

THERAMINI

3C3P

REV. D

- 2. CPU
- 3. Memory
- 4. Misc I/O
- 5. Data Conversion
- 6. FRONT PANEL
- 7. Graphic LCD
- 8. STIM WAVEFORM DSP
- 9. Boot Load & Clocks
- 10. DACs
- 11. Filters
- 12. Output Amps
- 13. Output Isolation & Monitoring
- 14. ULTRASOUND FREQUENCY SYNTH
- 15. RF Deck I/O
- 16. POWER SUPPLY

BOARD ID: TBD

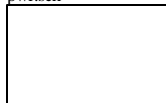
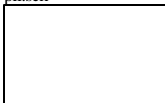
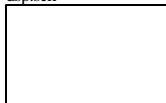
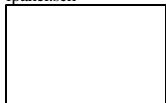
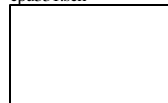
CPU
cpu331.sch

FRONT PANEL I/O
fpanel.sch

DSP
dsp.sch

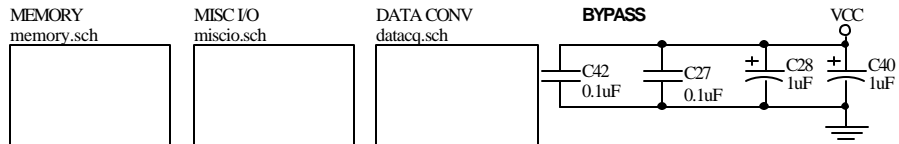
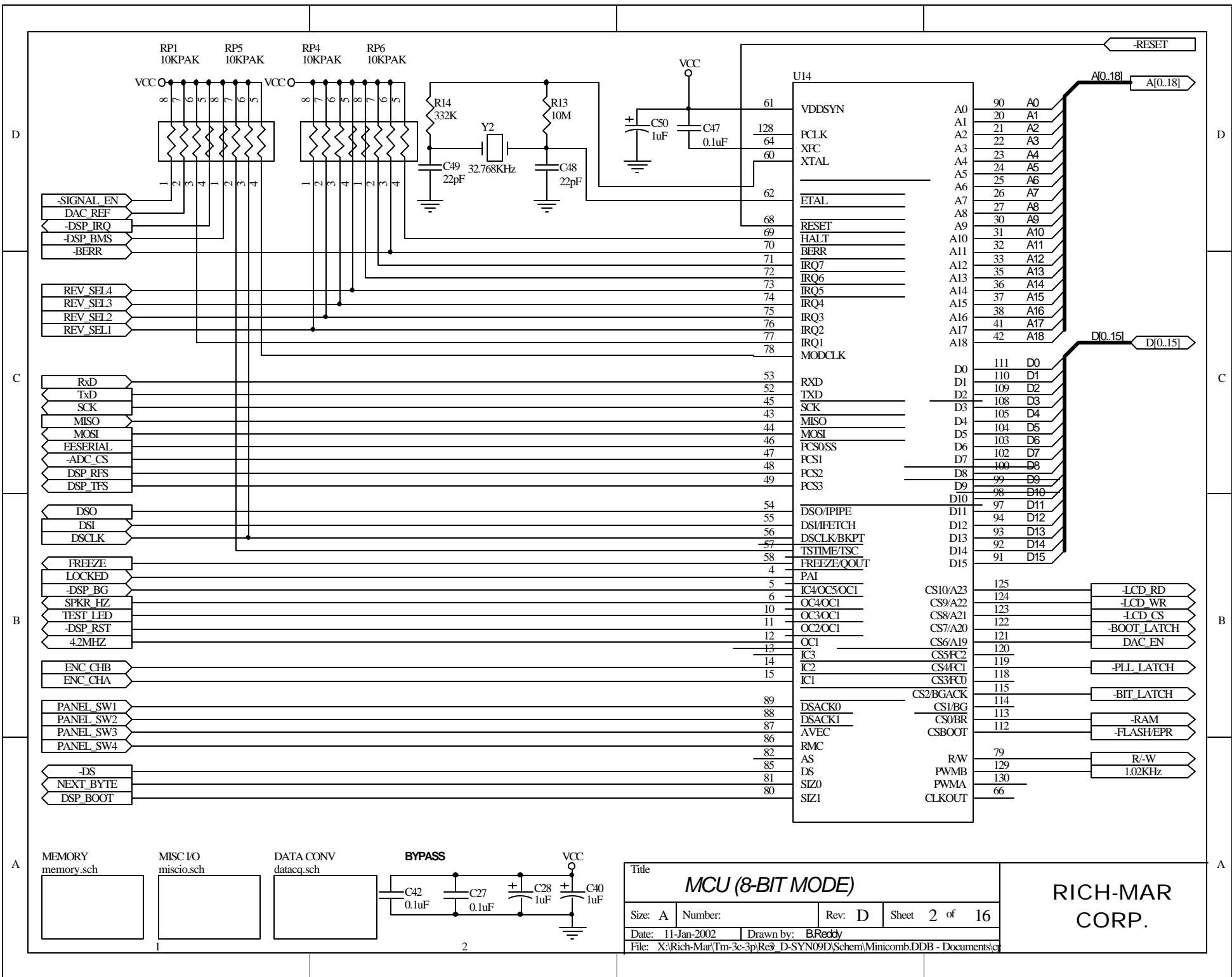
FREQ SYNTH
pll.sch

POWER SUPPLY
pwr.sch



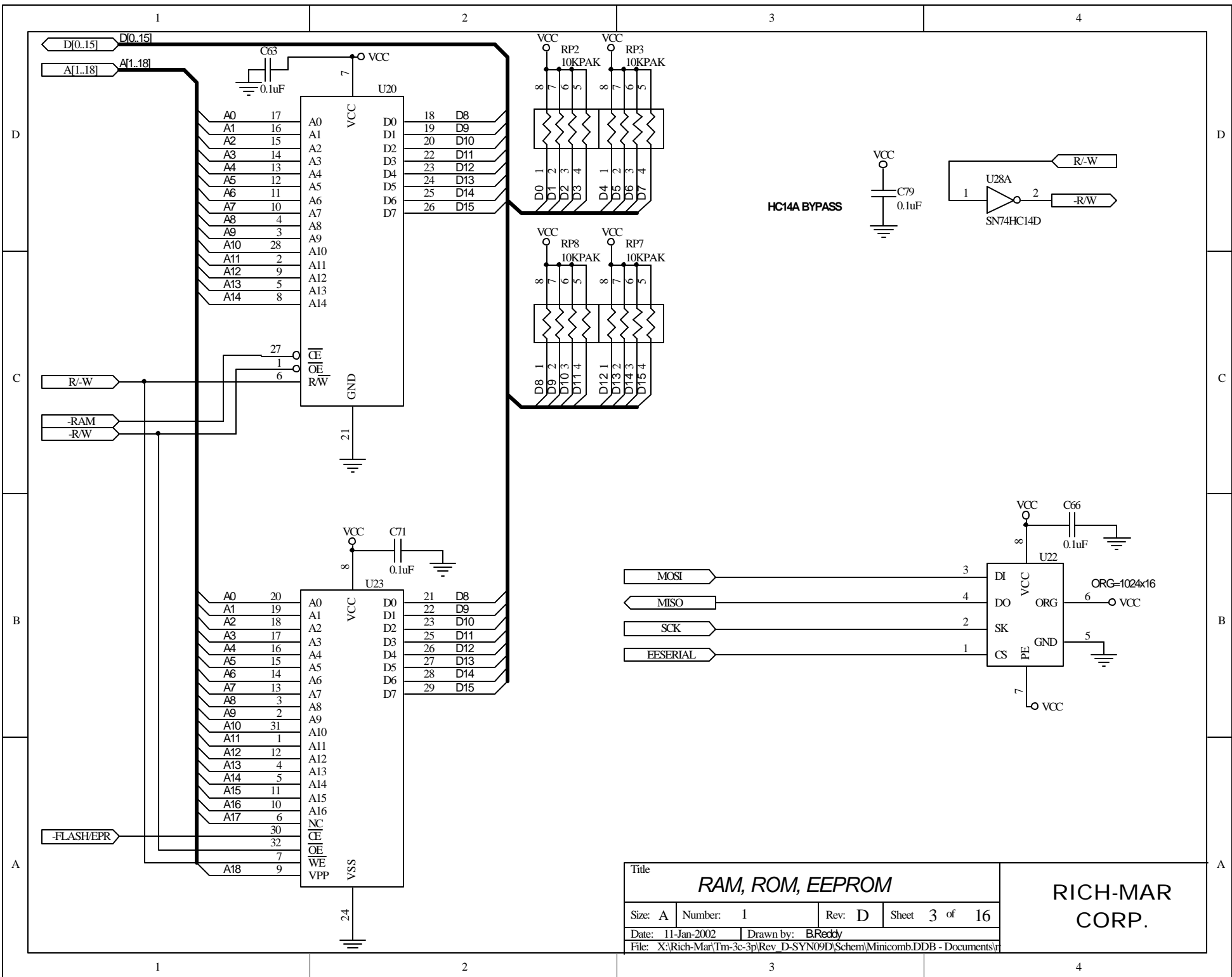
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|--|-------------------|--------|-------|------------------------|----|
| Title | | | | THERAMINI COMBO | |
| Size: A | Number: | Rev: D | Sheet | 1 of | 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | | | |
| File: X:\Rich-Mar\Tm-3c-3p\Rev_D-SYN09D\Schem\Minicomb.DDB - Documents\M | | | | | |

