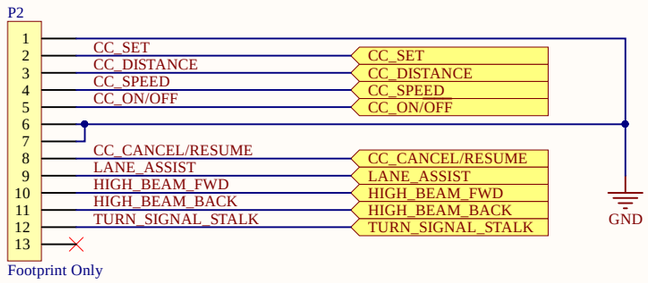
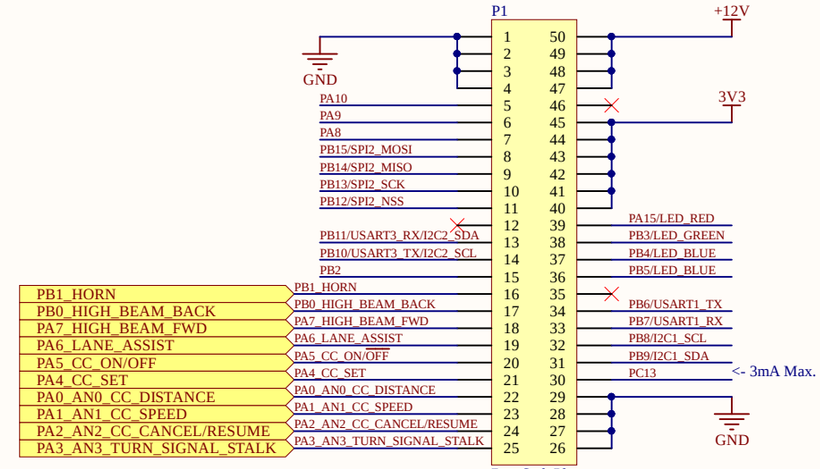
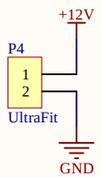
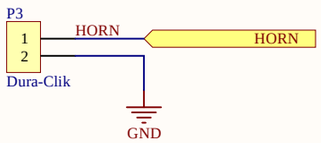
Steering Stalk Connector









PROJECT	MSXII_SteeringWheelInterfaceBoard.PrjPcb
DOCUMENT	Steering Wheel Interface - Mezzanine
PART NUMBER	VARIANT [No Variations]
DRAWN BY Jenny Xia	REVISION 2.0
LAST MODIFIED 2019-01-17	SHEET 1 OF 3

MIDNIGHT SUN

Engineering 5 - 1002
University of Waterloo
(519) 888-4567 x32978
hardware@uwmidsun.com

RC Low Pass Filter

fc = 116.17[Hz]

fc = 159154.94[Hz]

+12V
R1
4.7k
1/10W
LED1
Green
2V
GND

TURN_SIGNAL_STALK
TURN_SIGNAL_STALK
3V3
R2
1k
0.1%
1/10W
R3
15k
1%
1/10W
C1
10000pF
50V
U2J
C2
0.1µF
50V
X7R
U1A
R4
100
1/10W
C3
10000pF
50V
U2J
PA3_AN3_TURN_SIGNAL_STALK
PA3_AN3_TURN_SIGNAL_STALK

+12V
8
U1C
4
GND
+12V
C4
0.1µF
50V
X7R
GND

CC_CANCEL/RESUME
CC_CANCEL/RESUME
3V3
R5
1k
0.1%
1/10W
R6
15k
1%
1/10W
C5
10000pF
50V
U2J
C6
0.1µF
50V
X7R
U1B
R7
100
1/10W
C7
10000pF
50V
U2J
PA2_AN2_CC_CANCEL/RESUME
PA2_AN2_CC_CANCEL/RESUME

+12V
C8
4.7µF
25V
X5R
GND

CC_SPEED
CC_SPEED
3V3
R8
1k
0.1%
1/10W
R9
15k
1%
1/10W
C9
10000pF
50V
U2J
C10
0.1µF
50V
X7R
U2A
R10
100
1/10W
C11
10000pF
50V
U2J
PA1_AN1_CC_SPEED
PA1_AN1_CC_SPEED

+12V
8
U2C
4
GND
+12V
C12
0.1µF
50V
X7R
GND

TP1
TP
Test Point
GND

CC_DISTANCE
CC_DISTANCE
3V3
R11
1k
0.1%
1/10W
R12
15k
1%
1/10W
C13
10000pF
50V
U2J
C14
0.1µF
50V
X7R
U2B
R13
100
1/10W
C15
10000pF
50V
U2J
PA0_AN0_CC_DISTANCE
PA0_AN0_CC_DISTANCE

PROJECT	MSXII_SteeringWheelInterfaceBoard.PrjPcb
DOCUMENT	Steering Wheel Interface - Analog Inputs
PART NUMBER	VARIANT [No Variations]
DRAWN BY Jenny Xia	REVISION 2.0
LAST MODIFIED 2019-01-17	SHEET 2 OF 3

