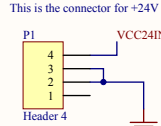


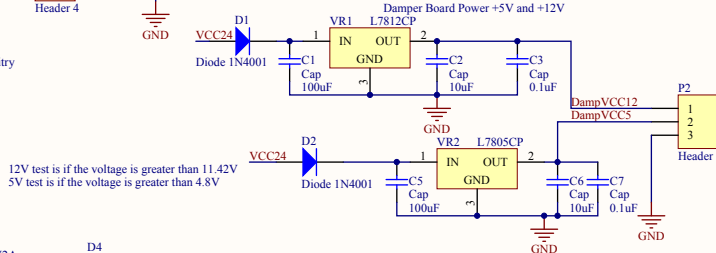
POWER SUPPLY BOARD

This Board is to supply ample power to the rest of the circuit
Main controller board is taken care off with the other connector
Mic preamp is also taken care of because it needs its own power.



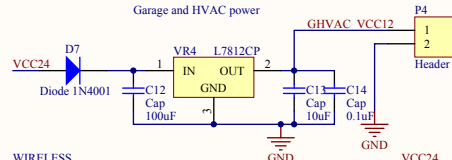
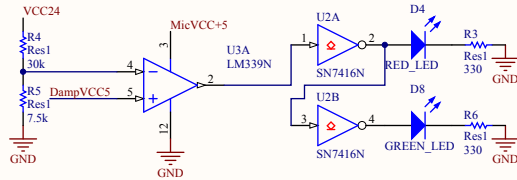
This section is to indicate whether the voltages are good or bad.
if the voltage is too low then the LED will go red
else the led will be green if good. we will use MicVCC+5 for circuitry

we will do voltage Dividers to distinguish which voltage is greater
we won't test the -5V due to comparing



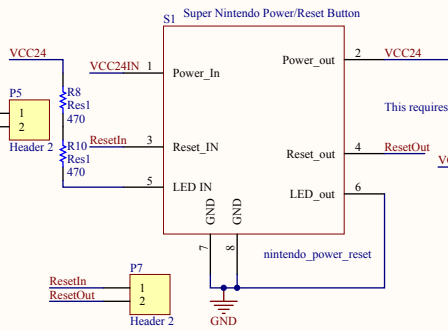
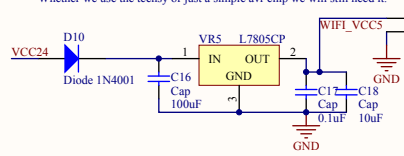
Test Damp

12V test is if the voltage is greater than 11.42V
5V test is if the voltage is greater than 4.8V



WIRELESS

We need 5V for the Wireless communications portion
Whether we use the teensy or just a simple avr chip we will still need it.



