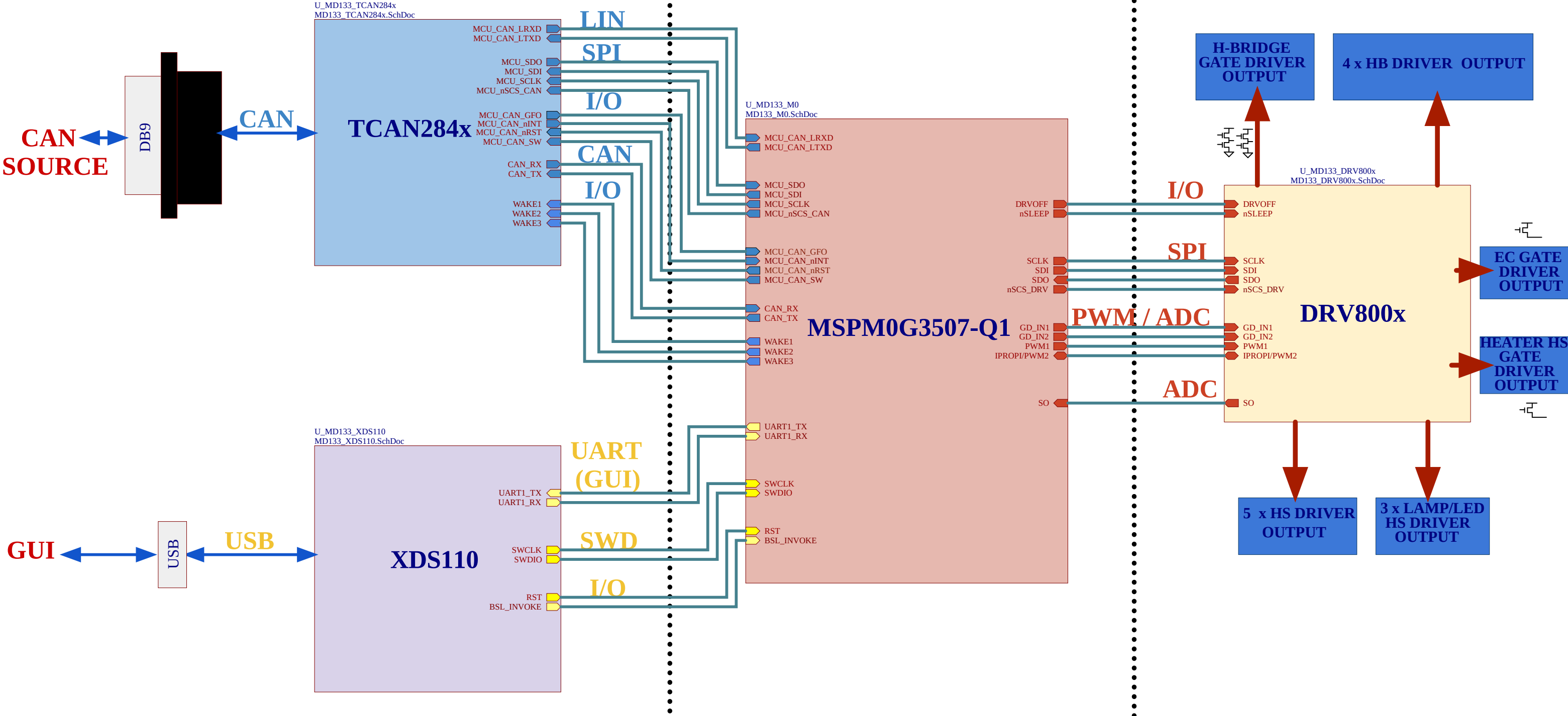


DRV800x-Q1 TOP LEVEL SCHEMATIC

INTERFACE/ DEBUGGER

PROCESSING

DRIVER + OUTPUTS



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Orderable: DRV8003-Q1EVM	Designed for: Public Release	Mod. Date: 3/27/2026
TID #: N/A	Project Title: MD133_DRV8003	
Number: MD133	Rev: E2	Sheet Title: TOP LEVEL SCHEMATIC
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 1 of 3
Drawn By: Keerthi Kumanan	File: MD133_DRV800x_Top_Level.SchDoc	Size: B
Engineer: Mojtaba Afshar	Contact: http://www.ti.com/support	



The diagram shows a circuit with three voltage sources: VCC1, 3V3_MCU, and 3V3. A resistor R21 is connected between VCC1 and the 3V3_MCU pin, but it is crossed out with a large red 'X', indicating it should not be connected. Another resistor R22 is connected between the 3V3_MCU pin and the 3V3 supply. The value '0' is written above R22, suggesting a 0-ohm resistor or a direct connection.

3.3V is from a 3.3 V LDO. The input to the LDO is the 5 V from the USB line.

A circuit diagram showing a pull-up resistor R23 (47k) connected to TP8 and BSL_INVOKE. The resistor is connected to a ground symbol labeled GND. A blue line connects TP8 to BSL_INVOKE.