MIDNIGHT SUN

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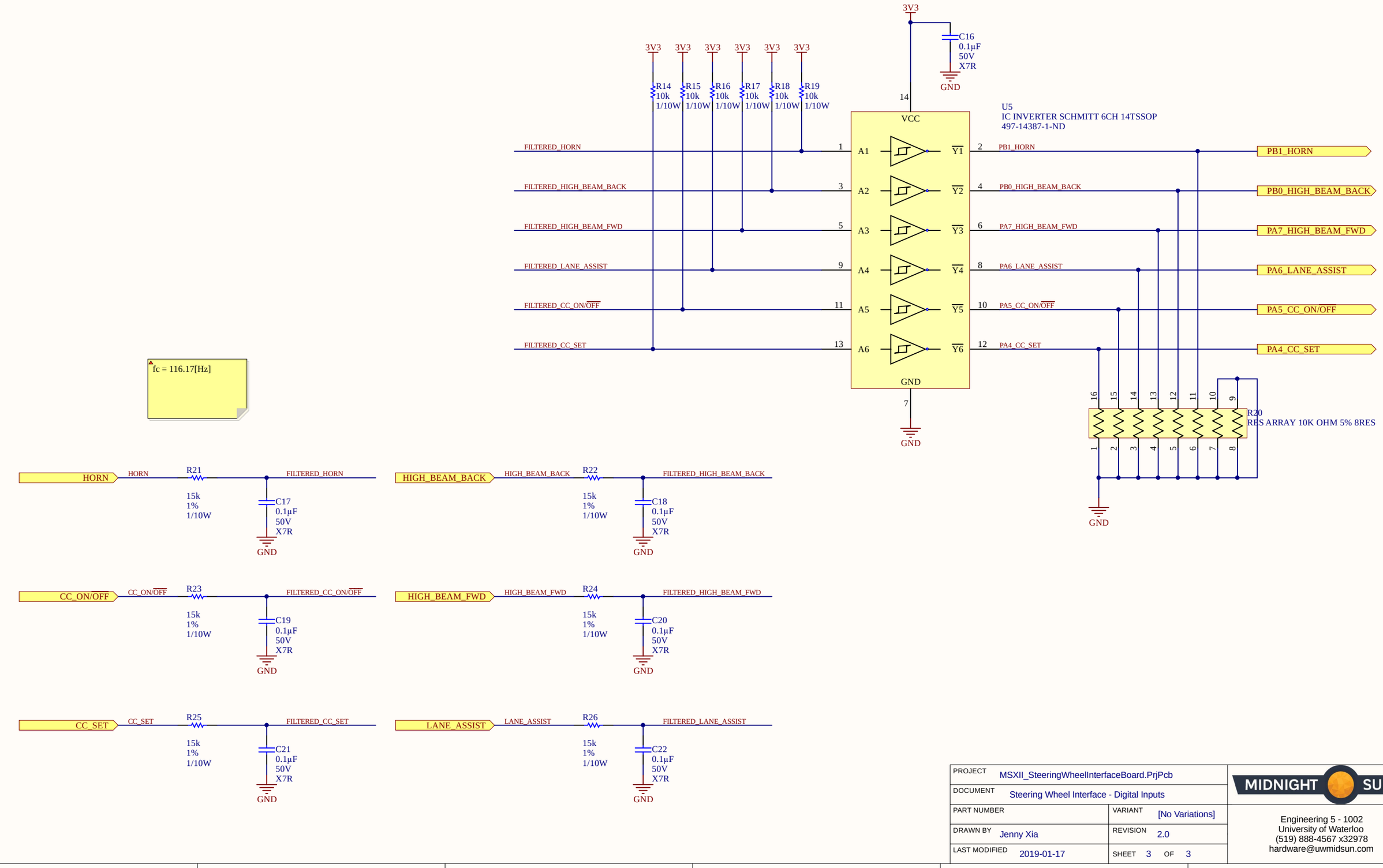
hardware@uwmidsun.com