tie main and power

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

Header 2

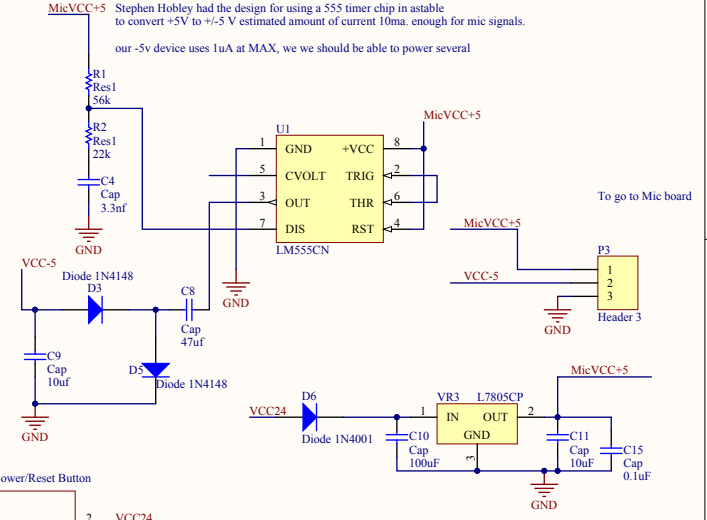
Header 2

Header 2

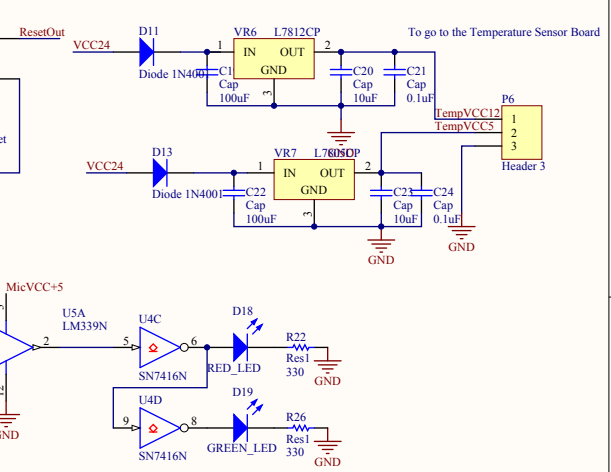
Header 2

Power Supply for the analog channels
Positive and negative 5V

Stephen Hobley had the design for using a 555 timer chip in astable
to convert +5V to +/-5 V estimated amount of current 10ma. enough for mic signals.
our -5v device uses 1uA at MAX, we should be able to power several



Power supply for the temperature Sensors
This requires +5V and gnd, it uses analog chips, but we will always be in the positive range so we just need positive



Engineer: Levi Balling	Title: Epic Cube Power Supply	U of U Computer Engineering 50 S. Central Campus Dr. Rm. 3280 MEB Salt Lake City, UT	Smart Home
Drawn By: Levi Balling	Size: B Number: 1 Revision: 1 Project: Smart Home		
Checked By: *	Date: 8/17/2012	File: PowerAndFanBoard SchDoc	
Date: 11:36:20 PM	Time: 11:36:20 PM	Website: www.eng.utah.edu/~lbaling/SmartHome	
Sheet 5 of 13			

Bill of Materials

Epic Cube Power Supply

Source Data From: PowerBoard.PrjPcb
Project: PowerBoard.PrjPcb
Variant: None

Creation Date: 8/17/2012 11:36:28 PM
Print Date: 17-Aug-12 11:36:32 PM

Footprint	Comment	LibRef	Designator	Description	Quantity
RAD-0.3	Cap	Cap	C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24	Capacitor	24
DO-41	Diode 1N4001	Diode 1N4001	D1, D2, D6, D7, D10, D11, D13	1 Amp General Purpose Rectifier	7
DO-35	Diode 1N4148	Diode 1N4148	D3, D5	High Conductance Fast Diode	2
LED	RED_LED	LED0	D4, D9, D14, D15, D18, D20, D21	Typical INFRARED GaAs LED	7
LED	GREEN_LED	LED0	D8, D12, D16, D17, D19, D22, D23	Typical INFRARED GaAs LED	7
MainPowerConnector	Header 4	Header 4	P1	Header, 4-Pin	1
HDR1X3	Header 3	Header 3	P2, P3, P6	Header, 3-Pin	3
HDR1X2	Header 2	Header 2	P4, P5, P7, P8	Header, 2-Pin	4
AXIAL-0.3	Res1	Res1	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, R27, R28, R29, R30, R31, R32	Resistor	32
PCBComponent_1	nintendo_power_reset	nintendo_power_reset	S1		1
N08E	LM555CN	LM555CN	U1	Timer	1
N014	SN7416N	SN7416N	U2, U4, U6	Hex Inverter Buffer / Driver with High-Voltage Outputs	3
N14A	LM339N	LM339N	U3, U5	Low Power Low Offset Voltage Quad Comparator	2
ISOWATT220AB	L7812CP	L7805CP	VR1, VR4, VR6	Positive Voltage Regulator	3
ISOWATT220AB	L7805CP	L7805CP	VR2, VR3, VR5, VR7	Positive Voltage Regulator	4
					101

Approved	Notes