	U1	
	40	VDD
	32	VCORE
	38	RST
	33	PA0
	34	PA1
MCU_PWM1	42	PA2/ROSC
	43	PA3/LFXIN
HFXIN	44	PA4/LFXOUT
HFXOUT	45	PA5/HFXIN
	46	PA6/HFXOUT
MCU_GD_IN2	49	PA7
	54	PA8
MCU_CAN_LTXD	55	PA9
MCU_CAN_LRXD	56	PA10
CAN_TX	57	PA11
CAN_RX	5	PA12/CAN_TX
	6	PA13/CAN_RX
	7	PA14
MCU_IPROP/PWM2	8	PA15/A1_0
MCU_SO	9	PA16/A1_1
PVDD_ADC	10	PA17/A1_2
	11	PA18/A1_3
SWDIO	12	PA19/SWDIO
SWCLK	13	PA20/SWCLK
VREF_N	17	PA21/A1_7/VREF-
VREF_P	18	PA22/A0_7
	24	PA23/VREF+
MCU_STATUS	25	PA24/A0_3
GUI_STATUS	26	PA25/A0_2
	30	PA26/A0_1/CAN_TX
MCU_GD_IN1	31	PA27/A0_0/CAN_RX
	35	PA28
	36	PA29
	37	PA30
	39	PA31
MCU_DRVOFF	47	PB0
	48	PB1
	50	PB2
	51	PB3
UART1_TX	52	PB4
UART1_RX	53	PB5
MCU_nSCS_DRV	58	PB6
MCU_SDO	59	PB7
MCU_SDI	60	PB8
MCU_SCLK	61	PB9
	62	PB10
	63	PB11
	64	PB12
MCU_CAN_GFO	1	PB13
	2	PB14
MCU_CAN_SW	3	PB15
MCU_CAN_nINT	4	PB16
MCU_CAN_nRST	14	PB17/A1_4
	15	PB18/A1_5
MCU_nSLEEP	16	PB19/A1_6
	19	PB20/A0_6
WAKE3	20	PB21
WAKE2	21	PB22
WAKE1	22	PB23
nFAULT	23	PB24/A0_5
	27	PB25/A0_4
MCU_nSCS_CAN	28	PB26
	29	PB27
		VSS
		41

MCU GD_IN1 1 2 GD_IN1

MCU GD_IN2 3 4 GD_IN2

MCU PWM1 5 6 PWM1

MCU nSCS_DRV 7 8 nSCS_DRV

MCU SDI 9 10 SDI

MCU SDO 11 12 SDO

MCU SCLK 13 14 SCLK

MCU IPROP1/PWM2 15 16 IPROP1/PWM2

MCU SO 17 18 SO

MCU DRVOFF 19 20 DRVOFF

MCU nSLEEP 21 22 nSLEEP

3V3_MCU 23 24

3V3_MCU

R24 3.3k

J3

M0 <----> DRV800x

The diagram shows a differential signal path between two input/output pins, HFXOUT and HFXIN. Each pin is connected to a 22pF capacitor (C28 and C29) which is grounded. A central component, labeled Y2, is crossed out with a large red 'X'. The component has four pins: pin 1 is connected to HFXOUT, pin 3 is connected to HFXIN, pin 2 is connected to the node between C28 and ground, and pin 4 is connected to the node between C29 and ground. The ground connection is labeled GND.

TP9		<u>GD_IN1</u>
TP10		<u>GD_IN2</u>
TP11		<u>PWM1</u>
TP12		<u>nSCS_DRV</u>
TP13		<u>SDI</u>
TP14		<u>SDO</u>
TP15		<u>SCLK</u>
TP16		<u>IPROPI/PWM2</u>
TP17		<u>SO</u>
TP18		<u>DRVOFF</u>
TP19		<u>nSLEEP</u>
TP49		<u>MCU_nSCS_CAN</u>

The diagrams show the following connections:

- MCU:** 3V3 MCU connected to pin 2 of LED D1. Pin 1 of D1 is connected to R28 (330 ohms), which is connected to GND. The LED is labeled Green.
- MCU STATUS:** MCU STATUS connected to pin 2 of LED D2. Pin 1 of D2 is connected to R29 (330 ohms), which is connected to GND. The LED is labeled Green.
- GUI STATUS:** GUI STATUS connected to pin 2 of LED D3. Pin 1 of D3 is connected to R30 (330 ohms), which is connected to GND. The LED is labeled Green.
- nFAULT:** 3V3 MCU connected to pin 2 of LED D4. Pin 1 of D4 is connected to R31 (330 ohms), which is connected to nFAULT. The LED is labeled Red.
- PVDD:** PVDD connected to pin 2 of LED D10. Pin 1 of D10 is connected to R44 (16k ohms), which is connected to GND. The LED is labeled Green.

