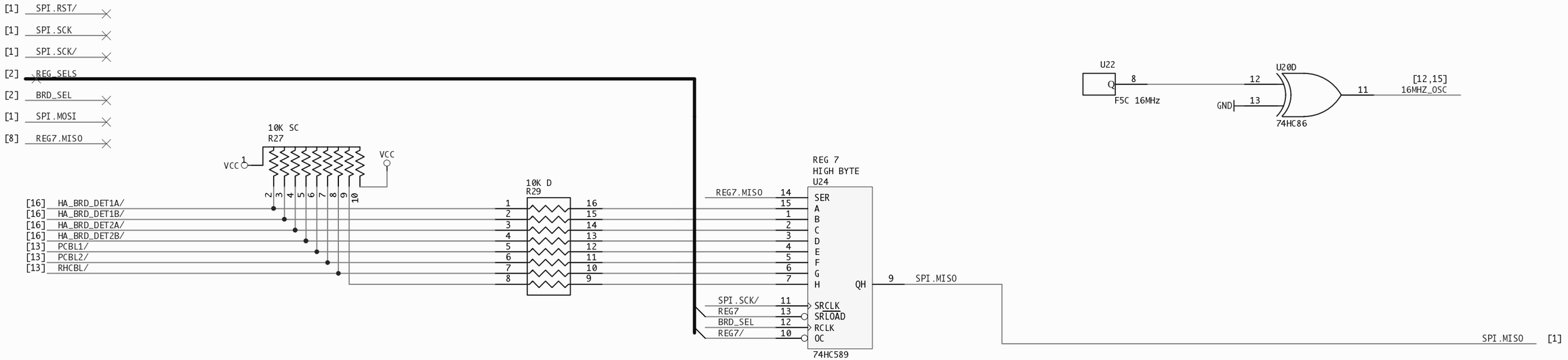
74HC589

[16] DZ.HV.FLT

CREO
VLF Engine Satellite Elec.
OPERATOR INTERFACE

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DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD10	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	10 of 17