**RICH-MAR
CORP.**



| | | | |
|--|-------------------|--------|---------------|
| Title MCU (8-BIT MODE) | | | |
| Size: A | Number: | Rev: D | Sheet 2 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Re9_D-SYN09D\Schem\Minicomb.DDB - Documents\c | | | |

**RICH-MAR
CORP.**

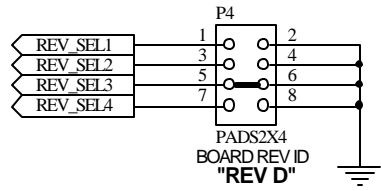


| | | | |
|---|-------------------|--------|---------------|
| Title | | | |
| RAM, ROM, EEPROM | | | |
| Size: A | Number: 1 | Rev: D | Sheet 3 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Rev_D-SYN09D\Schem\Mimicomb.DDB - Documents\ | | | |

**RICH-MAR
CORP.**

SPKR_HZ

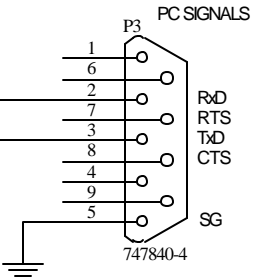
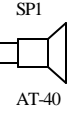
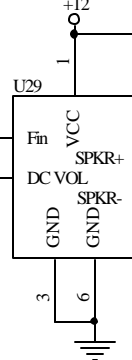
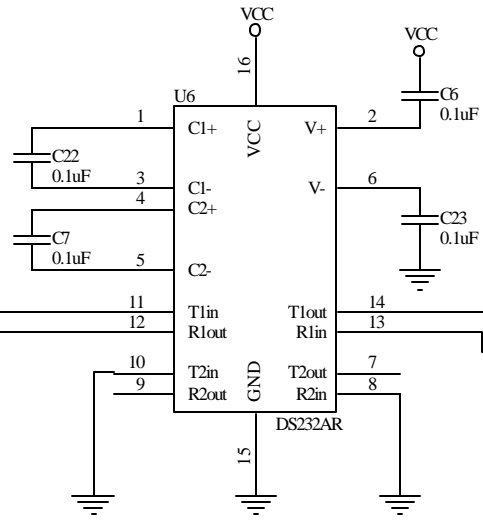
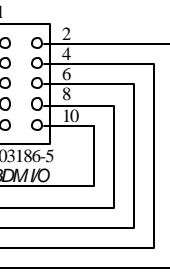
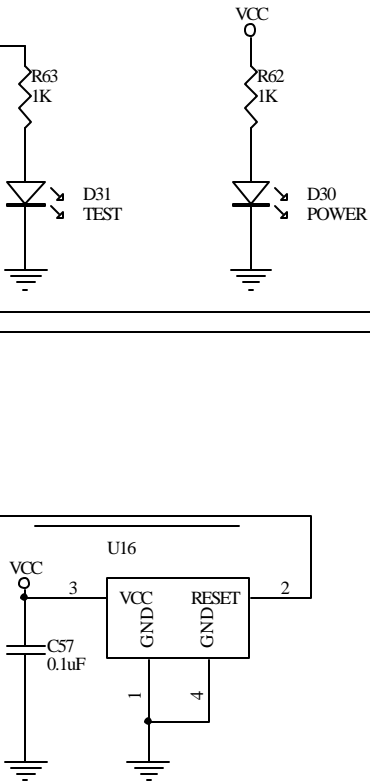
SPKR_VOL



