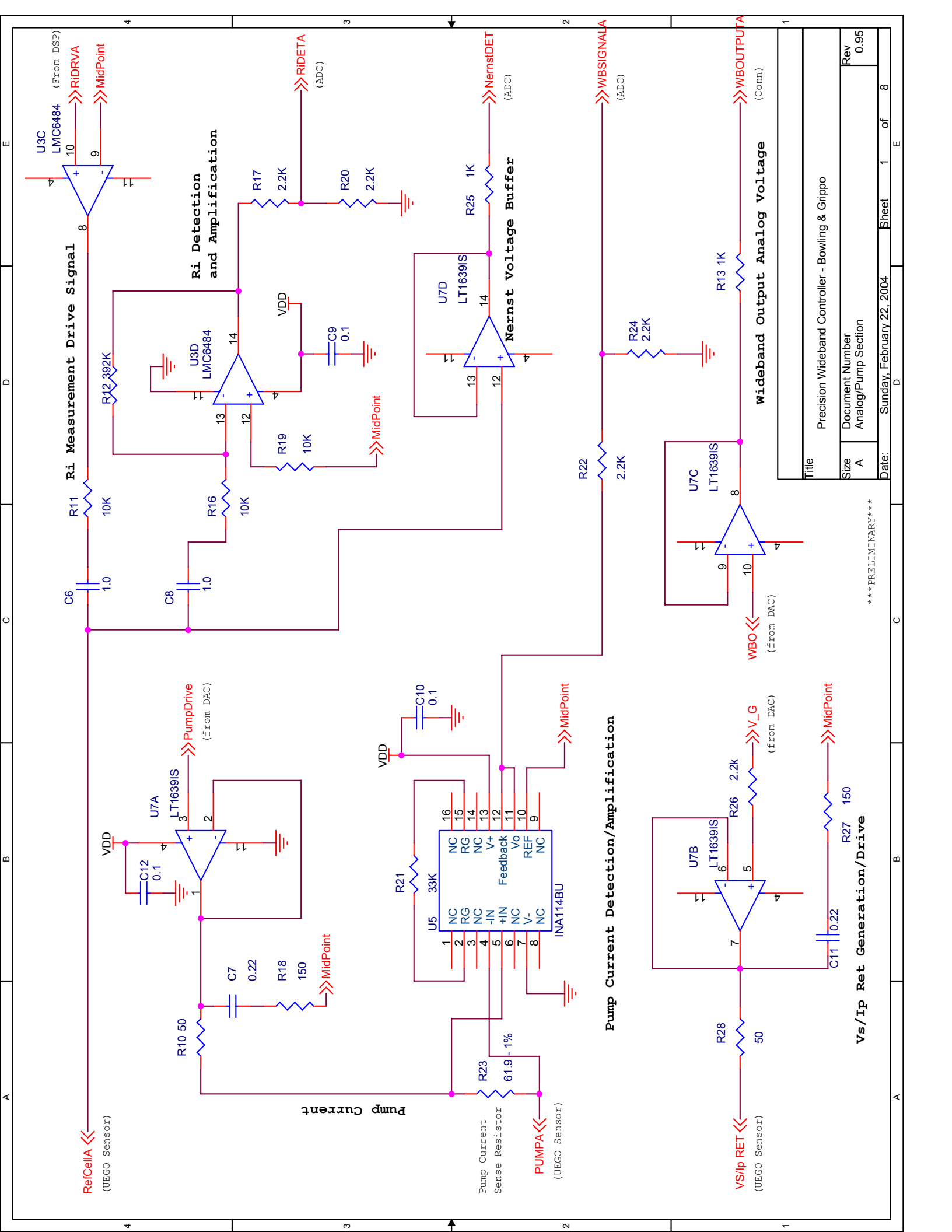


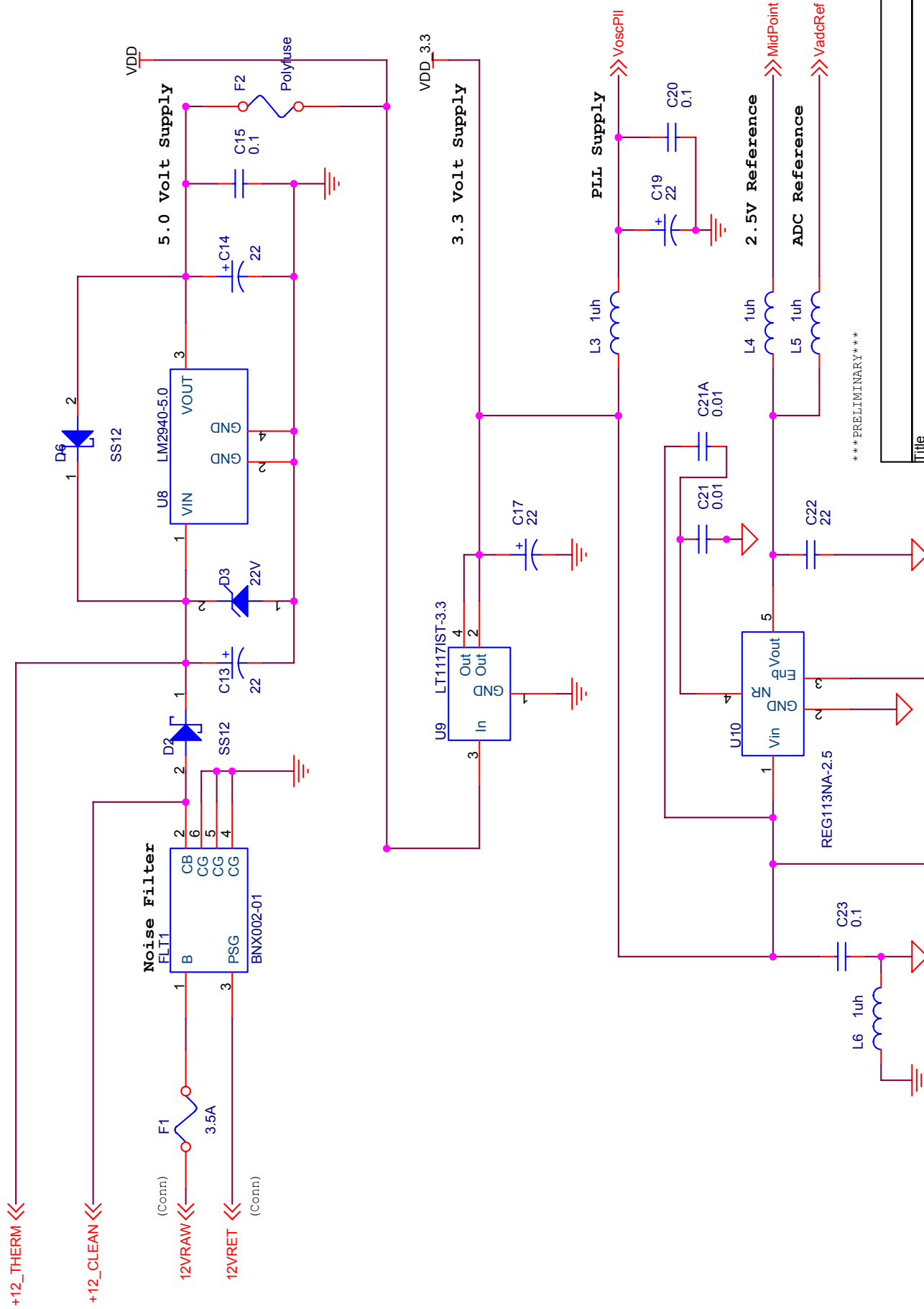
\*\*\*PRELIMINARY\*\*\*

Title		Precision Wideband Controller - Bowling & Grippo	