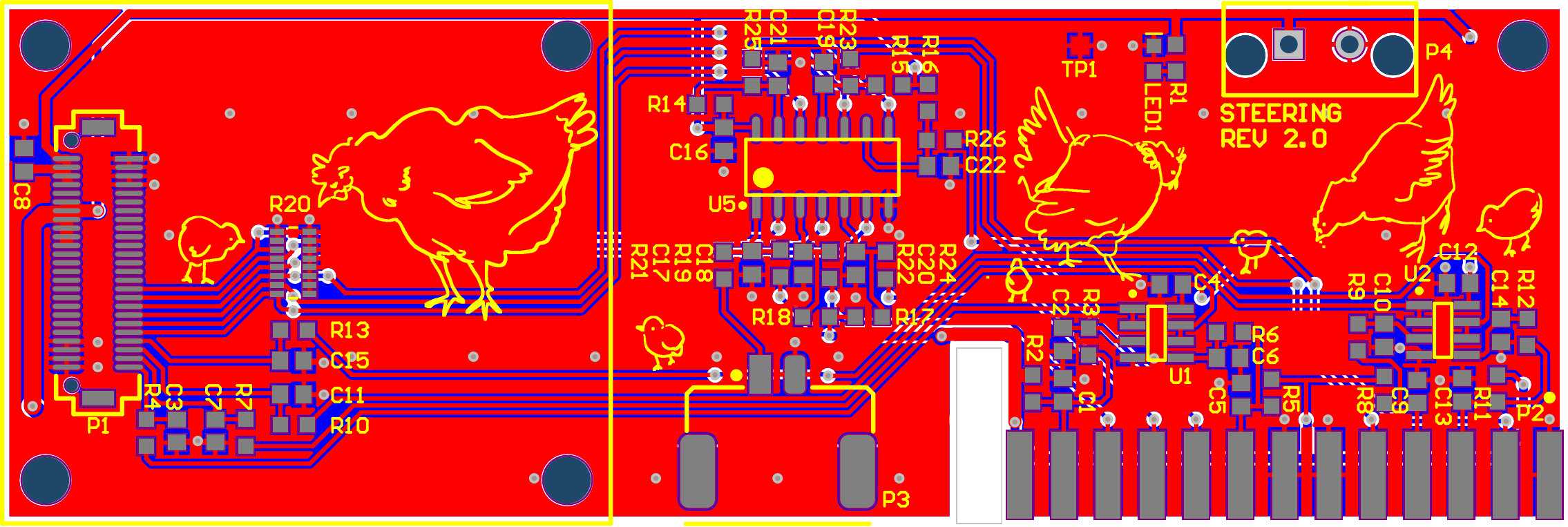
PROJECT	MSXII_SteeringWheelInterfaceBoard.PrjPcb
DOCUMENT	Steering Wheel Interface - Digital Inputs
PART NUMBER	
VARIANT	[No Variations]
DRAWN BY	Jenny Xia
REVISION	2.0
LAST MODIFIED	2019-01-17
SHEET	3 OF 3

MIDNIGHT SUN
Engineering 5 - 1002
University of Waterloo
(519) 888-4567 x32978
hardware@uwmidsun.com

Bill of Materials

Project:	SXII_SteeringWheelInterfaceBoard.PrjPcb
Revision:	2
Project Lead:	Jenny Xia
Generated On:	2019-01-17 18:20
Production Quantity:	1
Currency	CAD
Total Parts Count:	55