TEST_LED

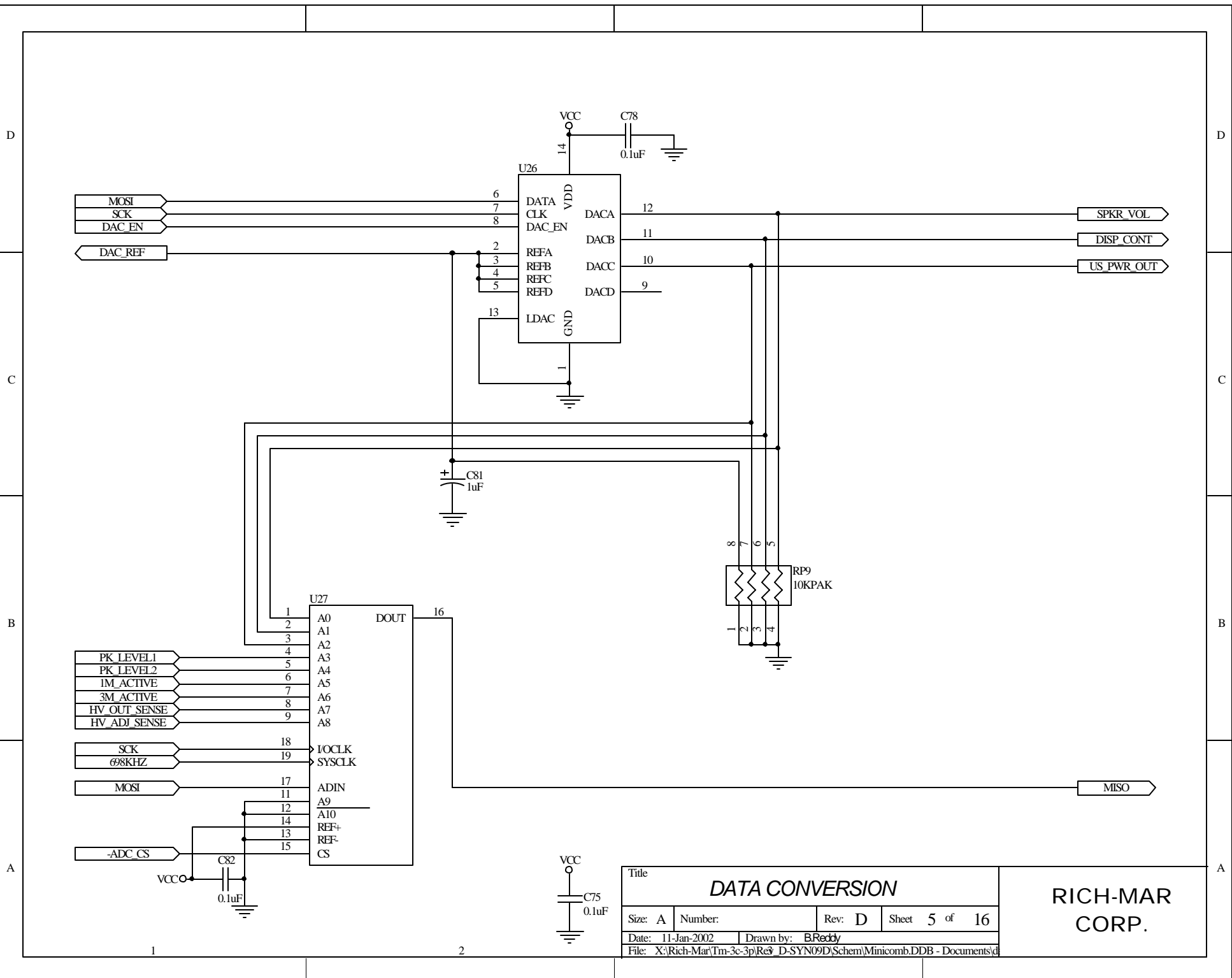
TxD
RxD

-RESET



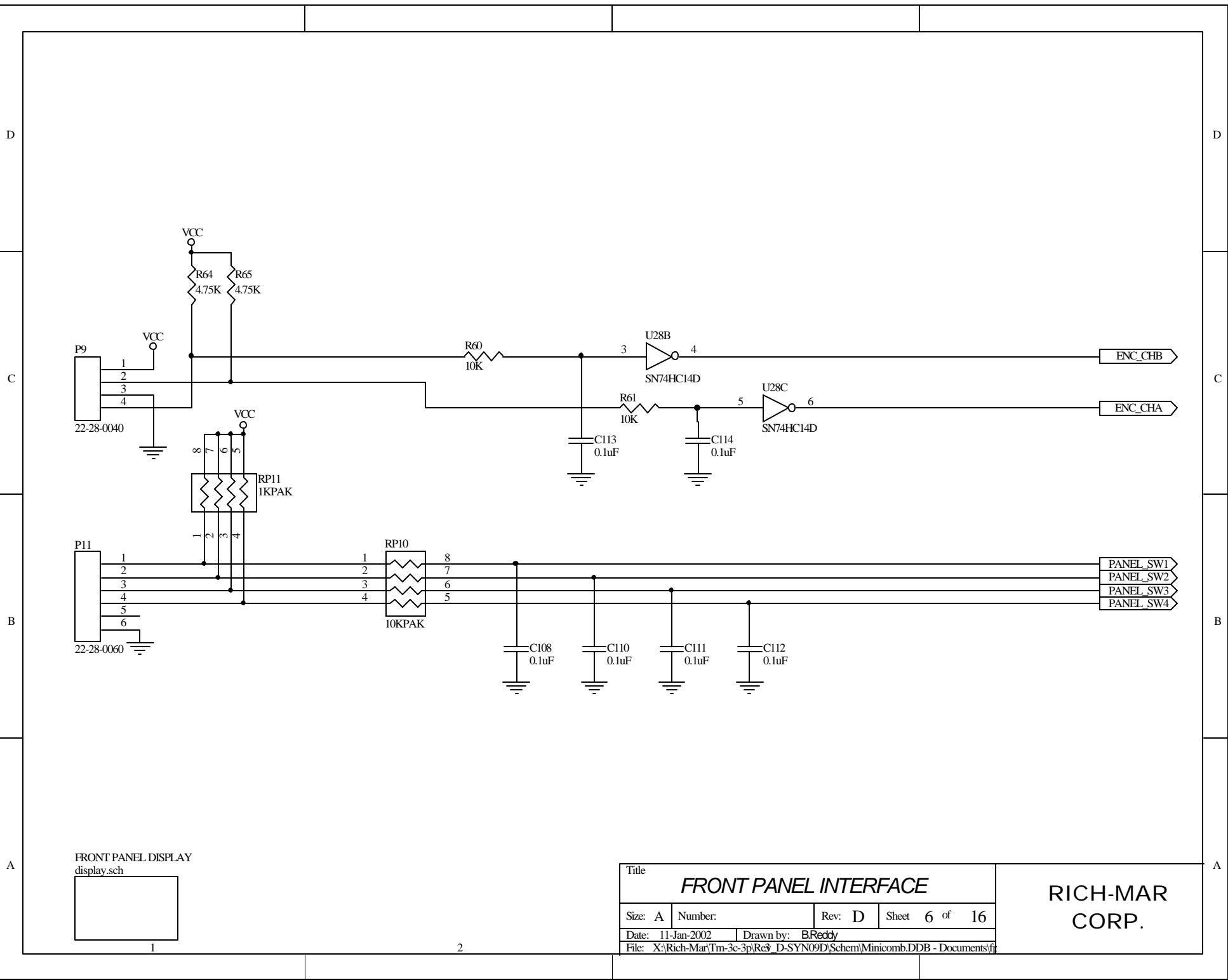
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|--|-------------------|--------|---------------|
| Title | | | |
| RESET & TEST I/O | | | |
| Size: A | Number: | Rev: D | Sheet 4 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
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RICH-MAR
CORP.

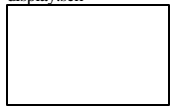


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|--|-------------------|--------|---------------|
| Title | | | |
| DATA CONVERSION | | | |
| Size: A | Number: | Rev: D | Sheet 5 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Re9_D-SYN09D\Schem\Minicomb.DDB - Documents\d | | | |

