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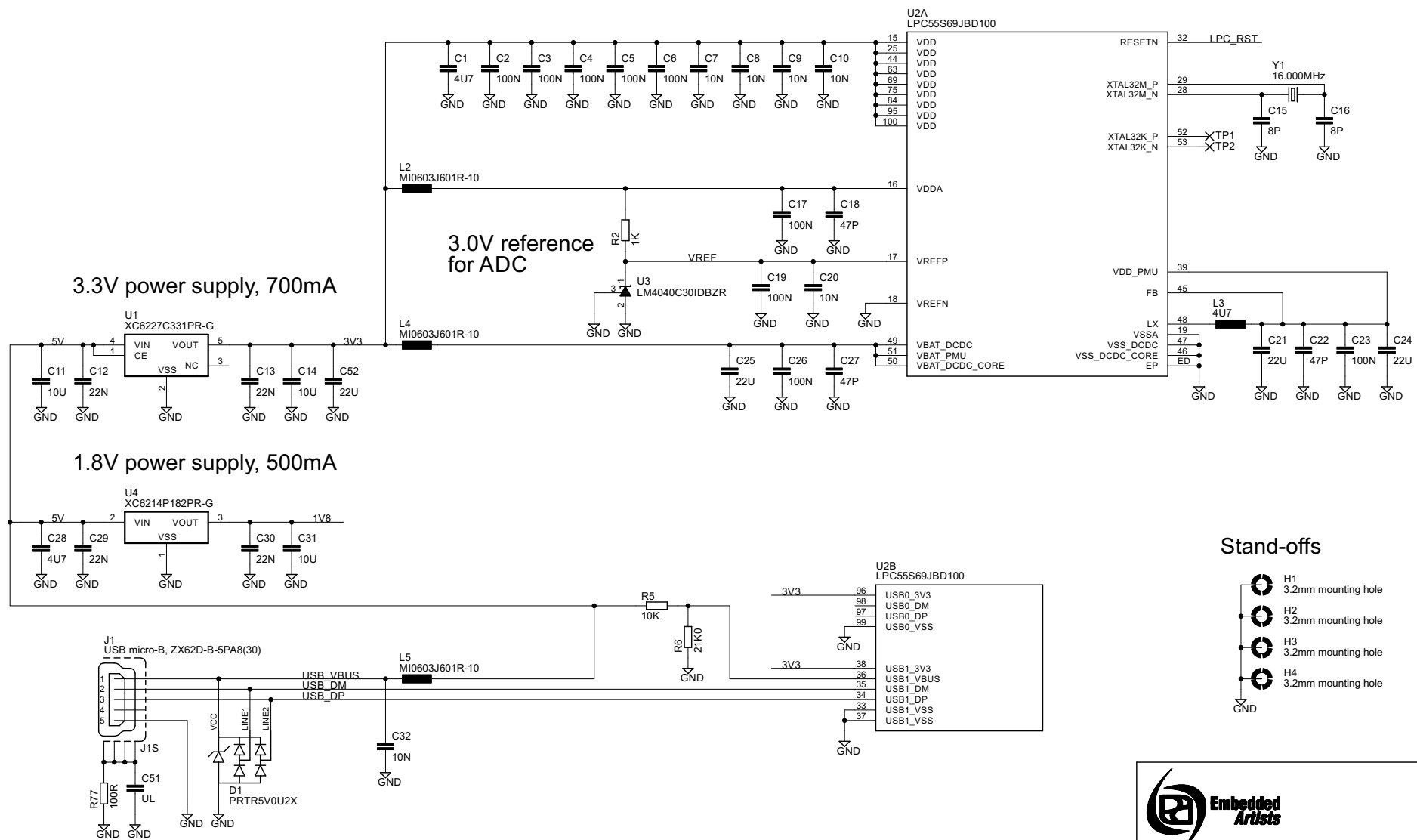
Page 8: LPC804 Demo Signal Generator

UL = UnLoaded = normally not mounted component.

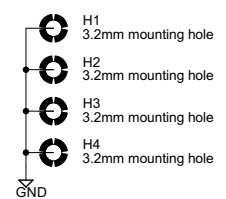
Default jumper settings are indicated in the schematic.
However, always check jumper positions on actual boards
since there is no guarantee that all jumpers are in default place.