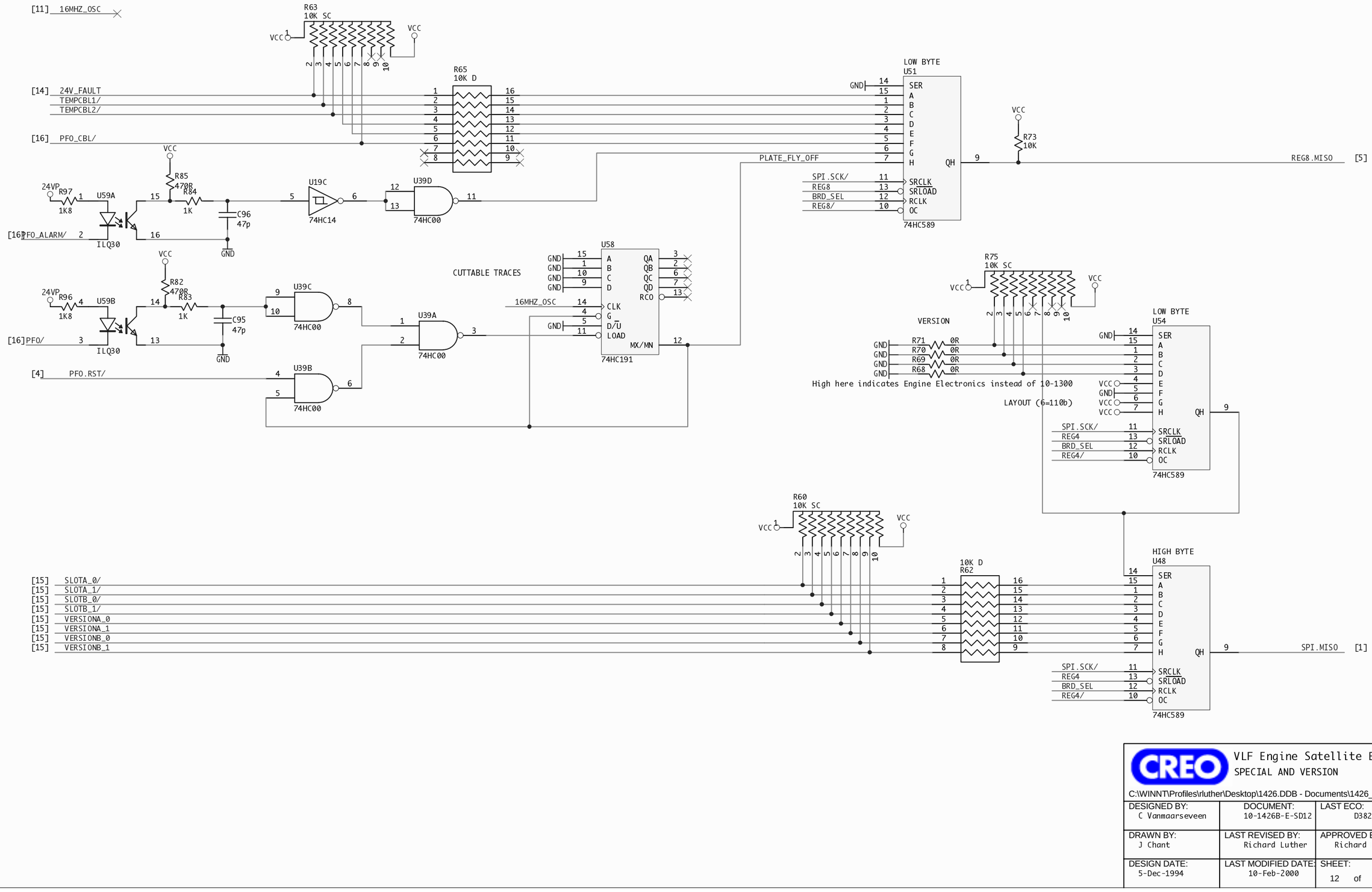
CREO

VLF Engine Satellite Elec.

CABLE DETECTS

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DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD11	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	11 of 17



VLF Engine Satellite Elec. SPECIAL AND VERSION		
C:\WINNT\Profiles\rluther\Desktop\1426.DDB - Documents\1426_12.SCH		
DESIGNED BY: C Vanmaarseveen	DOCUMENT: 10-1426B-E-SD12	LAST ECO: D382
DRAWN BY: J Chant	LAST REVISED BY: Richard Luther	APPROVED BY: Richard Luther
DESIGN DATE: 5-Dec-1994	LAST MODIFIED DATE: 10-Feb-2000	SHEET: 12 of 17

REG15/
SPI.MOSI
SPI.SCK

PRESSURE 1
12V
J36
TELE4
R46
100R
R44
10K
D9
5082-2835
D7
5082-2835
A+
L10
BEAD
C55
100n
L5
BEAD
U38A
LT1013
VCC
D11
5082-2835
PRES1
PCBL1/

PRESSURE 2
12V
J37
TELE4
R58
100R
R56
10K
D16
5082-2835
D17
5082-2835
U38B
LT1013
D10
5082-2835
PRES2
PCBL2/

HUMIDITY
12V
J38
HDR8
R43
100R
R45
10K
D8
5082-2835
D6
5082-2835
L9
BEAD
C54
100n
L4
BEAD
U37A
LT1013
D15
5082-2835
RH
RHCBL/

[9] TEMP1
[9] TEMP2

U40
MC145051
CH0
CH1
CH2
CH3
CH4
CH5
CH6
CH7
CH8
CH9
CH10
DOUT
EOC
CS
DIN
SCLK
VDD
VSS
VAG
VREF
SPI.MISO

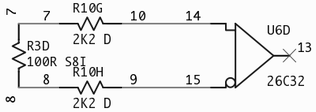
12V
L15
BEAD
C72
100n
U47
IN
GND
TMP
TRM
VO
REF02
C73
100n
AGND

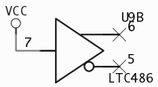
L13
LARGE BEAD
AGND

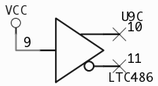
A+
L18
BEAD
C71
100n
U46
LTC1050
TEMP5V [9]
L14
BEAD