LibRef	Designator	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Order Qty 1	Supplier Subtotal 1
CAP CER 10nF 50V 5% X7R 0603	C1	KEMET	C0603C103J5JACTU	Digi-Key	399-13384-1-ND	0.49201	1	$ 0.49
CAP CER 0.1UF 50V 10% X7R 0603	C2	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 10nF 50V 5% X7R 0603	C3	KEMET	C0603C103J5JACTU	Digi-Key	399-13384-1-ND	0.49201	1	$ 0.49
CAP CER 0.1UF 50V 10% X7R 0603	C4	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 10nF 50V 5% X7R 0603	C5	KEMET	C0603C103J5JACTU	Digi-Key	399-13384-1-ND	0.49201	1	$ 0.49
CAP CER 0.1UF 50V 10% X7R 0603	C6	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 10nF 50V 5% X7R 0603	C7	KEMET	C0603C103J5JACTU	Digi-Key	399-13384-1-ND	0.49201	1	$ 0.49
CAP CER 4.7UF 25V 10% X5R 0603	C8	Murata	GRM188R61E475KE11D	Digi-Key	490-7203-1-ND	0.49201	1	$ 0.49
CAP CER 10nF 50V 5% X7R 0603	C9	KEMET	C0603C103J5JACTU	Digi-Key	399-13384-1-ND	0.49201	1	$ 0.49
CAP CER 0.1UF 50V 10% X7R 0603	C10	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 10nF 50V 5% X7R 0603	C11	KEMET	C0603C103J5JACTU	Digi-Key	399-13384-1-ND	0.49201	1	$ 0.49
CAP CER 0.1UF 50V 10% X7R 0603	C12	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 10nF 50V 5% X7R 0603	C13	KEMET	C0603C103J5JACTU	Digi-Key	399-13384-1-ND	0.49201	1	$ 0.49
CAP CER 0.1UF 50V 10% X7R 0603	C14	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 10nF 50V 5% X7R 0603	C15	KEMET	C0603C103J5JACTU	Digi-Key	399-13384-1-ND	0.49201	1	$ 0.49
CAP CER 0.1UF 50V 10% X7R 0603	C16	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 0.1UF 50V 10% X7R 0603	C17	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 0.1UF 50V 10% X7R 0603	C18	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 0.1UF 50V 10% X7R 0603	C19	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 0.1UF 50V 10% X7R 0603	C20	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 0.1UF 50V 10% X7R 0603	C21	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
CAP CER 0.1UF 50V 10% X7R 0603	C22	Kyocera AVX	06035C-104KAT2A	Digi-Key	478-5052-1-ND	0.22606	1	$ 0.23
LED GREEN CLEAR 2V 0603	LED1	Wurth Electronics	150060VS75000	Digi-Key	732-4980-1-ND	0.18617	1	$ 0.19
CONN 50POS Bergstak Plug 0.02"	P1	Amphenol FCI	10132797-055100LF	Digi-Key	609-5226-1-ND			
CONN 2POS DURA-CLIK 0.079" VERT	P3	Molex	560020-0220	Digi-Key	WM10862CT-ND	1.04	1	$ 1.04
CONN 2POS ULTRA-FIT 0.138"	P4	Molex	1722861302	Digi-Key	WM11673-ND	1.94	1	$ 1.94
RES 4.7K OHM 1% 1/10W 0603	R1	Yageo	RC0603FR-074K7L	Digi-Key	311-4.70KHRCT-ND	0.13298	1	$ 0.13
RES SMD 1K OHM 0.1% 1/10W 0603	R2	Panasonic	ERA3AEB102V	Digi-Key	P1.0KDBCT-ND	0.46541	1	$ 0.47
RES SMD 15K OHM 1% 1/10W 0603	R3	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
RES 100 OHM 1% 1/10W 0603	R4	Yageo	RC0603FR-07100RL	Digi-Key	311-100HRCT-ND	0.13298	1	$ 0.13
RES SMD 1K OHM 0.1% 1/10W 0603	R5	Panasonic	ERA3AEB102V	Digi-Key	P1.0KDBCT-ND	0.46541	1	$ 0.47
RES SMD 15K OHM 1% 1/10W 0603	R6	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
RES 100 OHM 1% 1/10W 0603	R7	Yageo	RC0603FR-07100RL	Digi-Key	311-100HRCT-ND	0.13298	1	$ 0.13
RES SMD 1K OHM 0.1% 1/10W 0603	R8	Panasonic	ERA3AEB102V	Digi-Key	P1.0KDBCT-ND	0.46541	1	$ 0.47
RES SMD 15K OHM 1% 1/10W 0603	R9	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
RES 100 OHM 1% 1/10W 0603	R10	Yageo	RC0603FR-07100RL	Digi-Key	311-100HRCT-ND	0.13298	1	$ 0.13
RES SMD 1K OHM 0.1% 1/10W 0603	R11	Panasonic	ERA3AEB102V	Digi-Key	P1.0KDBCT-ND	0.46541	1	$ 0.47
RES SMD 15K OHM 1% 1/10W 0603	R12	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
RES 100 OHM 1% 1/10W 0603	R13	Yageo	RC0603FR-07100RL	Digi-Key	311-100HRCT-ND	0.13298	1	$ 0.13
RES 10K OHM 1% 1/10W 0603	R14	Yageo Phycomp	RC0603FR-0710KL	Digi-Key	311-10.0KHRCT-ND	0.13298	1	$ 0.13
RES 10K OHM 1% 1/10W 0603	R15	Yageo Phycomp	RC0603FR-0710KL	Digi-Key	311-10.0KHRCT-ND	0.13298	1	$ 0.13
RES 10K OHM 1% 1/10W 0603	R16	Yageo Phycomp	RC0603FR-0710KL	Digi-Key	311-10.0KHRCT-ND	0.13298	1	$ 0.13
RES 10K OHM 1% 1/10W 0603	R17	Yageo Phycomp	RC0603FR-0710KL	Digi-Key	311-10.0KHRCT-ND	0.13298	1	$ 0.13
RES 10K OHM 1% 1/10W 0603	R18	Yageo Phycomp	RC0603FR-0710KL	Digi-Key	311-10.0KHRCT-ND	0.13298	1	$ 0.13
RES 10K OHM 1% 1/10W 0603	R19	Yageo Phycomp	RC0603FR-0710KL	Digi-Key	311-10.0KHRCT-ND	0.13298	1	$ 0.13
RES ARRAY 10K OHM 5% 8RES EXB-2HV103JV	R20	Panasonic	EXB2HV103JV	Digi-Key	Y1103CT-ND	0.38563	1	$ 0.39
RES SMD 15K OHM 1% 1/10W 0603	R21	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
RES SMD 15K OHM 1% 1/10W 0603	R22	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
RES SMD 15K OHM 1% 1/10W 0603	R23	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
RES SMD 15K OHM 1% 1/10W 0603	R24	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
RES SMD 15K OHM 1% 1/10W 0603	R25	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
RES SMD 15K OHM 1% 1/10W 0603	R26	Yageo	RC0603FR-0715KL	Digi-Key	311-15.0KHRCT-ND	0.13298	1	$ 0.13
IC OP AMP DUAL GP RR 10MHZ 8-VSSOP	U1	Texas Instruments	OPA2197IDGKR	Digi-Key	296-47349-1-ND	3.2	1	$ 3.20
IC OP AMP DUAL GP RR 10MHZ 8-VSSOP	U2	Texas Instruments	OPA2197IDGKR	Digi-Key	296-47349-1-ND	3.2	1	$ 3.20
IC INVERTER SCHMITT 6CH 14TSSOP	U5	STMicroelectronics	M74HC14YTTR	Digi-Key	497-14387-1-ND	0.58509	1	$ 0.59
							Total:	$ 22.56