Size	A	Document Number	Heater Switching Power Supply
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Title		Precision Wideband Controller - Bowling & Grippo	
Size	A	Document Number	Analogy/Pump Section
Date:	Sunday, February 22, 2004	Sheet	1 of 8
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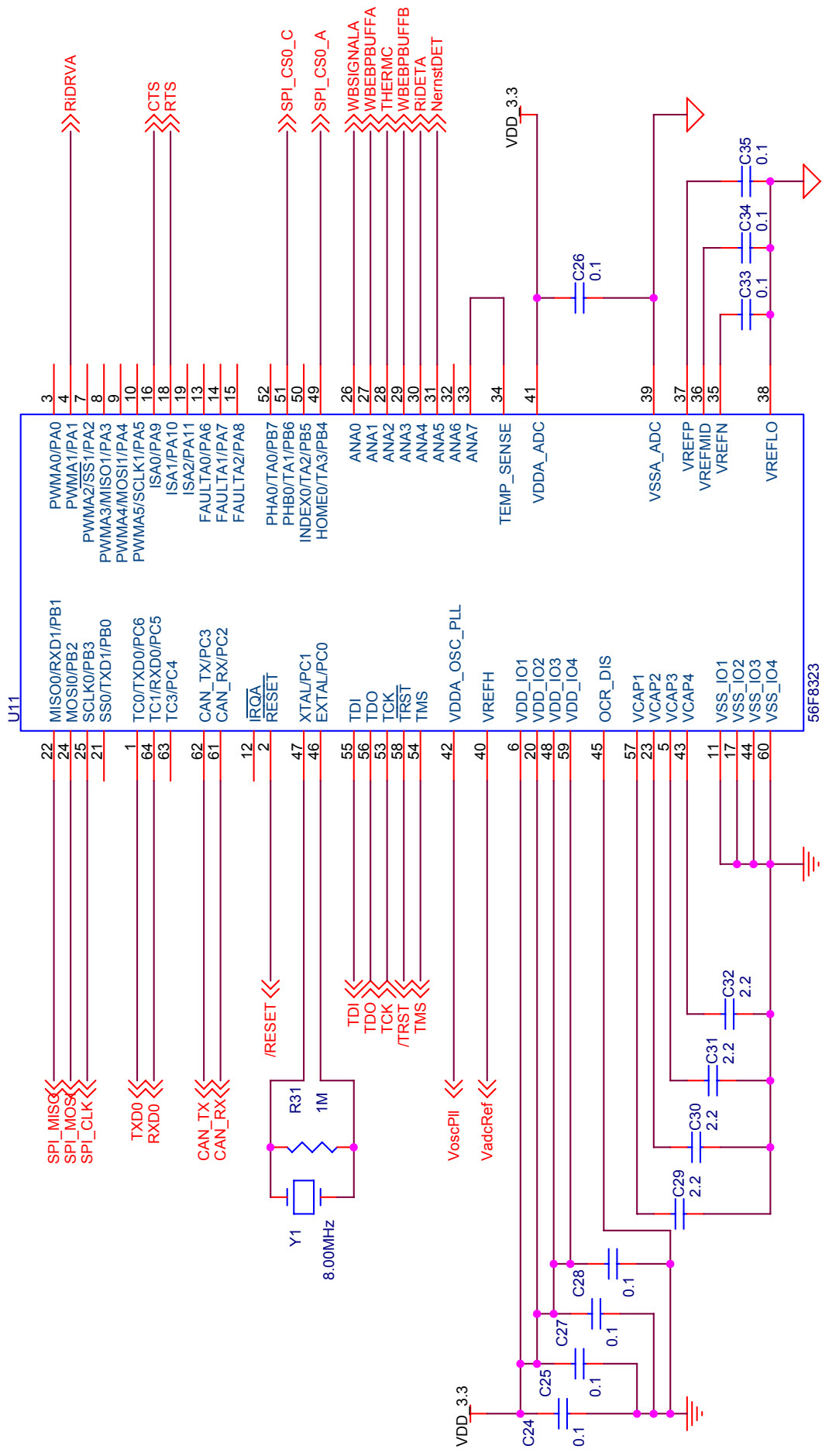
\*\*\*PRELIMINARY\*\*\*