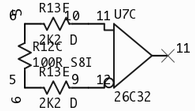
CREO
VLF Engine Satellite Elec.
AD & PRESSURE INPUTS
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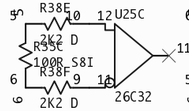
DESIGNED BY:	DOCUMENT:	LAST ECO:
C Vanmaarseveen	10-1426B-E-SD13	D382
DRAWN BY:	LAST REVISED BY:	APPROVED BY:
J Chant	Richard Luther	Richard Luther
DESIGN DATE:	LAST MODIFIED DATE:	SHEET:
5-Dec-1994	10-Feb-2000	13 of 17

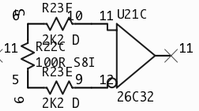


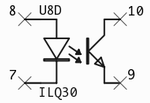


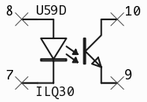


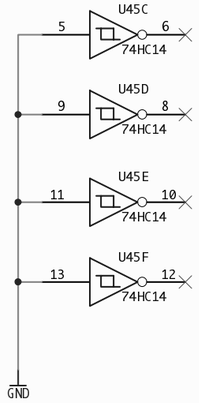


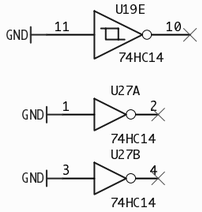


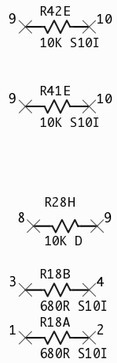


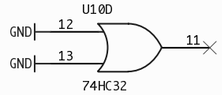


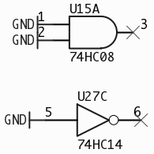


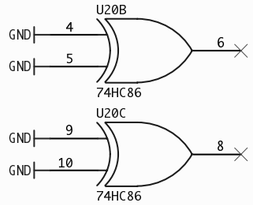


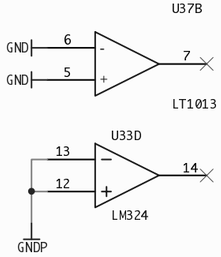


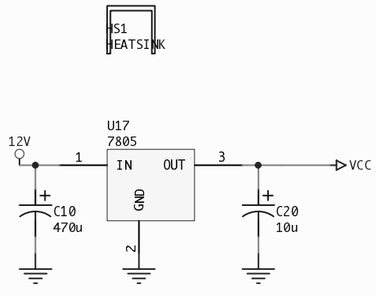


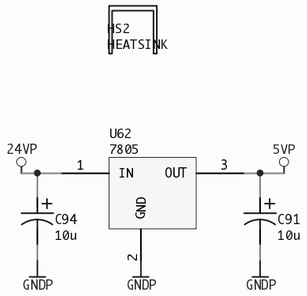


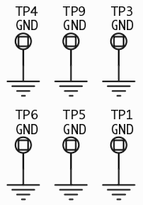


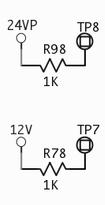


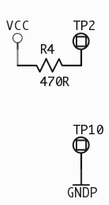


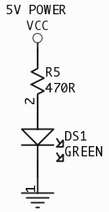


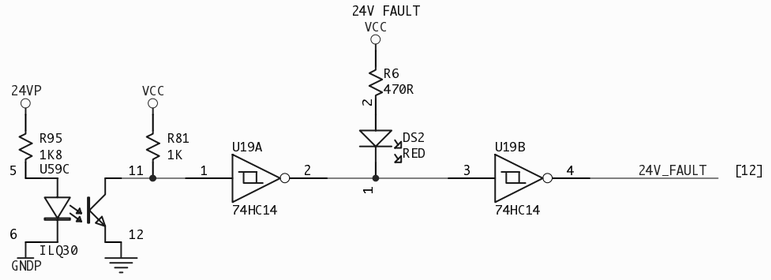












CREO VLF Engine Satellite Elec. SPARE PARTS & POWER		
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DESIGNED BY: C Vanmaarseveen	DOCUMENT: 10-1426B-E-SD14	LAST ECO: D382
DRAWN BY: J Chant	LAST REVISED BY: Richard Luther	APPROVED BY: Richard Luther