STEERING
REV 2.0
P1
P2
P3
P4
TP1
LED1
U1
U2
U5
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
C1
C2
C3
C4
C5
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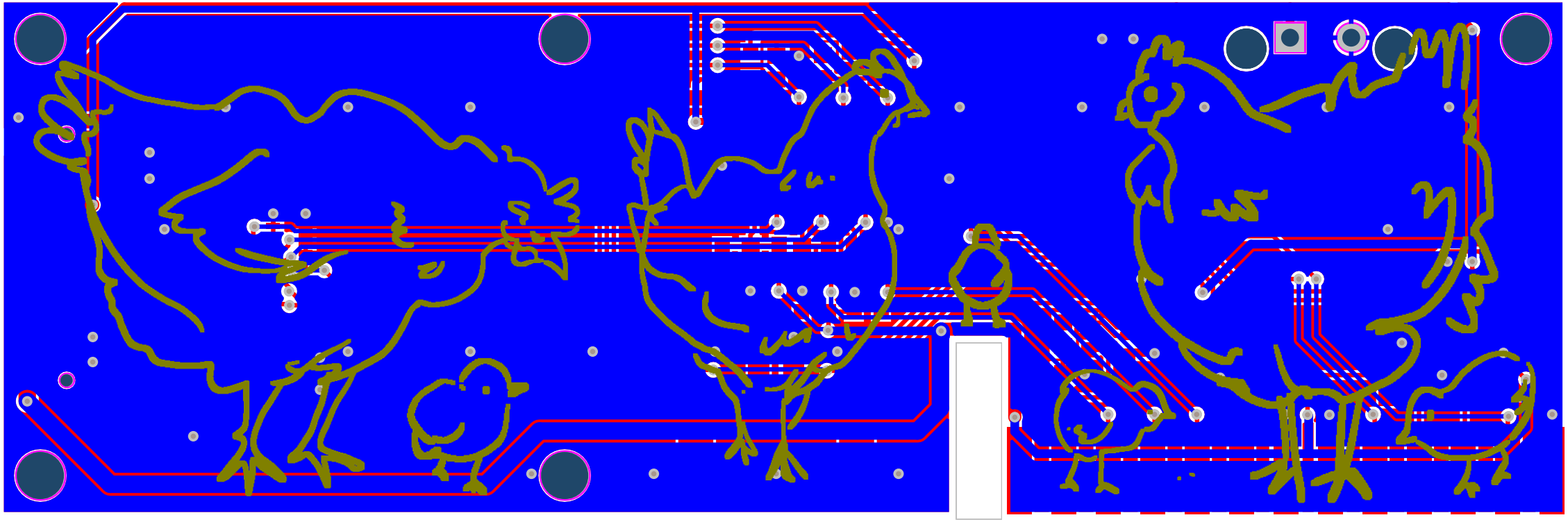
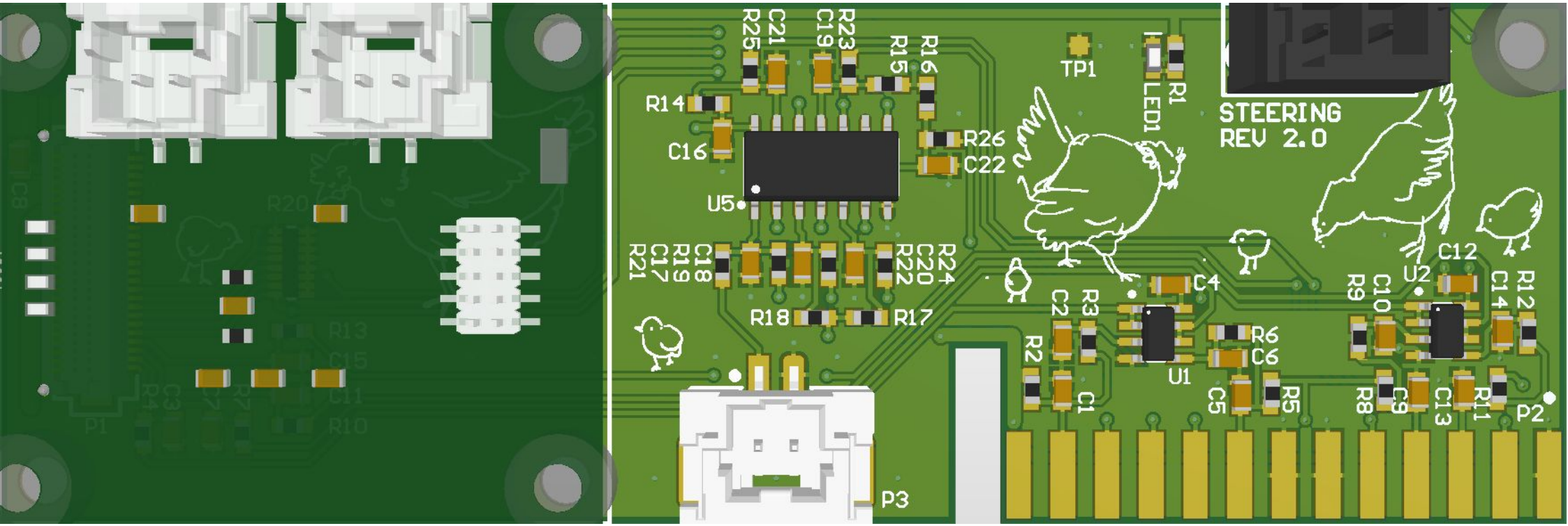
C19
C20
C21
C22