\*\*\*PRELIMINARY\*\*\*

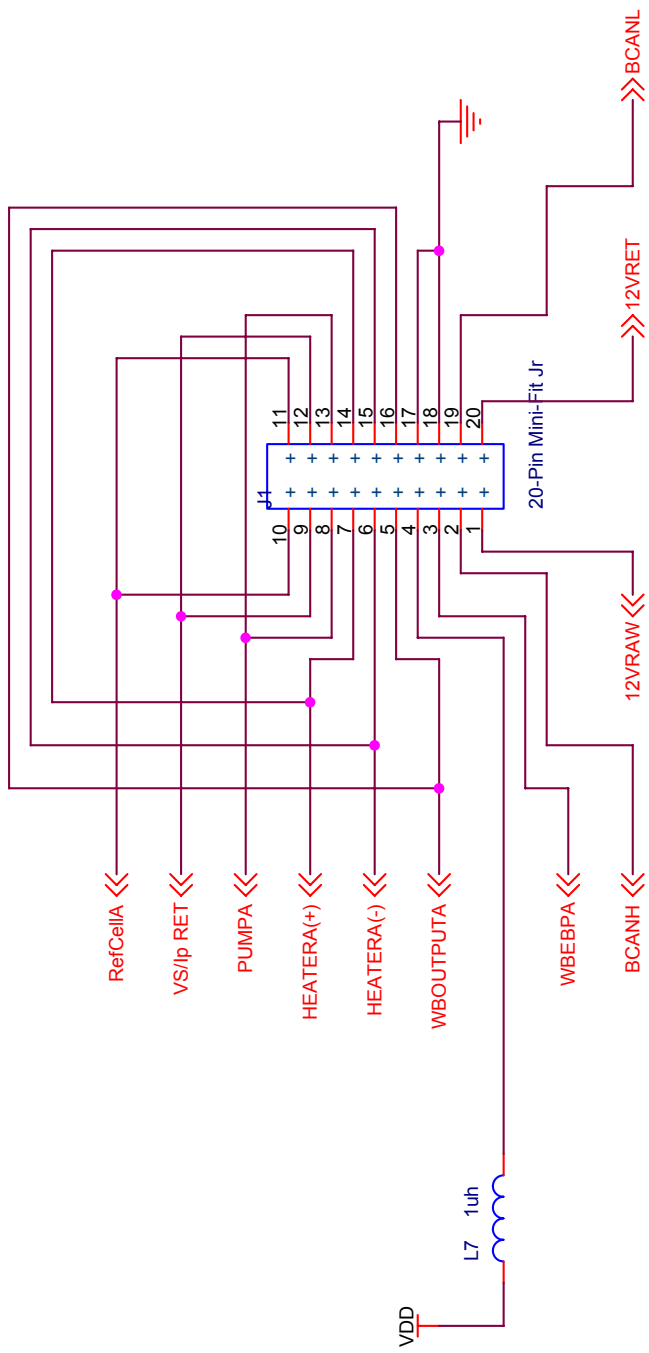
Note: C21A used for Linear-Tech Regulator (in place of C21)

Title		Precision Wideband Controller - Bowling & Grippo	
Size	A	Document Number	Power Supply Section
Date:	Sunday, February 22, 2004	Sheet	1 of 8
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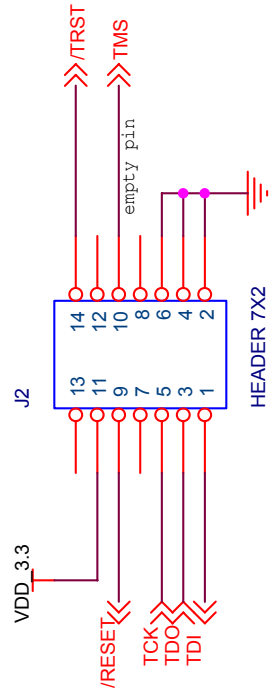


\*\*\*PRELIMINARY\*\*\*

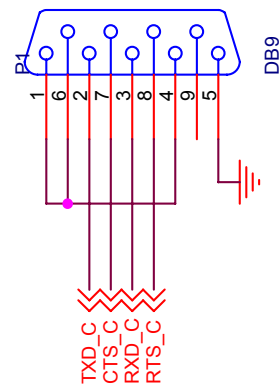
Title		Precision Wideband Controller - Bowling & Grippo	
Size	A	Document Number	DSP/Processor Section
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**Main Connector**