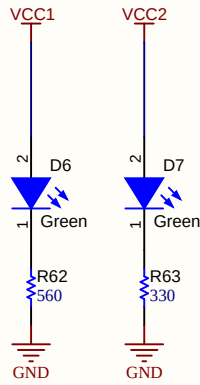
RST	RST
BSL_INVOKE	BSL_INVOKE
UART1_TX	UART1_TX
UART1_RX	UART1_RX
SWDIO	SWDIO
SWCLK	SWCLK

NOTE on UART:
TX/RX signals are with respect to the M0.

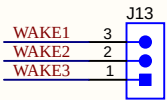
XDS110 <<- - - ->> M0

CAN_TX	CAN_TX
CAN_RX	CAN_RX
MCU_CAN_SW	MCU_CAN_SW
MCU_CAN_nINT	MCU_CAN_nINT
MCU_SCLK	MCU_SCLK
MCU_SDI	MCU_SDI
MCU_SDO	MCU_SDO
MCU_nSCS_CAN	MCU_nSCS_CAN
MCU_CAN_GFO	MCU_CAN_GFO
MCU_CAN_nRST	MCU_CAN_nRST
MCU_CAN_LTXD	MCU_CAN_LTXD
MCU_CAN_LRXD	MCU_CAN_LRXD
WAKE1	WAKE1
WAKE2	WAKE2
WAKE3	WAKE3

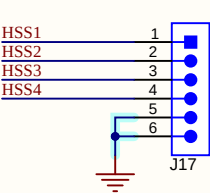
STATUS LEDs



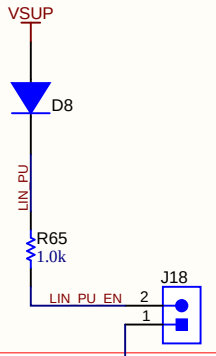
WAKE INPUTS



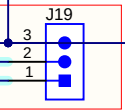
CAN HIGH-SIDE DRIVERS



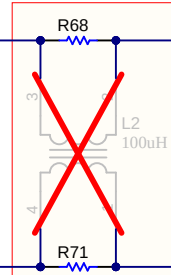
LIN
COMMANDER MODE



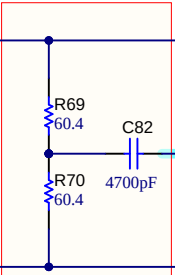
LIN
MONITOR



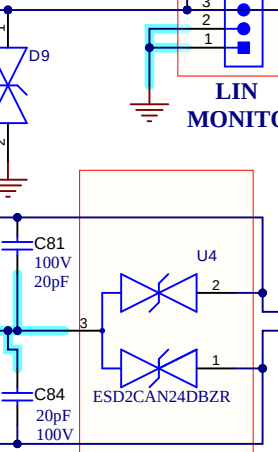
COMMON MODE
CHOKE



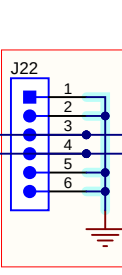
SPLIT
TERMINATION



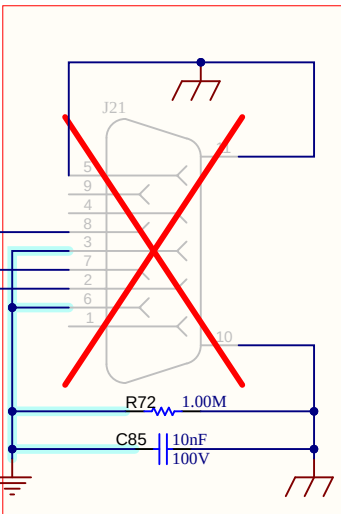
TVS
DIODES



CAN
MONITOR



DB9 CONNECTOR



M0 <-----> TCAN284x

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Orderable: DRV8003-Q1EVM	Designed for: Public Release	Mod. Date: 4/24/2024
TID #: N/A	Project Title: MD133_DRV8003	
Number: MD133	Rev: E2	Sheet Title: TCAN284x-Q1
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 5 of 1
Drawn By: Keerthi Kumanan	File: MD133_TCAN284x.SchDoc	Size: B
Engineer: Mojtaba Afshar	Contact: http://www.ti.com/support	

H1

SJ-5303 (CLEAR)

H2

SJ-5303 (CLEAR)

H3

SJ-5303 (CLEAR)

H4

SJ-5303 (CLEAR)

FID1

FID2

FID3

PCB Number: MD133

PCB Rev: E2

PCB

LOGO

Texas Instruments



PCB

LOGO

FCC disclaimer

PCB

LOGO

WEEE logo



PCB

LOGO

CAUTION. READ USER GUIDE BEFORE USE



Variant/Label Table	
Variant	Label Text
001	DRV8000-Q1EVM

ZZ1

Label Assembly Note

This Assembly Note is for PCB labels only

ZZ2

Assembly Note

These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3

Assembly Note

These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4

Assembly Note

These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.