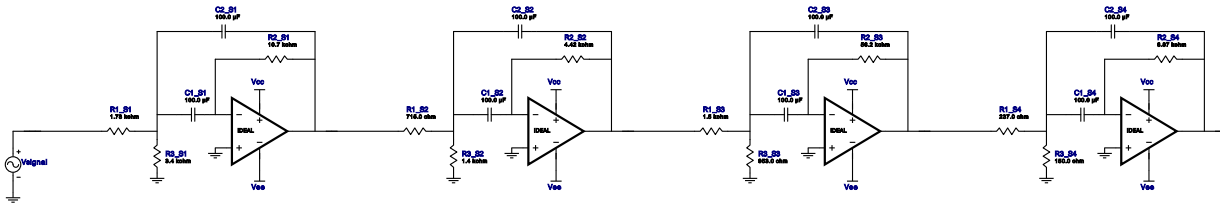


Type : Bandpass
 Response : Chebyshev
 Order : 8
 Number of Stages : 4

Filter Design Report

Design : Bandpass Filter - 8th order Chebyshev
 Design ID: 34



Electrical BOM

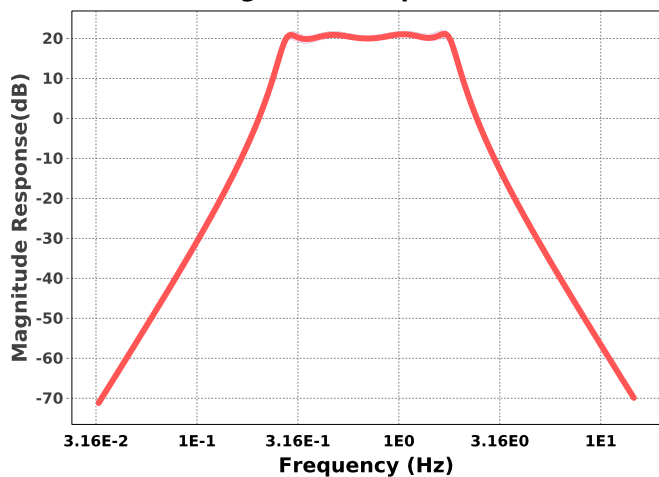
#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S1	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
2.	A1_S2	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
3.	A1_S3	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
4.	A1_S4	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
5.	C1_S1	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
6.	C1_S2	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
7.	C1_S3	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
8.	C1_S4	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
9.	C2_S1	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
10.	C2_S2	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
11.	C2_S3	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
12.	C2_S4	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
13.	R1_S1	Generic	Ideal	Res= 1780.0ohm Tolerance= 1%	1
14.	R1_S2	Generic	Ideal	Res= 715.0ohm Tolerance= 1%	1
15.	R1_S3	Generic	Ideal	Res= 1500.0ohm Tolerance= 1%	1
16.	R1_S4	Generic	Ideal	Res= 237.0ohm Tolerance= 1%	1
17.	R2_S1	Generic	Ideal	Res= 10700.0ohm Tolerance= 1%	1

#	Name	Manufacturer	Part Number	Properties	Qty
18.	R2_S2	Generic	Ideal	Res= 4420.0ohm Tolerance= 1%	1
19.	R2_S3	Generic	Ideal	Res= 56200.0ohm Tolerance= 1%	1
20.	R2_S4	Generic	Ideal	Res= 8870.0ohm Tolerance= 1%	1
21.	R3_S1	Generic	Ideal	Res= 3400.0ohm Tolerance= 1%	1
22.	R3_S2	Generic	Ideal	Res= 1400.0ohm Tolerance= 1%	1
23.	R3_S3	Generic	Ideal	Res= 953.0ohm Tolerance= 1%	1
24.	R3_S4	Generic	Ideal	Res= 150.0ohm Tolerance= 1%	1