DESIGN DATE: 5-Dec-1994	LAST MODIFIED DATE: 10-Feb-2000	SHEET: 14 of 17

SPI IN

J3

	13	
SPI.RST-	25	
SPI.RST+	12	
SPI.MISO-	24	
SPI.MISO+	11	
SPI.A3-	23	
SPI.A3+	10	
SPI.A7-	22	
SPI.A7+	9	
SPI.A6-	21	
SPI.A6+	8	
SPI.A2-	20	
SPI.A2+	7	
SPI.A1-	19	
SPI.A1+	6	
SPI.A5-	18	
SPI.A5+	5	
SPI.A4-	17	
SPI.A4+	4	
SPI.A0-	16	
SPI.A0+	3	
SPI.SCK-	15	
SPI.SCK+	2	
SPI.MOSI-	14	
SPI.MOSI+	1	

DB25 FEMALE

SPI OUT

J2

	13	
SPI.RST-	25	
SPI.RST+	12	
SPI.MISO-	24	
SPI.MISO+	11	
SPI.A3-	23	
SPI.A3+	10	
SPI.A7-	22	
SPI.A7+	9	
SPI.A6-	21	
SPI.A6+	8	
SPI.A2-	20	
SPI.A2+	7	
SPI.A1-	19	
SPI.A1+	6	
SPI.A5-	18	
SPI.A5+	5	
SPI.A4-	17	
SPI.A4+	4	
SPI.A0-	16	
SPI.A0+	3	
SPI.SCK-	15	
SPI.SCK+	2	
SPI.MOSI-	14	
SPI.MOSI+	1	

DB25 FEMALE

SLOT A

J9

VCC	1	2	VCC
SPI.A0	3	4	SPI.A1
SPI.A2	5	6	SPI.A3
SPI.A4	7	8	SPI.A5
SPI.A6	9	10	SPI.A7
GND	11	12	SPI.SCK.SLOTA
SPI.RST	13	14	SPI.MOSI
SPI.MISO	15	16	16MHZ_OSC
12V	17	18	12V
GND	19	20	REG2/
REG9/	21	22	REG10/
SPI.SELECT.A	23	24	
VERSIONA_0	25	26	VERSIONA_1
SLOTA_0/	27	28	SLOTA_1/
GNDP	29	30	GNDP
GNDP	31	32	24VP
24VP	33	34	24VP

HEADER 17X2 FEMALE

SLOT B

J22

VCC	1	2	VCC
SPI.A0	3	4	SPI.A1
SPI.A2	5	6	SPI.A3
SPI.A4	7	8	SPI.A5
SPI.A6	9	10	SPI.A7
GND	11	12	SPI.SCK.SLOTB
SPI.RST	13	14	SPI.MOSI
SPI.MISO	15	16	16MHZ_OSC
12V	17	18	12V
GND	19	20	REG11/
REG12/	21	22	REG13/
SPI.SELECT.B	23	24	
VERSIONB_0	25	26	VERSIONB_1
SLOTB_0/	27	28	SLOTB_1/
GNDP	29	30	GNDP
GNDP	31	32	24VP
24VP	33	34	24VP