**RICH-MAR
CORP.**



FRONT PANEL DISPLAY
display.sch

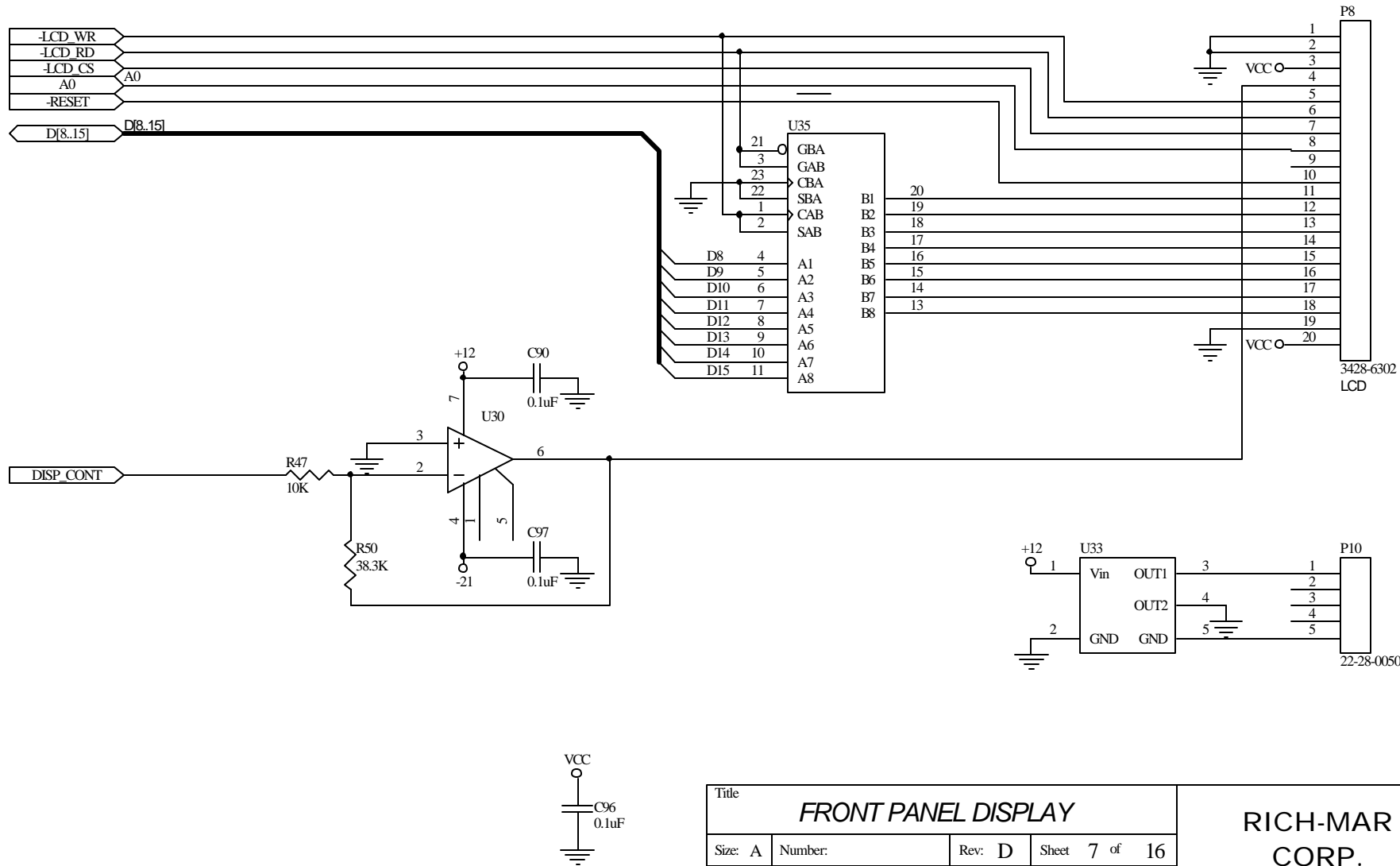


1

2

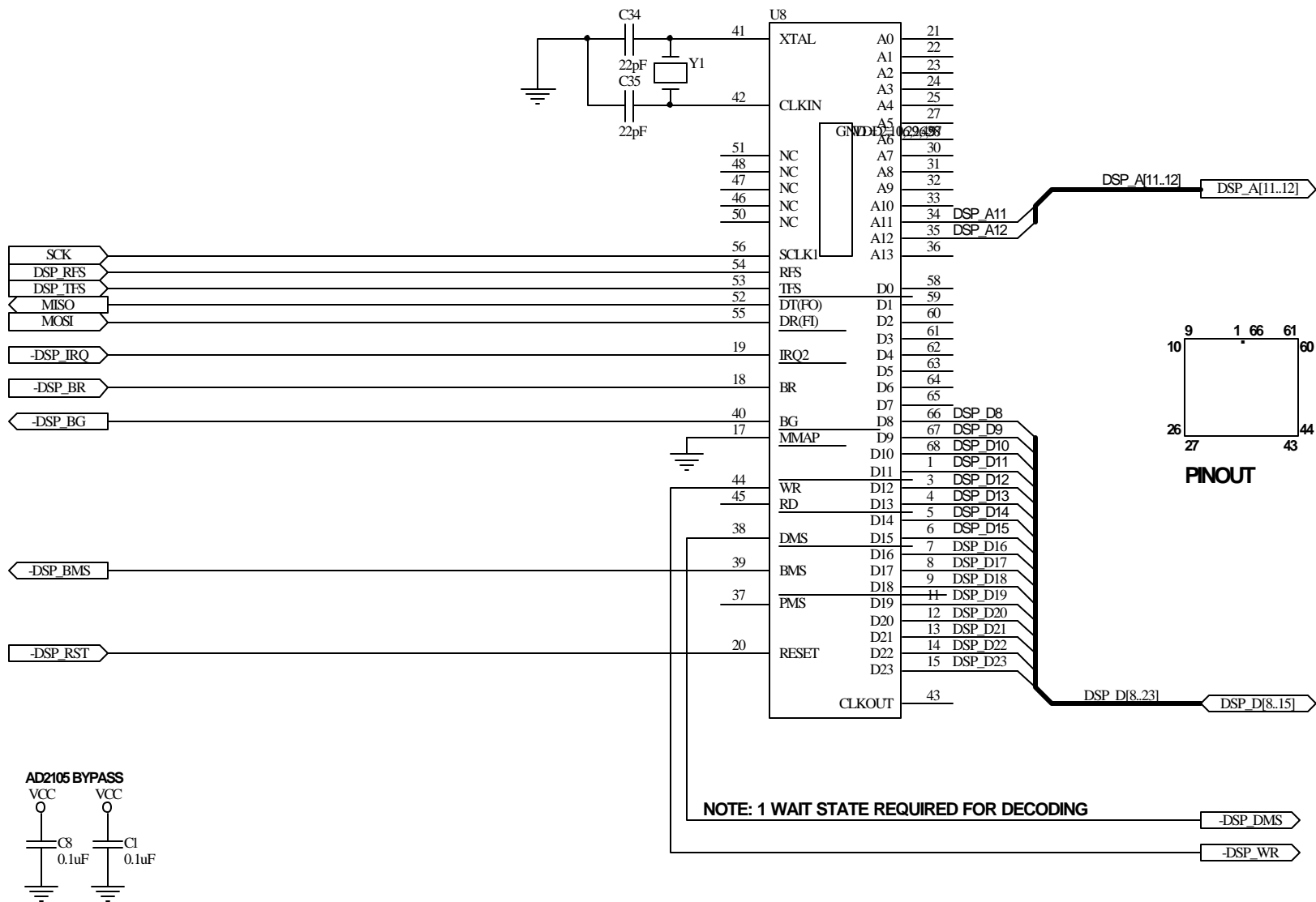
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|---|-------------------|--------|---------------|
| Title | | | |
| FRONT PANEL INTERFACE | | | |
| Size: A | Number: | Rev: D | Sheet 6 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Re3_D-SYN09D\Schem\Minicomb.DDB - Documents\fi | | | |

**RICH-MAR
CORP.**



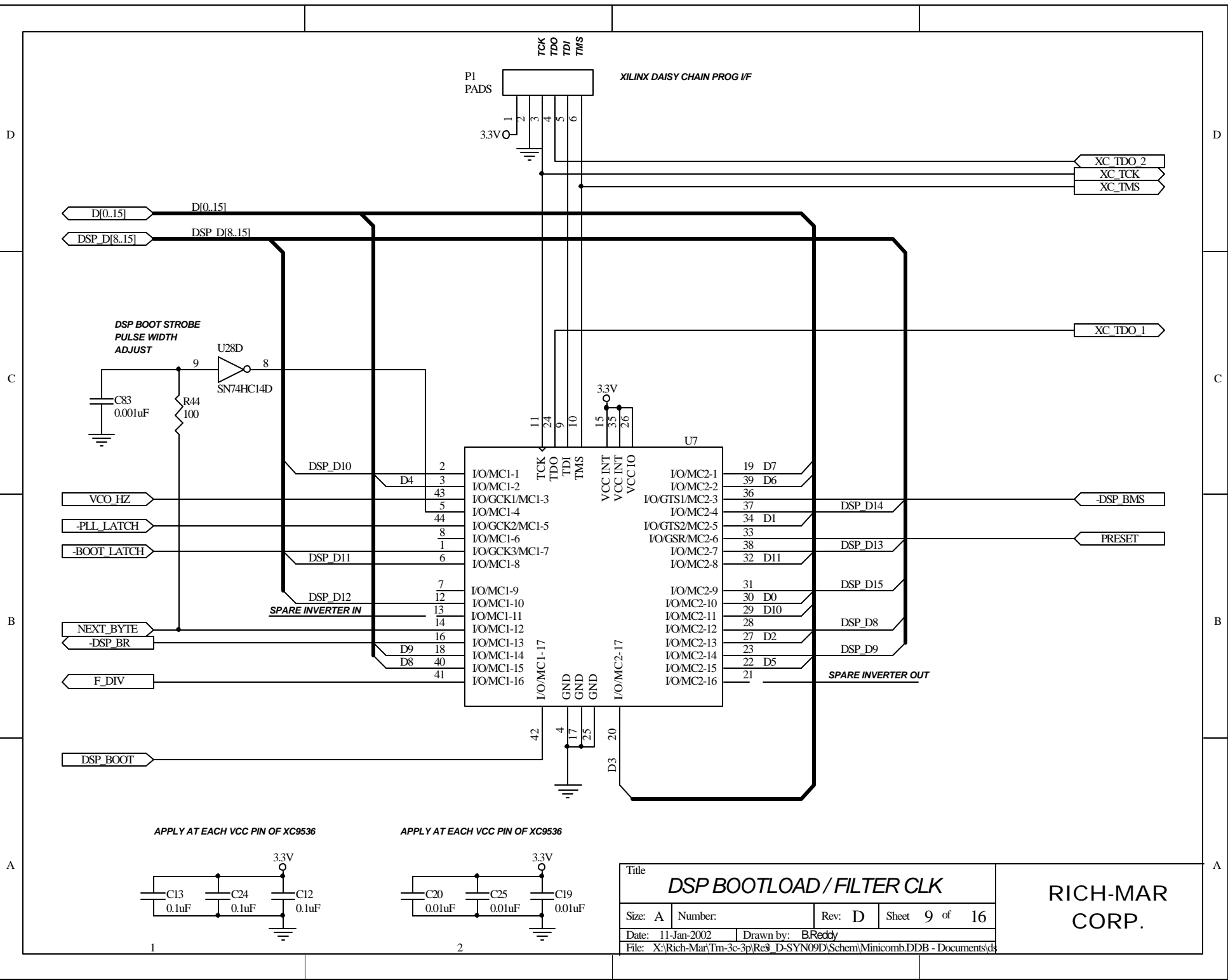
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| Title | | | |
| FRONT PANEL DISPLAY | | | |
| Size: A | Number: | Rev: D | Sheet 7 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Rev_D-SYN09D\Schem\Minicomb.DDB - Documents\d | | | |