STEERING
REV 2.0
TP1
LED1
R1
R14
C16
U5
R26
C22
R25
C21
R23
C19
R15
R16
R18
R17
C18
R19
C17
R21
R24
C20
R22
C4
C2
R3
R2
C1
U1
R6
C6
C5
R5
U2
C12
R9
C10
C14
R12
R8
C9
C13
R11
P2
P3

Electrical Rules Check Report

Class	Document	Message
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Duplicate Net Names Wire PB1_HORN
Warning	Steering Wheel Interface Digital Inputs.SchDoc	Floating Net Label PB1_HORN at (1059,740)
Error	Steering Wheel Interface Analog Inputs.SchDoc	Net CC_CANCEL/RESUME contains multiple Input Ports (Port CC_CANCEL/RESUME,Port CC_CANCEL/RESUME)
Error	Steering Wheel Interface Analog Inputs.SchDoc	Net CC_DISTANCE contains multiple Input Ports (Port CC_DISTANCE,Port CC_DISTANCE)
Error	Steering Wheel Interface Digital Inputs.SchDoc	Net CC_ON/O\F\F\ contains multiple Input Ports (Port CC_ON/O\F\F\,Port CC_ON/O\F\F\)
Error	Steering Wheel Interface Digital Inputs.SchDoc	Net CC_SET contains multiple Input Ports (Port CC_SET,Port CC_SET)
Error	Steering Wheel Interface Analog Inputs.SchDoc	Net CC_SPEED contains multiple Input Ports (Port CC_SPEED,Port CC_SPEED)
Error	Steering Wheel Interface Digital Inputs.SchDoc	Net HIGH_BEAM_BACK contains multiple Input Ports (Port HIGH_BEAM_BACK,Port HIGH_BEAM_BACK)
Error	Steering Wheel Interface Digital Inputs.SchDoc	Net HIGH_BEAM_FWD contains multiple Input Ports (Port HIGH_BEAM_FWD,Port HIGH_BEAM_FWD)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net HORN contains multiple Input Ports (Port HORN,Port HORN)
Error	Steering Wheel Interface Digital Inputs.SchDoc	Net LANE_ASSIST contains multiple Input Ports (Port LANE_ASSIST,Port LANE_ASSIST)
Warning	Steering Wheel Interface Analog Inputs.SchDoc	Net NetC2_1 has no driving source (Pin C2-1,Pin R3-1,Pin U1-3)
Warning	Steering Wheel Interface Analog Inputs.SchDoc	Net NetC6_1 has no driving source (Pin C6-1,Pin R6-1,Pin U1-5)
Warning	Steering Wheel Interface Analog Inputs.SchDoc	Net NetC10_1 has no driving source (Pin C10-1,Pin R9-1,Pin U2-3)
Warning	Steering Wheel Interface Analog Inputs.SchDoc	Net NetC14_1 has no driving source (Pin C14-1,Pin R12-1,Pin U2-5)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PA8 has only one pin (Pin P1-7)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PA9 has only one pin (Pin P1-6)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PA10 has only one pin (Pin P1-5)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PA15/LED_RED has only one pin (Pin P1-39)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB2 has only one pin (Pin P1-15)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB3/LED_GREEN has only one pin (Pin P1-38)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB4/LED_BLUE has only one pin (Pin P1-37)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB5/LED_BLUE has only one pin (Pin P1-36)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB6/USART1_TX has only one pin (Pin P1-34)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB7/USART1_RX has only one pin (Pin P1-33)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB8/I2C1_SCL has only one pin (Pin P1-32)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB9/I2C1_SDA has only one pin (Pin P1-31)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB10/USART3_TX/I2C2_SCL has only one pin (Pin P1-14)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB11/USART3_RX/I2C2_SDA has only one pin (Pin P1-13)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB12/SPI2_NSS has only one pin (Pin P1-11)
Error	Steering Wheel Carrier Board	Net PB13/SPI2_SCK has only one pin (Pin P1-10)