HEADER 17X2 FEMALE

POWER

J18

12V	1
24VP	2
5VP	3
GND	4
GNDP	5

MATE 'N LOCK

OC OUT 1

J26

24VP	OD.OUT0	1
24VP	OD.OUT1	2
24VP	OD.OUT2	3
24VP	OD.OUT3	4
		5
		6
		7
		8

LARGE MASCON 8

OC OUT 5

J29

24VP	OD.OUT16	1
24VP	OD.OUT17	2
24VP	OD.OUT18	3
24VP	OD.OUT19	4
		5
		6
		7
		8

LARGE MASCON 8

OC OUT 2

J32

24VP	OD.OUT4	1
24VP	OD.OUT5	2
24VP	OD.OUT6	3
24VP	OD.OUT7	4
		5
		6
		7
		8

LARGE MASCON 8

OC OUT 6

J35

24VP	OD.OUT20	1
24VP	OD.OUT21	2
24VP	OD.OUT22	3
24VP	OD.OUT23	4
		5
		6
		7
		8

LARGE MASCON 8

OC OUT 3

J28

24VP	OD.OUT8	1
24VP	OD.OUT9	2
24VP	OD.OUT10	3
24VP	OD.OUT11	4
		5
		6
		7
		8

LARGE MASCON 8

SP.OC OUT 1

J27

24VP	SP.OD1	1
24VP	SP.OD2	2
24VP	SP.OD3	3
24VP	SP.OD4	4
		5
		6
		7
		8

LARGE MASCON 8

OC OUT 4

J34

24VP	OD.OUT12	1
24VP	OD.OUT13	2
24VP	OD.OUT14	3
24VP	OD.OUT15	4
		5
		6
		7
		8

LARGE MASCON 8

SP.OC OUT 2

J33

24VP	SP.OD5	1
24VP	SP.OD6	2
24VP	SP.OD7	3
24VP	SP.OD0	4
		5
		6
		7
		8

LARGE MASCON 8

DIGITAL INPUT B
(HALL EFFECT SENSORS)

J25

12V	DIG.IN8	1
GND		2
12V	DIG.IN9	3
GND		4
12V	DIG.IN10	5
GND		6
12V	DIG.IN11	7
GND		8
12V	DIG.IN12	9
GND		10
12V	DIG.IN13	11
GND		12
12V	DIG.IN14	13
GND		14
12V	DIG.IN15	15
GND		16

MASCON 24

DIGITAL INPUT D

J20

DIG.IND0		1
DIG.IND1		2
DIG.IND2		3
DIG.IND3		4
DIG.IND4		5
DIG.IND5		6
DIG.IND6		7
DIG.IND7		8
		9
		10
		11
		12
		13
		14
		15
		16

GND

MASCON 16

DIGITAL INPUT D

J31

DIG.IN24		1
GND		2
DIG.IN25		3
GND		4
DIG.IN26		5
GND		6
DIG.IN27		7
GND		8

MASCON 8

DIGITAL INPUT A

J21

DIG.IN0		1
GND		2
DIG.IN1		3
GND		4
DIG.IN2		5
GND		6
DIG.IN3		7
GND		8
DIG.IN4		9
GND		10
DIG.IN5		11
GND		12
DIG.IN6		13
GND		14
DIG.IN7		15
GND		16

MASCON 16

ISOLATED INPUTS

J30

ISO.IN0+		1
		2
ISO.IN1+		3
		4
ISO.IN2+		5
		6
ISO.IN3+		7
		8

GNDP

MASCON 8

DIGITAL INPUT C
(HALL EFFECT SENSORS)

J24

12V	DIG.IN16	1
GND		2
12V	DIG.IN17	3
GND		4
12V	DIG.IN18	5
GND		6
12V	DIG.IN19	7
GND		8
12V	DIG.IN20	9
GND		10
12V	DIG.IN21	11
GND		12
12V	DIG.IN22	13
GND		14
12V	DIG.IN23	15
GND		16
		17
		18
		19
		20
		21
		22
		23
		24