**RICH-MAR
CORP.**



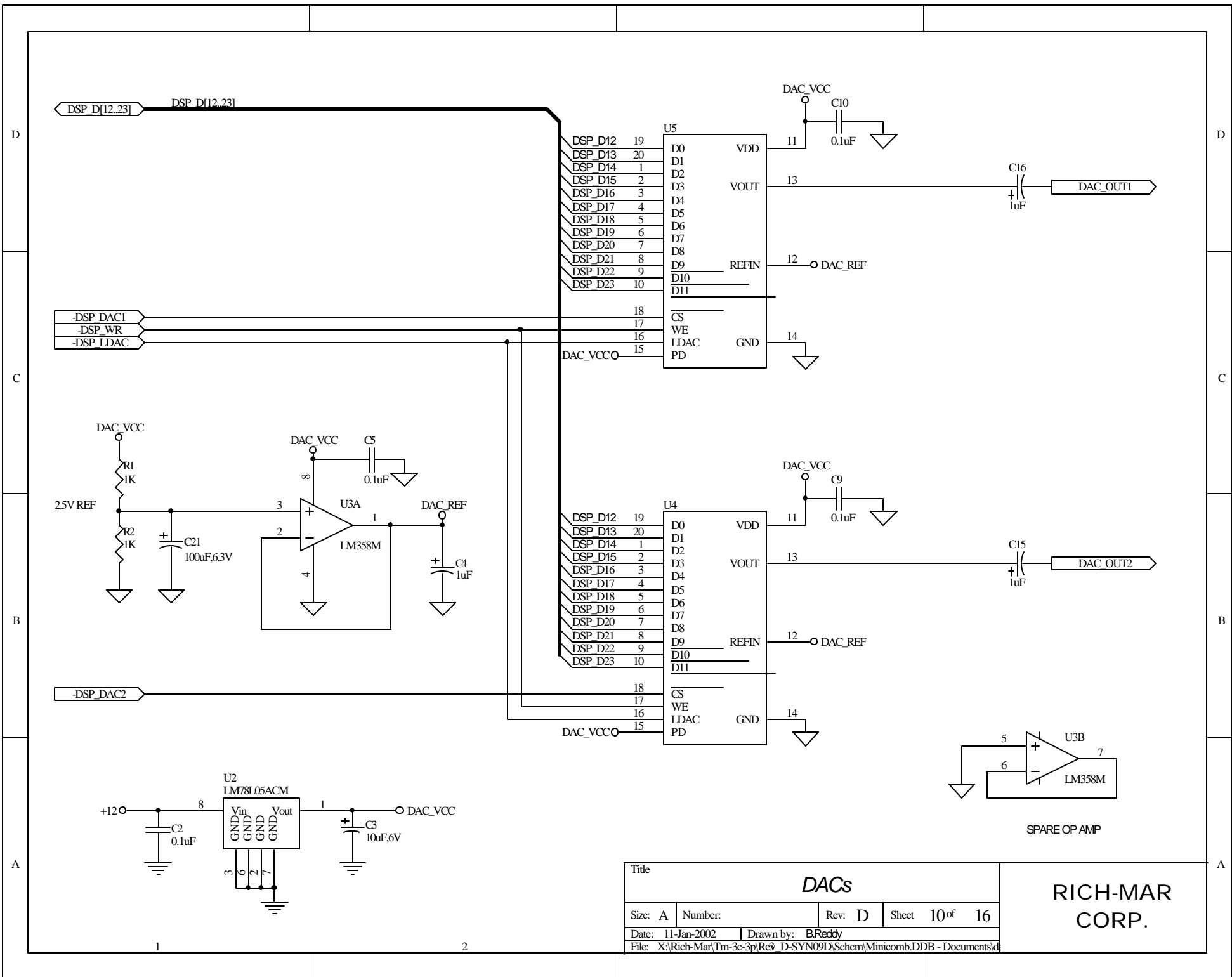
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|--|-------------------|--------|---------------|
| Title | | | |
| AD2105 DSP | | | |
| Size: A | Number: | Rev: D | Sheet 8 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Res_D-SYN09D\Schem\Minicomb.DDB - Documents\d | | | |

**RICH-MAR
CORP.**



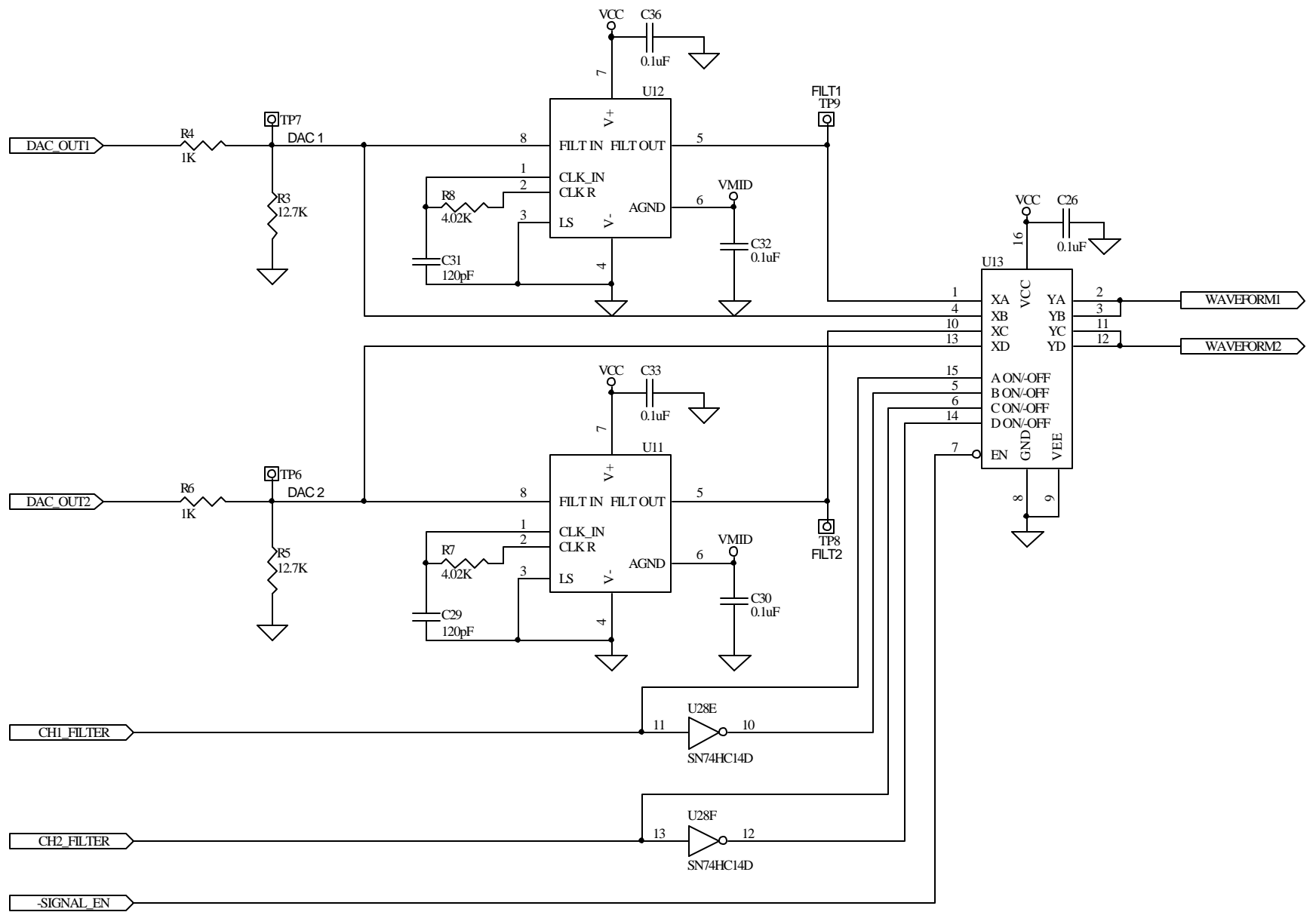
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|--|-------------------|--------|---------------|
| Title | | | |
| DSP BOOTLOAD / FILTER CLK | | | |
| Size: A | Number: | Rev: D | Sheet 9 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Re9_D-SYN09D\Schem\Minicomb.DDB - Documents\d | | | |