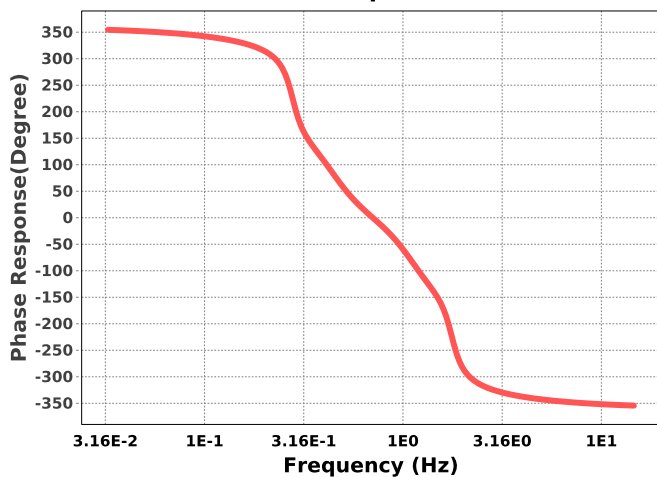
Sensitivity Analysis

#	Name	Series	Tolerance
1.	Cap	E48	2%
2.	Res	E96	1%

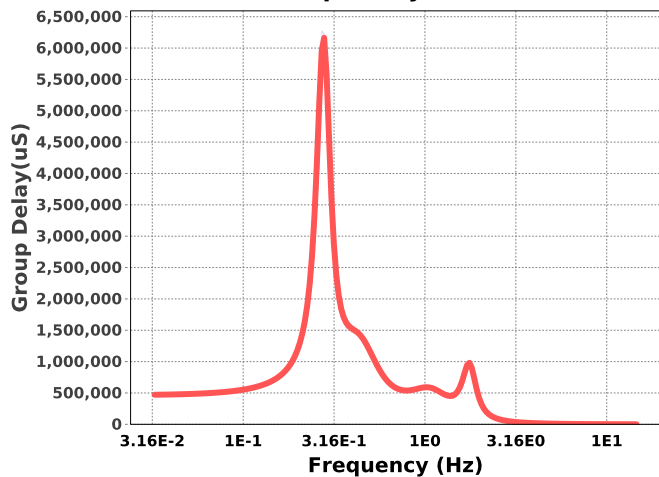
Magnitude Response



Phase Response



Group Delay



Design Inputs

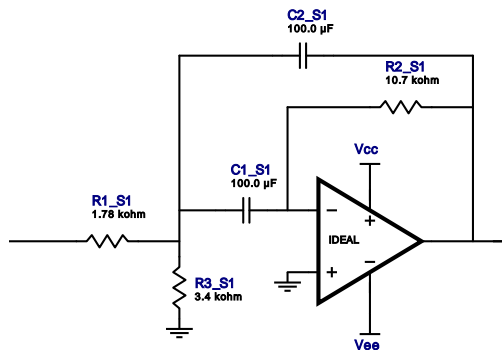
#	Name	Value	Description
1.	FilterType	bandpass	
2.	FilterResponse	Chebyshev	
3.	FilterOrder	8.0	
4.	FilterTopology	Multiple Feedback	
5.	NumberOfStages	4.0	
6.	CenterFrequency	700.0 m	
7.	StopbandAttenuation	-76.908	
8.	PassbandBandwidth	1.5	
9.	StopbandBandwidth	10.0	
10.	Gain	10.0	
11.	DualSupply	+/-3.30 V	Power supply(s) to active chips
12.	ResistorTolerance	E96	Resistor series - 1% Passive resistor tolerance
13.	CapacitorTolerance	E48	Capacitor series - 2% Passive capacitor tolerance

Design Assistance

1. **IDEAL** Product Folder : <http://www.ti.com/product/IDEAL> : contains the data sheet and other resources.