Class	Document	Message
	Mezzanine.SchDoc	
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB14/SPI2_MISO has only one pin (Pin P1-9)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PB15/SPI2_MOSI has only one pin (Pin P1-8)
Error	Steering Wheel Carrier Board Mezzanine.SchDoc	Net PC13 has only one pin (Pin P1-30)
Error	Steering Wheel Interface Analog Inputs.SchDoc	Net TURN_SIGNAL_STALK contains multiple Input Ports (Port TURN_SIGNAL_STALK,Port TURN_SIGNAL_STALK)
Warning	Steering Wheel Interface Digital Inputs.SchDoc	Off grid Net Label PB1_HORN at 10590.49mil,7400mil

Design Rules Verification Report

Filename : C:\Users\jieni\Documents\Github\hardware\MSXII_SteeringWheelInterfaceBoard\

Warnings 0
Rule Violations 89

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=0.152mm) (All),(All)	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Un-Routed Net Constraint ((All))	0
Modified Polygon (Allow modified: No), (Allow shelved: No)	0
Width Constraint (Min=0.152mm) (Max=2.54mm) (Preferred=0.254mm) (All)	0
Power Plane Connect Rule(Relief Connect)(Expansion=0.508mm) (Conductor Width=0.254mm) (Air Gap=0.254mm)	0
Minimum Annular Ring (Minimum=0.06mm) (All)	0
Hole Size Constraint (Min=0.3mm) (Max=6.3mm) (All)	0
Hole To Hole Clearance (Gap=0.254mm) (All),(All)	0
Minimum Solder Mask Sliver (Gap=0mm) (All),(All)	0
Silk To Solder Mask (Clearance=0.178mm) (IsPad),(All)	52
Silk to Silk (Clearance=0.254mm) (All),(All)	6
Net Antennae (Tolerance=0mm) (All)	0
Board Clearance Constraint (Gap=0mm) (All)	31
Height Constraint (Min=0mm) (Max=25.4mm) (Prefered=12.7mm) (All)	0
Total	89

Silk To Solder Mask (Clearance=0.178mm) (IsPad),(All)
Silk To Solder Mask Clearance Constraint: (0.125mm < 0.178mm) Between Pad C13-1(84mm,7mm) on Top Layer And Text "C13" (82.5mm,7.75mm) on
Silk To Solder Mask Clearance Constraint: (0.175mm < 0.178mm) Between Pad C13-1(84mm,7mm) on Top Layer And Text "R11" (84.75mm,7.75mm) on
Silk To Solder Mask Clearance Constraint: (0.092mm < 0.178mm) Between Pad C3-1(10.034mm,6mm) on Top Layer And Text "C3" (9.5mm,7.95mm) on
Silk To Solder Mask Clearance Constraint: (0.092mm < 0.178mm) Between Pad C7-1(12.25mm,6mm) on Top Layer And Text "C7" (11.75mm,7.95mm) on
Silk To Solder Mask Clearance Constraint: (0.005mm < 0.178mm) Between Pad C9-1(81.38mm,6.915mm) on Top Layer And Text "C9" (80mm,7.75mm) on
Silk To Solder Mask Clearance Constraint: (0.122mm < 0.178mm) Between Pad C9-2(81.38mm,8.265mm) on Top Layer And Text "C9" (80mm,7.75mm) on
Silk To Solder Mask Clearance Constraint: (0.163mm < 0.178mm) Between Pad P3-3(40mm,3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad R11-2(86mm,7mm) on Top Layer And Text "R11" (84.75mm,7.75mm) on
Silk To Solder Mask Clearance Constraint: (0.105mm < 0.178mm) Between Pad R23-2(48.763mm,26.762mm) on Top Layer And Text "R23"
Silk To Solder Mask Clearance Constraint: (0.138mm < 0.178mm) Between Pad R25-2(43.125mm,26.73mm) on Top Layer And Text "R25"
Silk To Solder Mask Clearance Constraint: (0.117mm < 0.178mm) Between Pad R4-1(8.284mm,6mm) on Top Layer And Text "R4" (8.25mm,7.95mm) on
Silk To Solder Mask Clearance Constraint: (0.105mm < 0.178mm) Between Pad R6-2(71.395mm,11.025mm) on Top Layer And Text "R6" (72mm,10.5mm)
Silk To Solder Mask Clearance Constraint: (0.117mm < 0.178mm) Between Pad R7-1(14mm,6mm) on Top Layer And Text "R7" (13.5mm,7.95mm) on Top
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad R8-2(79.5mm,6.915mm) on Top Layer And Text "C9" (80mm,7.75mm) on
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-1(65.025mm,12.375mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-1(65.025mm,12.375mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-2(65.025mm,11.425mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-3(65.025mm,10.475mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-4(65.025mm,9.525mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-4(65.025mm,9.525mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-5(67.775mm,9.525mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-5(67.775mm,9.525mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-6(67.775mm,10.475mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U1-7(67.775mm,11.425mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.08mm < 0.178mm) Between Pad U1-8(67.775mm,12.375mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.08mm < 0.178mm) Between Pad U1-8(67.775mm,12.375mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-1(81.5mm,12.541mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-1(81.5mm,12.541mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-2(81.5mm,11.591mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-3(81.5mm,10.641mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-4(81.5mm,9.691mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-4(81.5mm,9.691mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-5(84.25mm,9.691mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-5(84.25mm,9.691mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-6(84.25mm,10.641mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.05mm < 0.178mm) Between Pad U2-7(84.25mm,11.591mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.08mm < 0.178mm) Between Pad U2-8(84.25mm,12.541mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (0.08mm < 0.178mm) Between Pad U2-8(84.25mm,12.541mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-1(43.363mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-10(48.443mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-11(47.173mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-12(45.903mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-13(44.633mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-14(43.363mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-2(44.633mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-3(45.903mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-4(47.173mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-5(48.443mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-6(49.713mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-7(50.983mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-8(50.983mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-9(49.713mm,22.7mm) on Top Layer And Track