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LPC55S69 MCU Powering and USB



Stand-offs





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LPC55S69 IO Ports

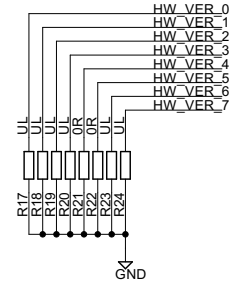
U2C
LPC55S69JBD100

PIO0_0	54	DBGIF_TCK_SWCLK	GPO (push-pull)
PIO0_1	7	DBGIF_TDI	GPO (push-pull)
PIO0_2	81	DBGIF_TMS_SWDIO	GPI (push-pull)
PIO0_3	83	DBGIF_TDO_SWO	GPI, FC3-UART-RXD
PIO0_4	86	FC3_CTS_SDA_SSEL0	FC3-I2C-SDA
PIO0_5	88	PIO0_5-ISP_EN-LED_SWD_ACT	ISP_EN and GPO
PIO0_6	89	SYNC_TRIG	GPI
PIO0_7	6	SYNC_LEAD	GPI (pullup required)
PIO0_8	26	TARGET_PWR_EN	GPI (push-pull)
PIO0_9	55	R7	GPO (push-pull)
PIO0_10	21	PIO0_10-SWO	GND
PIO0_11	13	PIO0_11-SWDCLK	GND
PIO0_12	12	PIO0_12-SWDIO	GND
PIO0_13	71	DBGIF_RESET_TXEN	GPO (push-pull)
PIO0_14	72	DBGIF_ISP_CTRL	GPO (push-pull)
PIO0_15	22	CTRL_HIGH_CURR	ADC0_2
PIO0_16	14	ADC0_CH1_CURR	ADC0_3
PIO0_17	8	CTRL_HIGH_CURR_EN	GPI
PIO0_18	56	HW_VER_6	GPI (pullup required)
PIO0_19	90	DBGIF_RESET	GPI
PIO0_20	74	HS_SPI_SSEL0-DIO0	GPI, HS_SPI_SSEL0
PIO0_21	76	FC3_RTS_SCL_SSEL1	FC3_RTS_SCL_SSEL1
PIO0_22	78	DBGIF_DETECT	GPI (pullup required)
PIO0_23	20	ADC1_CH1_VOLT	ADC0_0
PIO0_24	70	UART_RXD	FC0-UART-RXD (VCOM, target TXD)
PIO0_25	79	UART_TXD	FC0-UART-TXD (VCOM, target RXD)
PIO0_26	60	HS_SPI_MOSI-DIO1	GPI, HS_SPI_MOSI
PIO0_27	27	HW_VER_7	GPI (pullup required)
PIO0_28	66	DBGIF_TMS_SWDIO_TXEN	GPO (push-pull)
PIO0_29	92	CTRL_HIGH_CURR_DIS	CMPO_OUT
PIO0_30	94	CTRL_HIGH_CURR	GPI
PIO0_31	23	DBGIF_VREF	ADC0_3

U2D
LPC55S69JBD100

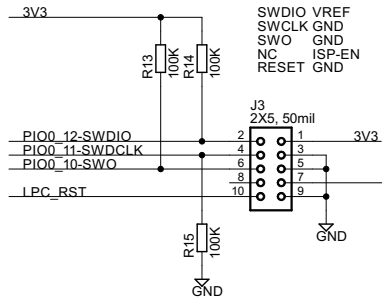
PIO1_0	11	ANALOG_IN1	ADC0_11
PIO1_1	59	IO_DIR1	GPO (push-pull)
PIO1_2	61	HS_SPI_SCK-DIO2	GPI, HS_SPI_SCK
PIO1_3	62	HS_SPI_MISO-DIO3	GPI, HS_SPI_MISO
PIO1_4	1	HW_VER_3	GPI (pullup required)
PIO1_5	31	HW_VER_4	GPI (pullup required)
PIO1_6	5	HW_VER_5	GPI (pullup required)
PIO1_7	9	MEAS_TRIG	GPI
PIO1_8	24	CURR_RANGE_SET	ADC0_4
PIO1_9	10	LPC804_RST	GPO
PIO1_10	40	CONSOLE_FC1_RXD	FC1_RXD_SDA_MOSI_DATA
PIO1_11	93	CONSOLE_FC1_TXD	FC1_TXD_SCL_MISO_WS
PIO1_12	67	LED_USB_COMM	GPO
PIO1_13	2	LED_SWO_ACT	GPO
PIO1_14	57	ADC0_CH1_CURR	ACMP0_IN_D
PIO1_15	82	LED_VCOM_ACT	GPO
PIO1_16	37	LED_HEARTBEAT	GPO
PIO1_17	64	LED_OPT1	GPO
PIO1_18	58	LED_OPT2	GPO
PIO1_19	58		
PIO1_20	4	LPC804-ISP_RXD	FC4_TXD_SCL_MISO_WS
PIO1_21	30	LPC804-ISP_TXD	FC4_RXD_SDA_MOSI_DATA
PIO1_22	41	CTRL_CAL_R1	GPO (push-pull)
PIO1_23	42	CTRL_CAL_R2	GPO (push-pull)
PIO1_24	3	CTRL_CAL_DISC	GPO (push-pull)
PIO1_25	77	IO_DIR2	GPO (push-pull)
PIO1_26	68	CTRL_CAL_R3	GPO (push-pull)
PIO1_27	85	HW_VER_0	GPI (pullup required)
PIO1_28	73	HW_VER_1	GPI (pullup required)
PIO1_29	80	CTRL_CAL_R4	GPO (push-pull)
PIO1_30	65	HW_VER_2	GPI (pullup required)
PIO1_31	91	LPC804-ISP_EN	GPO (push-pull)