Filter Stage :1

Cutoff Frequency 450.136 mHz
 Min GBW Reqd 209.989 Hz
 Stage Gain 3.006 V/V
 Stage Q 1.513
 Stage Topology Multiple Feedback

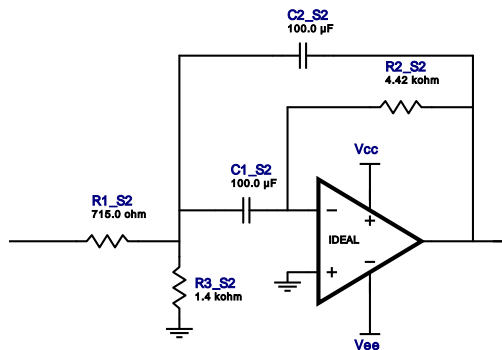


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S1	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
2.	C1_S1	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
3.	C2_S1	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
4.	R1_S1	Generic	Ideal	Res= 1780.0ohm Tolerance= 1%	1
5.	R2_S1	Generic	Ideal	Res= 10700.0ohm Tolerance= 1%	1
6.	R3_S1	Generic	Ideal	Res= 3400.0ohm Tolerance= 1%	1

Filter Stage :2

Cutoff Frequency 1.1 Hz
 Min GBW Req'd 513.316 Hz
 Stage Gain 3.091 V/V
 Stage Q 1.528
 Stage Topology Multiple Feedback

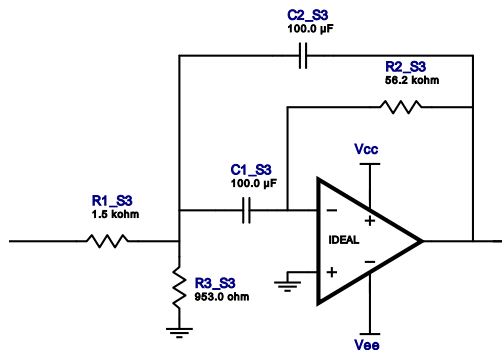


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S2	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
2.	C1_S2	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
3.	C2_S2	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
4.	R1_S2	Generic	Ideal	Res= 715.0ohm Tolerance= 1%	1
5.	R2_S2	Generic	Ideal	Res= 4420.0ohm Tolerance= 1%	1
6.	R3_S2	Generic	Ideal	Res= 1400.0ohm Tolerance= 1%	1

Filter Stage :3

Cutoff Frequency 278.105 mHz
 Min GBW Req'd 2.499 kHz
 Stage Gain 18.733 V/V
 Stage Q 4.91
 Stage Topology Multiple Feedback

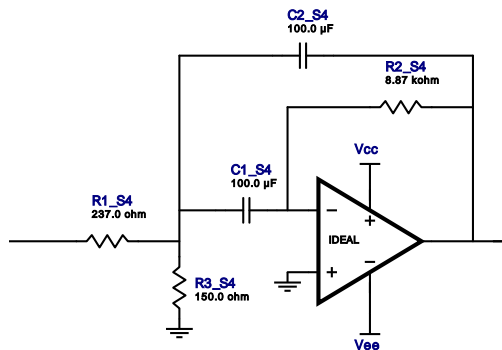


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S3	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
2.	C1_S3	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
3.	C2_S3	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
4.	R1_S3	Generic	Ideal	Res= 1500.0ohm Tolerance= 1%	1
5.	R2_S3	Generic	Ideal	Res= 56200.0ohm Tolerance= 1%	1
6.	R3_S3	Generic	Ideal	Res= 953.0ohm Tolerance= 1%	1

Filter Stage :4

Cutoff Frequency 1.763 Hz
 Min GBW Req'd 15.82 kHz
 Stage Gain 18.713 V/V
 Stage Q 4.913
 Stage Topology Multiple Feedback



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty
1.	A1_S4	Texas Instruments Inc.	IDEAL	GbwTyp= 0MHz VccMax= 0V VccMin= 0V	1
2.	C1_S4	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
3.	C2_S4	Generic	Ideal	Cap= 100.0 uF Tolerance= 2.0 %	1
4.	R1_S4	Generic	Ideal	Res= 237.0ohm Tolerance= 1%	1
5.	R2_S4	Generic	Ideal	Res= 8870.0ohm Tolerance= 1%	1
6.	R3_S4	Generic	Ideal	Res= 150.0ohm Tolerance= 1%	1

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