

P-ROC

Pinball - Remote Operations Controller

Revision 2.0

Designed by Gerry Stellenberg

This board is designed to control the real-time signals on a pinball machine. An FPGA handles the logic functions and communicates with a host over USB. Major circuits include:

- Direct Switch Inputs
- Switch Matrix
- Burst Switch Drivers/Inputs
- Direct Output Drivers
- Multiplexed Output Drivers

This board is compatible with WPC, WPC-95, Stern Whitestar, and Stern S.A.M. systems and acts as a replacement for the CPU board in those systems.

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Description
Page Summaries
Power Supplies

Page 2:

Direct Switch Inputs
0-15
Stern Switch Matrix
Column Inputs [8-15]

Page 3:

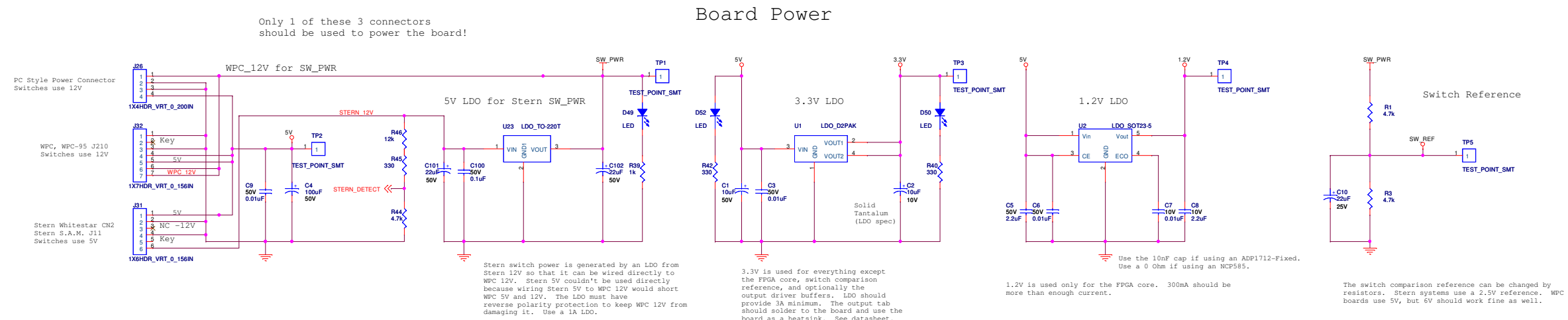
Direct Switch Inputs
16-31

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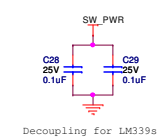
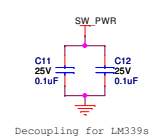
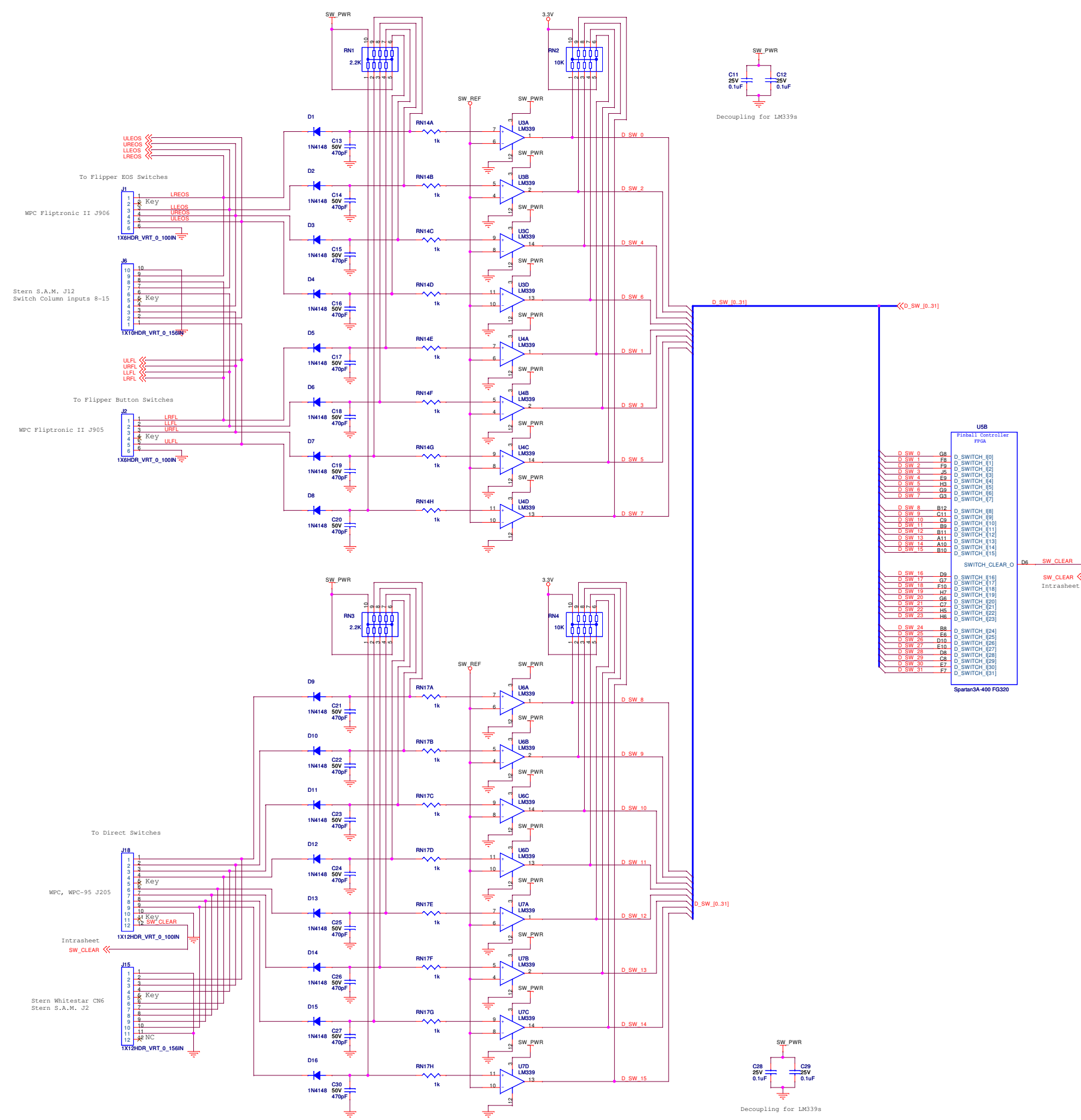
Switch Matrix
Burst Switch Inputs
Burst Switch Outputs

Page 5:

USB
Direct Output Drivers
Muxed Output Drivers
FPGA - Miscellaneous
FPGA Power



Direct Switch Inputs 0-15

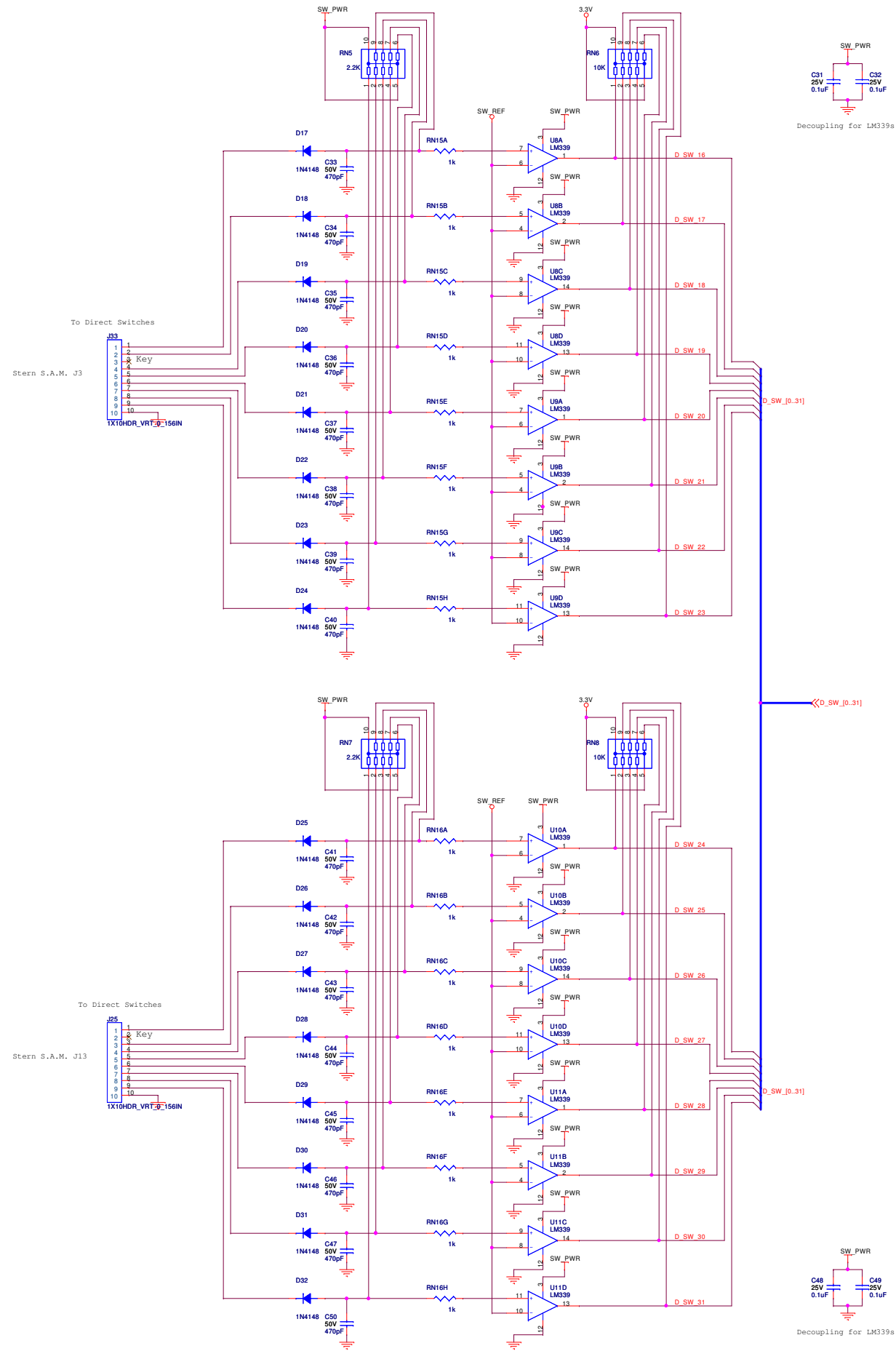


USB	
Pinball Controller PPGA	
D_SW_0	G8
D_SW_1	F8
D_SW_2	F9
D_SW_3	J5
D_SW_4	F9
D_SW_5	H3
D_SW_6	G9
D_SW_7	G9
D_SW_8	B12
D_SW_9	C11
D_SW_10	C9
D_SW_11	B9
D_SW_12	B11
D_SW_13	A11
D_SW_14	A10
D_SW_15	B10
D_SW_16	D9
D_SW_17	G7
D_SW_18	F10
D_SW_19	H7
D_SW_20	G6
D_SW_21	C7
D_SW_22	H5
D_SW_23	H6
D_SW_24	B8
D_SW_25	E6
D_SW_26	D10
D_SW_27	E10
D_SW_28	D8
D_SW_29	C8
D_SW_30	E7
D_SW_31	F7