MASCON 24

SPARE Q

J13

SPARE.Q1	1	2	GND
SPARE.Q2	3	4	GND
SPARE.Q3	5	6	GND
SPARE.Q4	7	8	GND
SPARE.Q5	9	10	GND
SPARE.Q6	11	12	GND
SPARE.Q7	13	14	GND
SPARE.Q8	15	16	GND
SPARE.Q9	17	18	GND
SPARE.Q10	19	20	GND
SPARE.Q11	21	22	GND
SPARE.Q12	23	24	GND
	25	26	GND

HEADER 13X2

J15

VCC	DIG.IN16	1
GND		2
VCC	DIG.IN17	3
GND		4
		5
		6

CON6

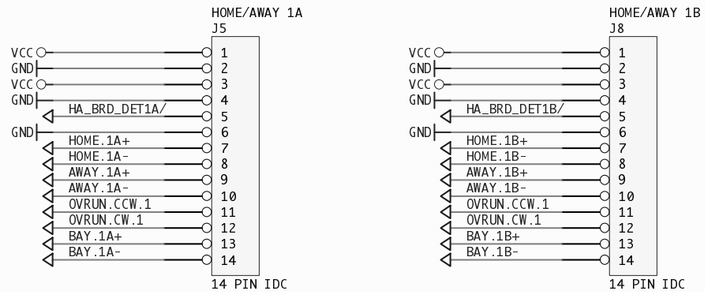
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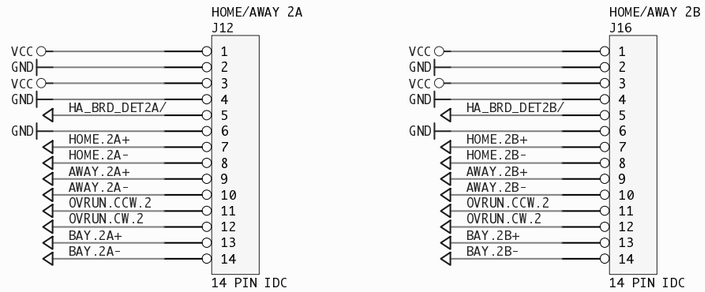
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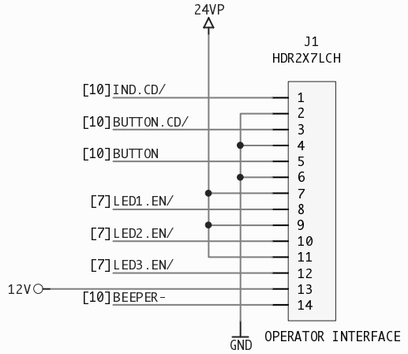
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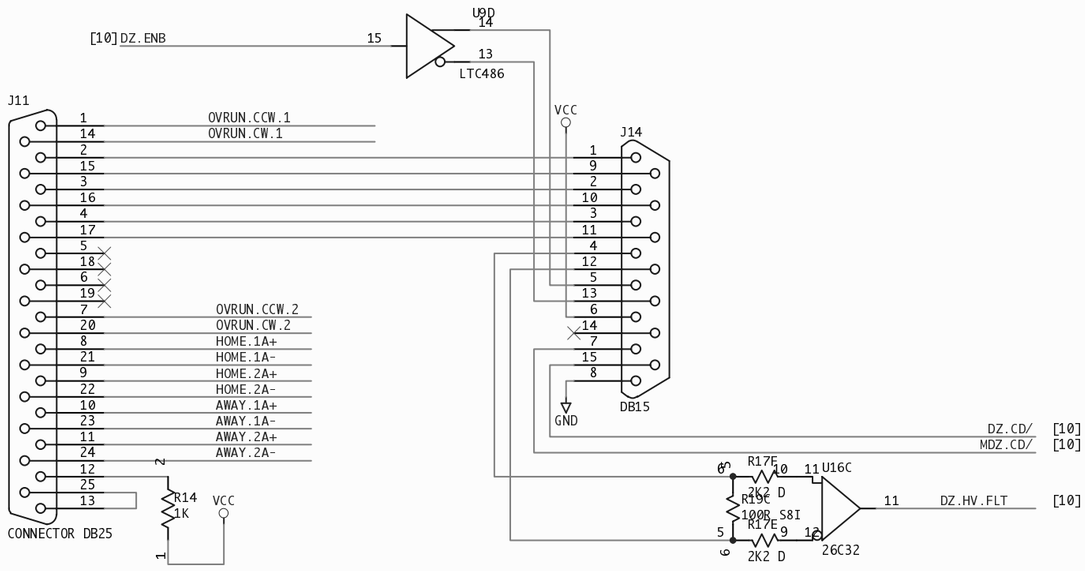
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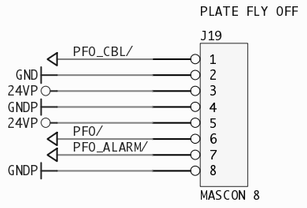
DESIGNED BY: C Vanmaarseveen	DOCUMENT: 10-1426B-E-SD15	LAST ECO: D382
DRAWN BY: J Chant	LAST REVISED BY: Richard Luther	APPROVED BY: Richard Luther
DESIGN DATE: 5-Dec-1994	LAST MODIFIED DATE: 10-Feb-2000	SHEET: 15 of 17