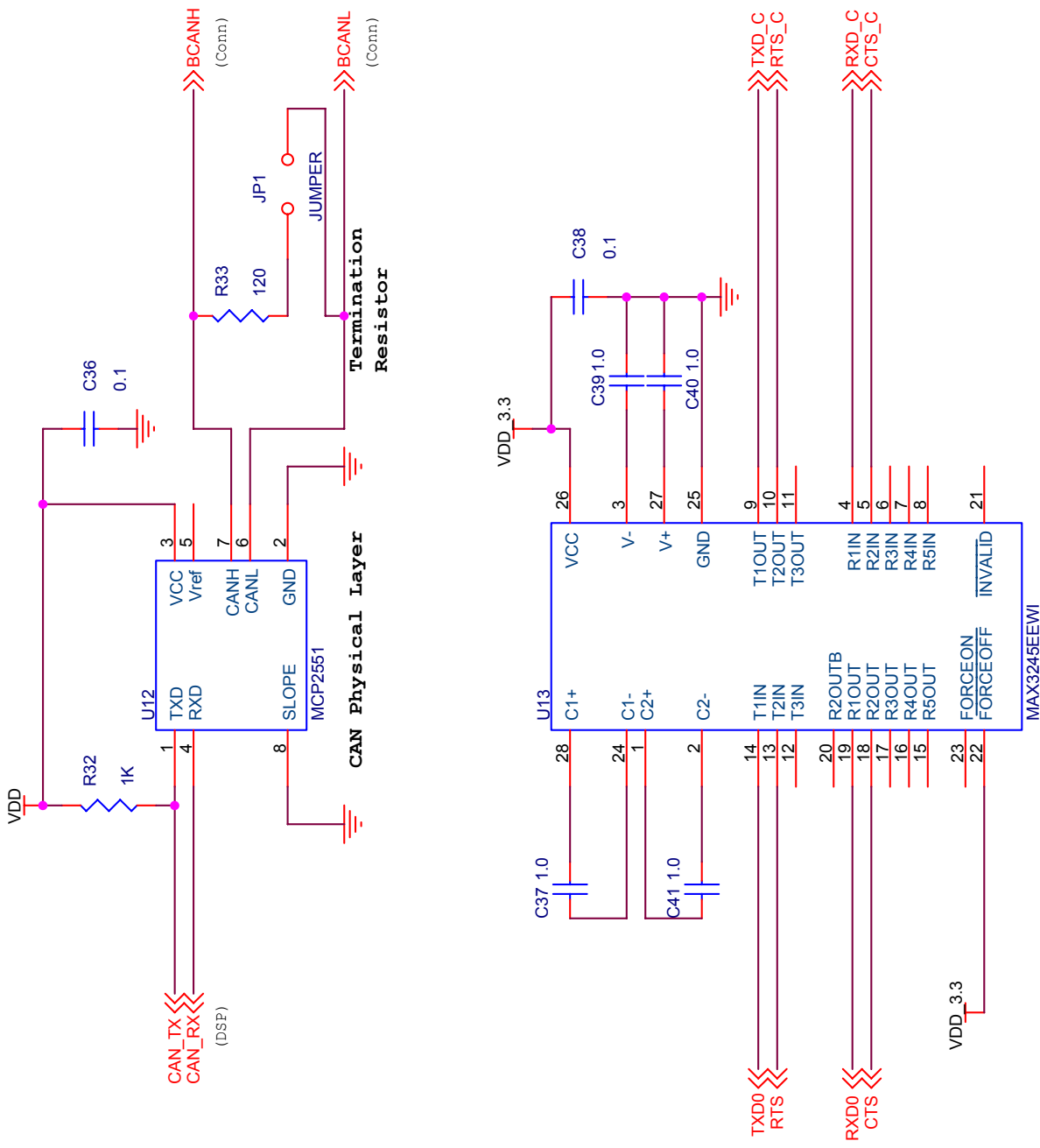
**JTAG Connector**



**UART**

\*\*\*PRELIMINARY\*\*\*

Title		Precision Wideband Controller - Bowling & Grippo	
Size	A	Document Number	Connectors - Off-board
Date:	Sunday, February 22, 2004	Sheet	1 of 8
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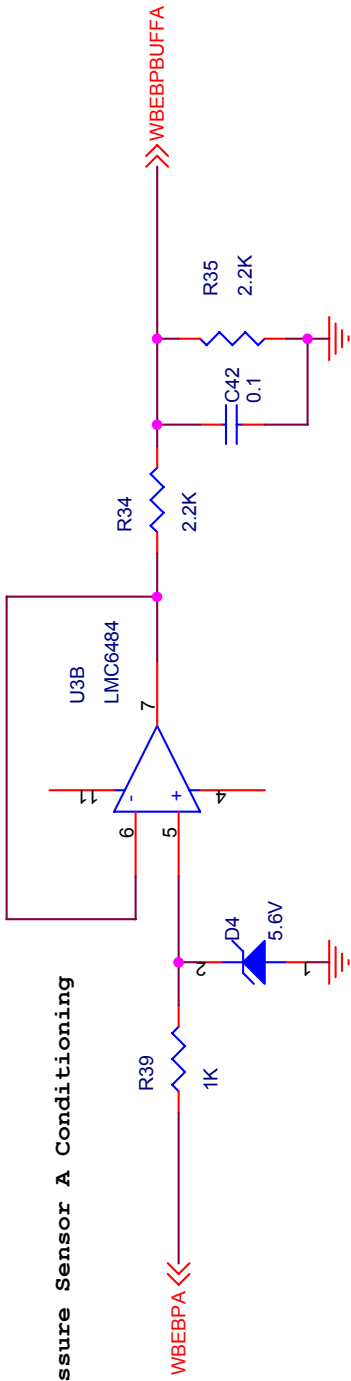
**UART Physical Layer - 1 MB/S**

\*\*\*PRELIMINARY\*\*\*