Silk to Silk (Clearance=0.254mm) (All),(All)
Silk To Silk Clearance Constraint: (0.18mm < 0.254mm) Between Arc (42.588mm,18.3mm) on Top Overlay And Text "U5" (40.75mm,18mm) on Top
Silk To Silk Clearance Constraint: (0.15mm < 0.254mm) Between Region (2 hole(s)) Top Overlay And Text "U2" (80.75mm,14mm) on Top Overlay Silk Text
Silk To Silk Clearance Constraint: (0.227mm < 0.254mm) Between Text "C20" (52.75mm,16mm) on Top Overlay And Text "R22" (51.573mm,16mm) on Top
Silk To Silk Clearance Constraint: (0.048mm < 0.254mm) Between Text "P1" (5mm,5.25mm) on Top Overlay And Track (4.1mm,6.3mm)(6.9mm,6.3mm) on
Silk To Silk Clearance Constraint: (0.21mm < 0.254mm) Between Text "R4" (8.25mm,7.95mm) on Top Overlay And Track (6.9mm,7.2mm)(7.9mm,7.2mm)
Silk To Silk Clearance Constraint: (0.148mm < 0.254mm) Between Text "R4" (8.25mm,7.95mm) on Top Overlay And Track (7.9mm,7.2mm)(7.9mm,8.5mm)

Board Clearance Constraint (Gap=0mm) (All)
Board Outline Clearance(Cutout Edge): (0.32mm < 0.406mm) Between Board Cutout (Multi-Layer)Region (0 hole(s)) Multi-Layer And Pad
Board Outline Clearance(Cutout Edge): (0.375mm < 0.406mm) Between Board Cutout (Multi-Layer)Region (0 hole(s)) Multi-Layer And Track
Board Outline Clearance(Cutout Edge): (0.375mm < 0.406mm) Between Board Cutout (Multi-Layer)Region (0 hole(s)) Multi-Layer And Track
Board Outline Clearance(Cutout Edge): (0.375mm < 0.406mm) Between Board Cutout (Multi-Layer)Region (0 hole(s)) Multi-Layer And Track
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-1(89mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-10(66.14mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-11(63.6mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-12(61.06mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-13(58.52mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-2(86.46mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-3(83.92mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-4(81.38mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-5(78.84mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-6(76.3mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-7(73.76mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-8(71.22mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-9(68.68mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Region (0 hole(s)) Bottom Overlay
Board Outline Clearance(Outline Edge): (0.35mm < 0.406mm) Between Board Edge And Text "C19" (47mm,29.5mm) on Top Overlay
Board Outline Clearance(Outline Edge): (0.35mm < 0.406mm) Between Board Edge And Text "C21" (44.25mm,29.5mm) on Top Overlay
Board Outline Clearance(Outline Edge): (0.35mm < 0.406mm) Between Board Edge And Text "R23" (48.25mm,29.5mm) on Top Overlay
Board Outline Clearance(Outline Edge): (0.35mm < 0.406mm) Between Board Edge And Text "R25" (42.773mm,29.5mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (0mm,0mm)(0mm,30mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (0mm,0mm)(35mm,0mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (0mm,30mm)(35mm,30mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (35mm,0mm)(35mm,30mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (39.325mm,-0.02mm)(49.875mm,-0.02mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (70.255mm,24.64mm)(70.255mm,29.94mm) on Top
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (70.255mm,29.94mm)(78.5mm,29.94mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (77.5mm,29.94mm)(81.33mm,29.94mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (81.33mm,24.64mm)(81.33mm,29.94mm) on Top Overlay