Spartan3A-400 FG320

SW_CLEAR
Intrasheet

Direct Switch Inputs 16-31



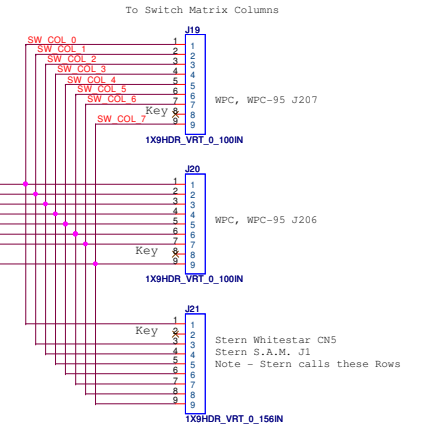
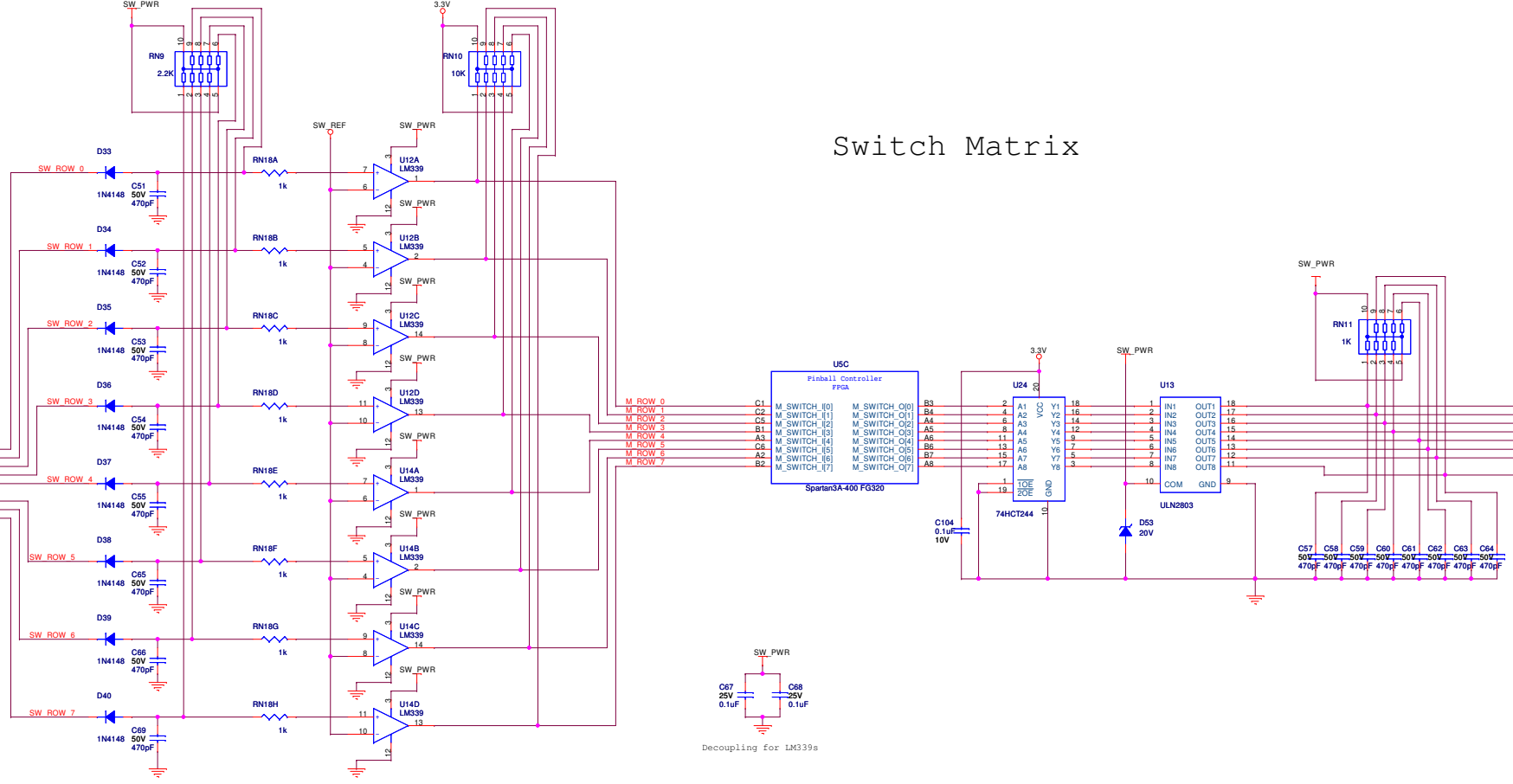
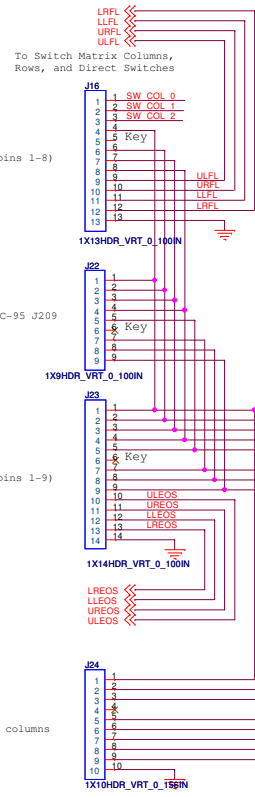
Switch Matrix

MPC-95 J212
MPC J212 (only use pins 1-8)

MPC, MPC-95 J209

MPC-95 J208
MPC J208 (only use pins 1-9)

Stern Whitestar CN7
Stern S.A.M. J6
Note - Stern calls these columns



Burst Switch Connections