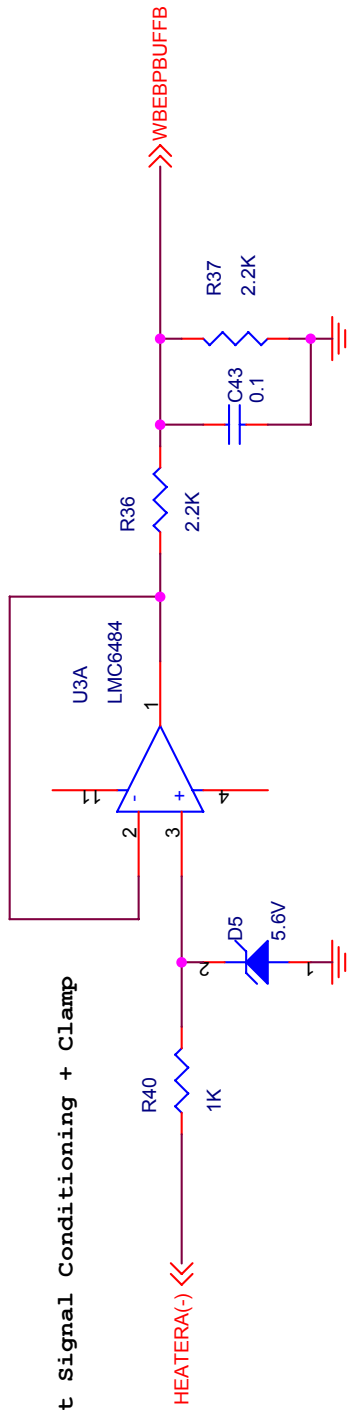
Note: Jumper JP1 connected for enabling CAN termination resistor.

Title		Precision Wideband Controller - Bowling & Grippo	
Size	A	Document Number	CAN - UART Comm
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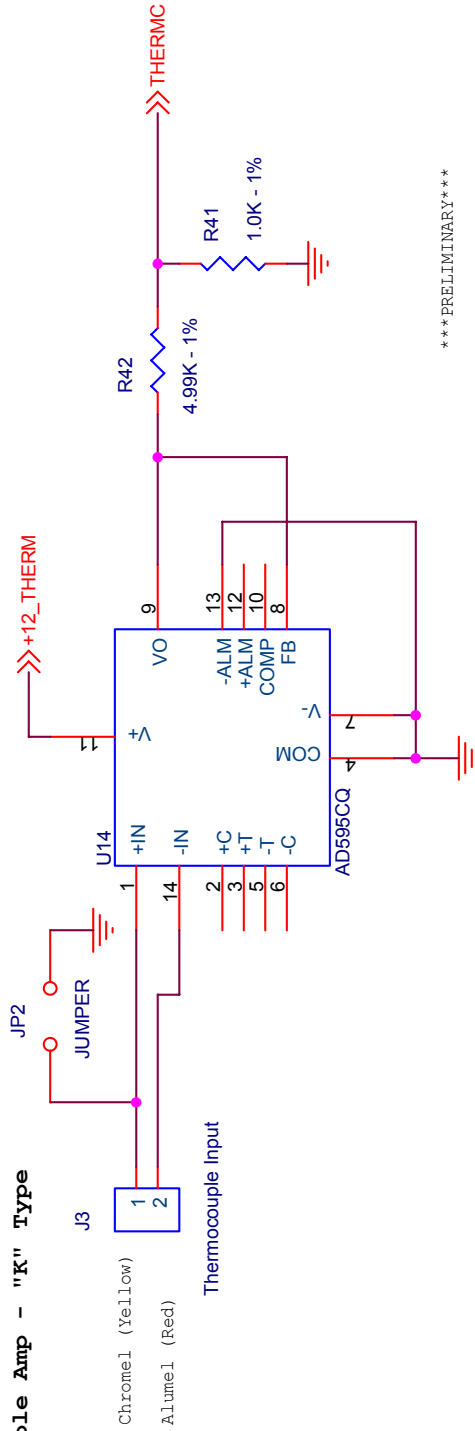
### Exhaust Backpressure Sensor A Conditioning