**RICH-MAR
CORP.**



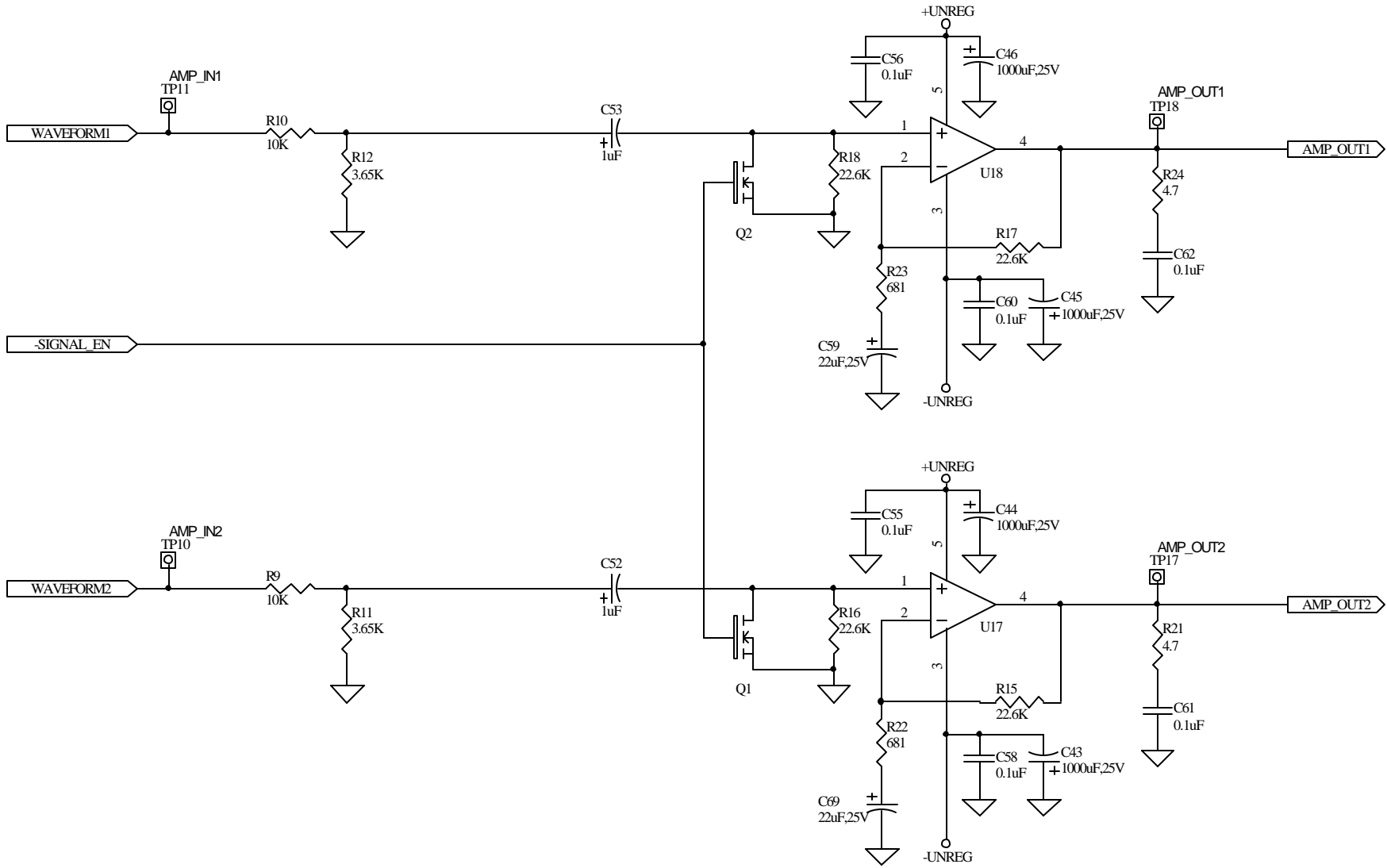
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|--|-------------------|--------|----------------|
| Title | | | |
| DACs | | | |
| Size: A | Number: | Rev: D | Sheet 10 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Re9_D-SYN09D\Schem\Minicomb.DDB - Documents\d | | | |

**RICH-MAR
CORP.**



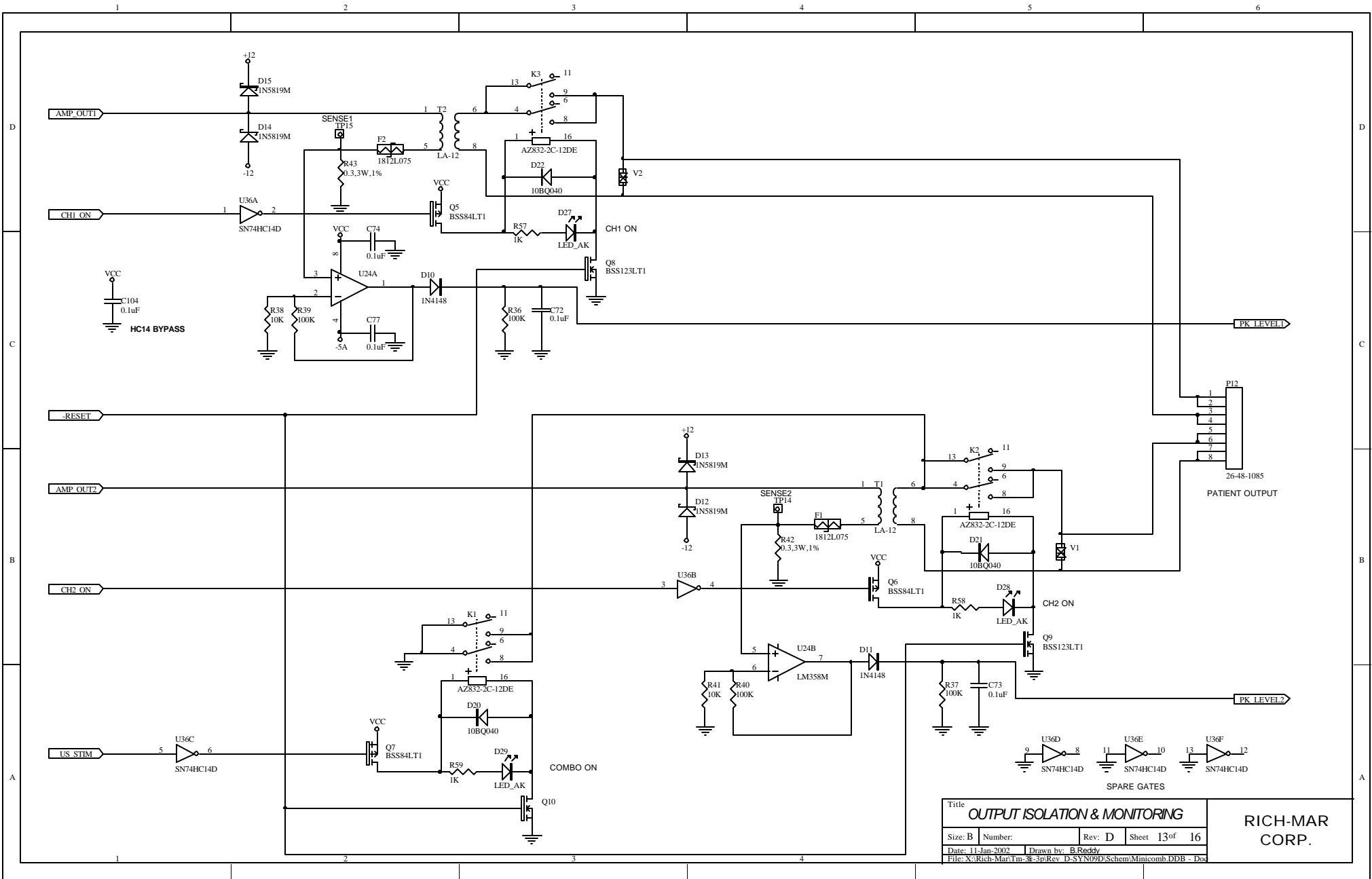
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|---|-------------------|--------|----------------|
| Title | | | |
| FILTERS | | | |
| Size: A | Number: | Rev: D | Sheet 11 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Re\ D-SYN09D\Schem\Minicomb.DDB - Documents\fi | | | |