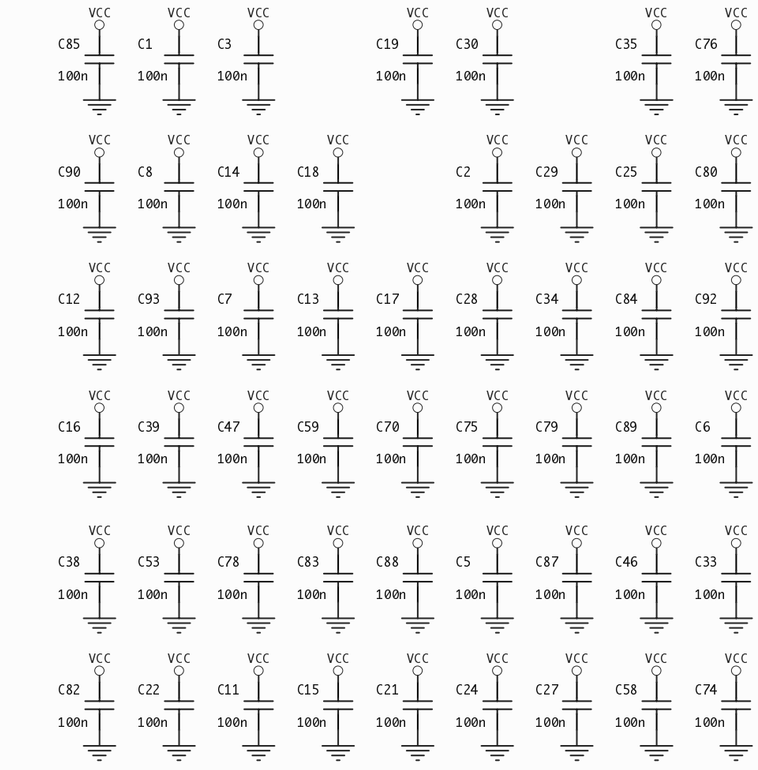
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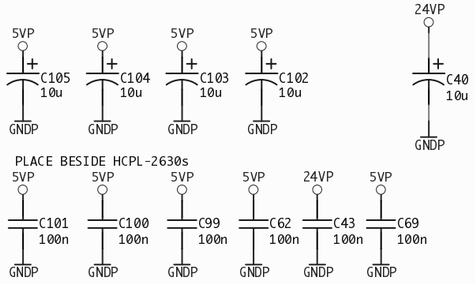
VLF Engine Satellite Elec.
CONNECTORS 2

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DRAWN BY:	LAST REVISED BY:	APPROVED BY:
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5-Dec-1994	10-Feb-2000	16 of 17

PLACE ONE DECOUPLING CAP BESIDE EACH "HC" PART





PLACE BESIDE HCPL-2630s

CREO

VLF Engine Satellite Elec.

Bypass Caps

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