### Heater Current Signal Conditioning + Clamp



### Thermocouple Amp - "K" Type



\*\*\*PRELIMINARY\*\*\*

Title		Precision Wideband Controller - Bowling & Grippo	
Size	A	Document Number	Exhaust Backpressure Sensor Conditioning/Thermocouple Amplifier
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Note: Jumper JP2 for use with ungrounded thermocouple probes.

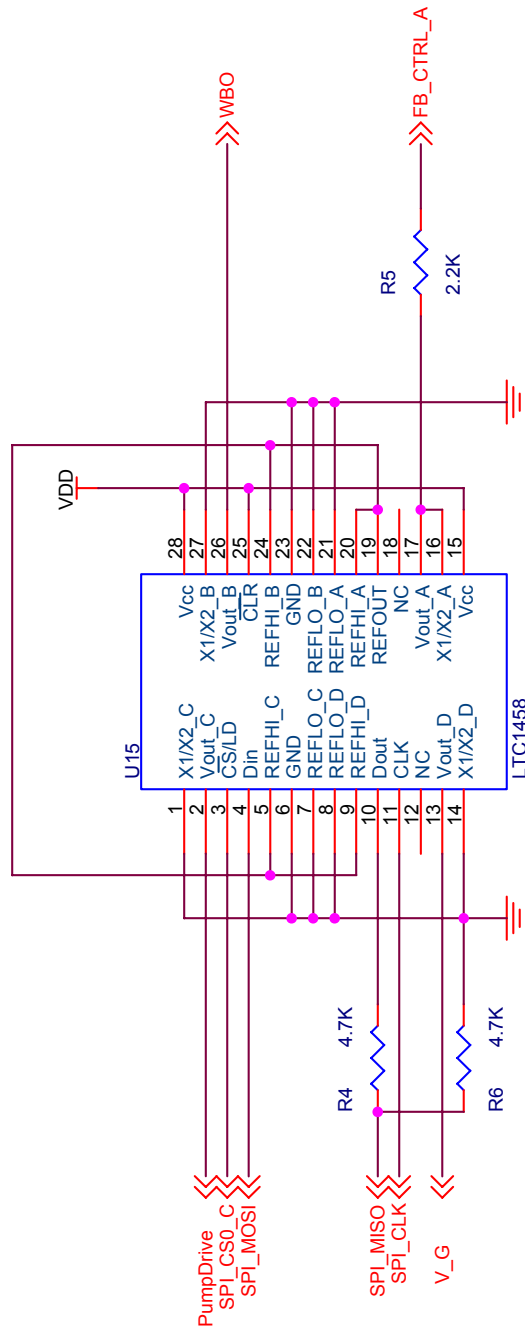
**DAC Assignments:**

CH1 - Heater Power Supply - 2.048V FS

CH2 - WB Output - 4.095V FS

CH3 - Pump Drive - 4.095V FS

CH4 - Virtual Gnd - 4.095V FS



\*\*\*PRELIMINARY\*\*\*

Title		Precision Wideband Controller - Bowling & Grippo	
Size	A	Document Number	Digital-to-Analog Converter
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		Sheet	1 of 1