**RICH-MAR
CORP.**



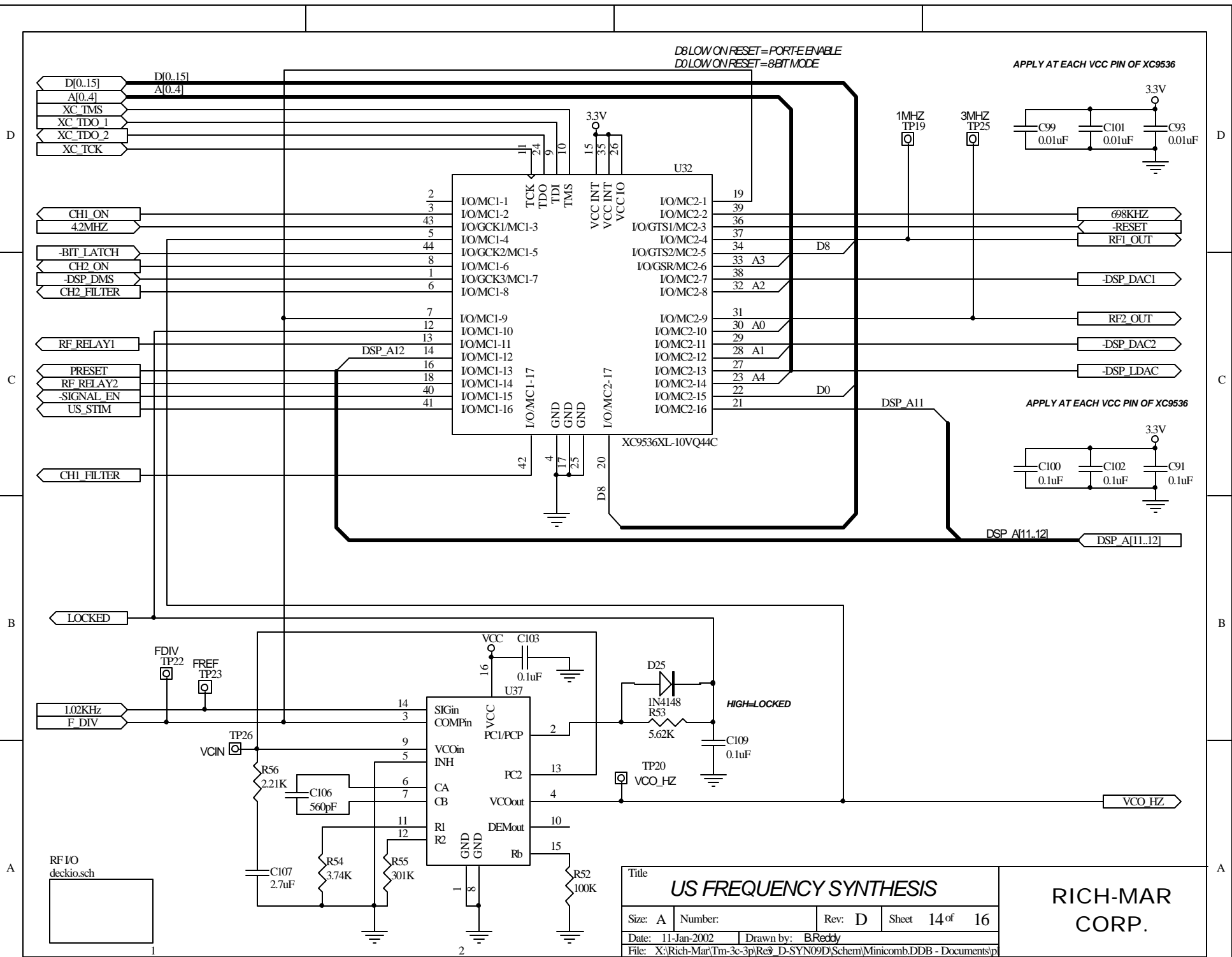
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|---|-------------------|--------|----------------|
| Title | | | |
| OUTPUT AMPS | | | |
| Size: A | Number: | Rev: D | Sheet 12 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Rev_D-SYN09D\Schem\Minicomb.DDB - Documents\at | | | |

**RICH-MAR
CORP.**



| | | | |
|---|-------------------|--------|----------------|
| Title | | | |
| OUTPUT ISOLATION & MONITORING | | | |
| Size: B | Number: | Rev: D | Sheet 13 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-8-3p\Rev. D\SYN09D\Schem\Mimcomb.DDB - Doc | | | |

**RICH-MAR
CORP.**



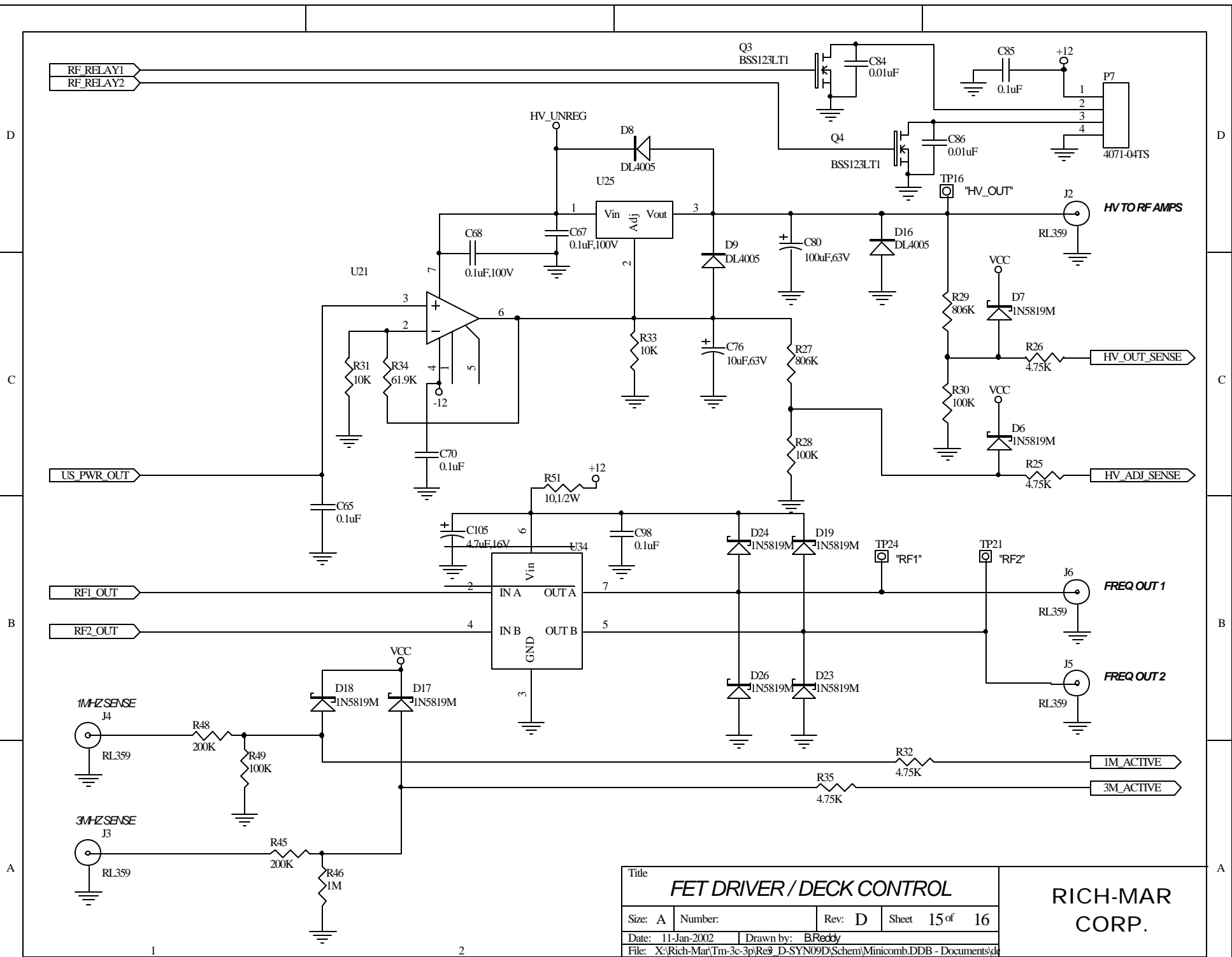
D8 LOW ON RESET = PORTE ENABLE
D0 LOW ON RESET = 8BIT MODE

APPLY AT EACH VCC PIN OF XC9536

APPLY AT EACH VCC PIN OF XC9536

| | | | |
|--|-------------------|--------|----------------|
| Title | | | |
| US FREQUENCY SYNTHESIS | | | |
| Size: A | Number: | Rev: D | Sheet 14 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Re9_D-SYN09D\Schem\Minicomb.DDB - Documents\p | | | |

**RICH-MAR
CORP.**



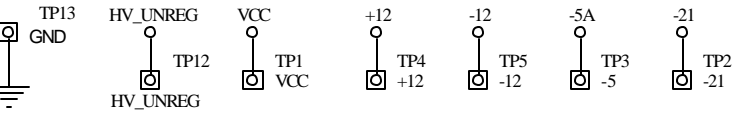
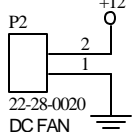
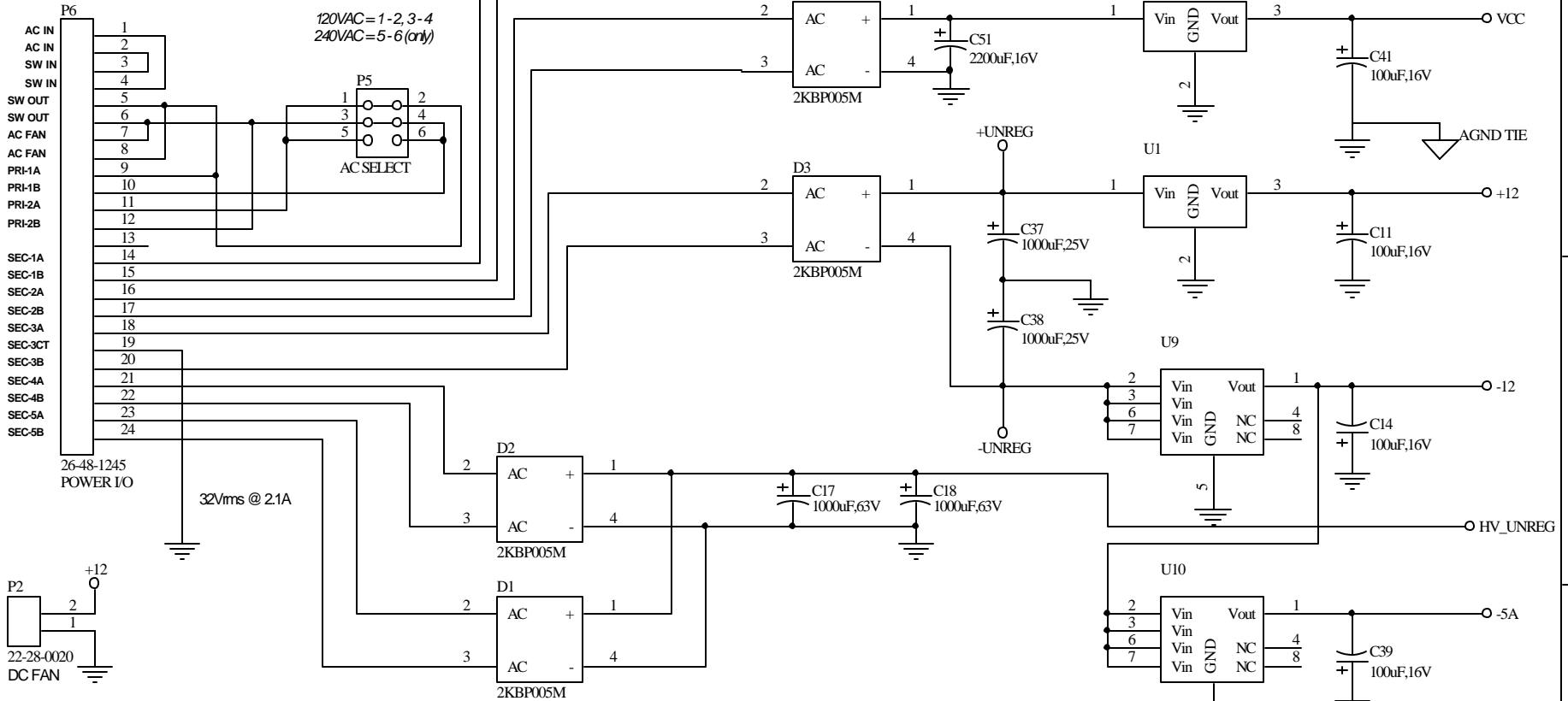
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|--|-------------------|--------|----------------|
| Title | | | |
| FET DRIVER / DECK CONTROL | | | |
| Size: A | Number: | Rev: D | Sheet 15 of 16 |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | |
| File: X:\Rich-Mar\Tm-3c-3p\Re9_D-SYN09D\Schem\Minicomb.DDB - Documents\d | | | |

**RICH-MAR
CORP.**

EXTERNAL TRANSFORMER OPTIONS

1. USE TT7.7 TRANSFORMER IF LOW PROFILE NOT NEEDED.
2. USE MEZZ BOARD WITH 2 LOW PROFILE TRANSFORMERS.

120VAC = 1-2, 3-4
240VAC = 5-6 (only)



Supply Voltage Test Points

| | | | | | | | | | | | |
|--|-------------------|--------|-------|---------------------|----|----|--|----------------|--|--|--|
| Title | | | | POWER SUPPLY | | | | RICH-MAR CORP. | | | |
| Size: A | Number: | Rev: D | Sheet | 16 | of | 16 | | | | | |
| Date: 11-Jan-2002 | Drawn by: B.Reddy | | | | | | | | | | |
| File: X:\Rich-Mar\Tm-3c-3p\Re9_D-SYN09D\Schem\Minicomb.DDB - Documents\p | | | | | | | | | | | |