HW version and Feature set supported

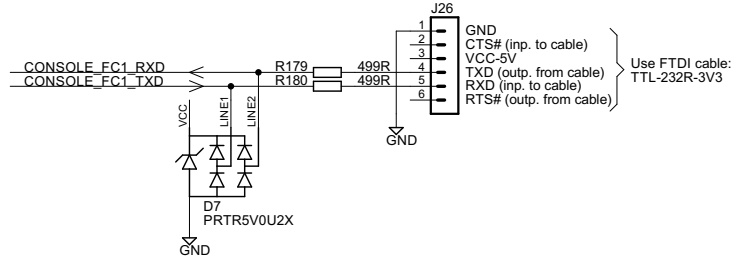


- HW_VER_0: USB power negotiation when low
- HW_VER_1: 1-bit board id code
- HW_VER_2: Disable USB-SIO bridge when low
- HW_VER_3: OB(0) or Pro (1) id
- HW_VER_4: Board id code is valid when low
- HW_VER_5: Power measurement enabled when low
- HW_VER_6: VCOM disabled when low
- HW_VER_7: SWD debug disabled when low

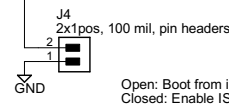
SWD interface



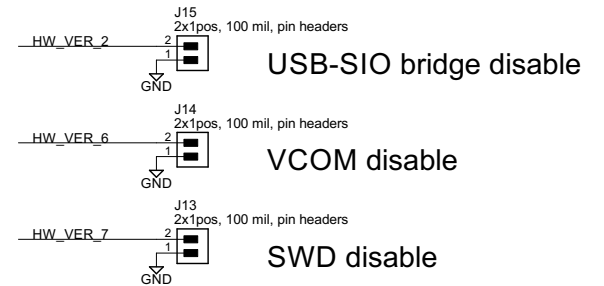
Firmware debug console header




Enable ISP mode (Firmware update)



DEFAULT_ISP_MODE: ISP_MODE_2/ISP_MODE_1/ISP_MODE_0 = 001 => USB HID ISP





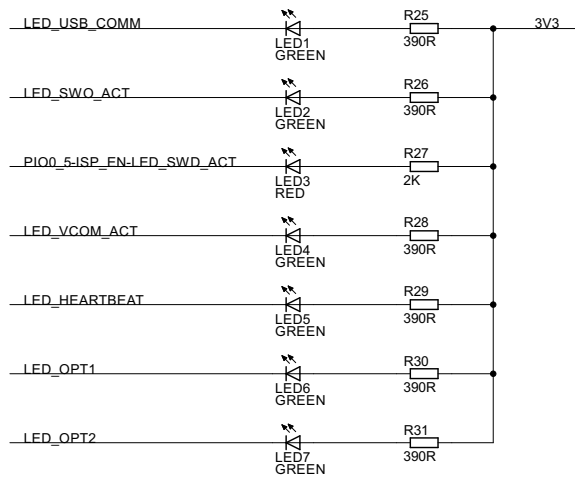
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LEDs



LED1: USB communication

LED2: SWO activity

LED3: Status

LED4: VCOM activity

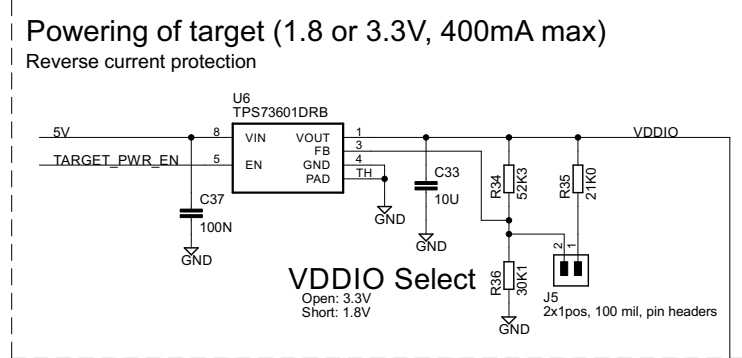
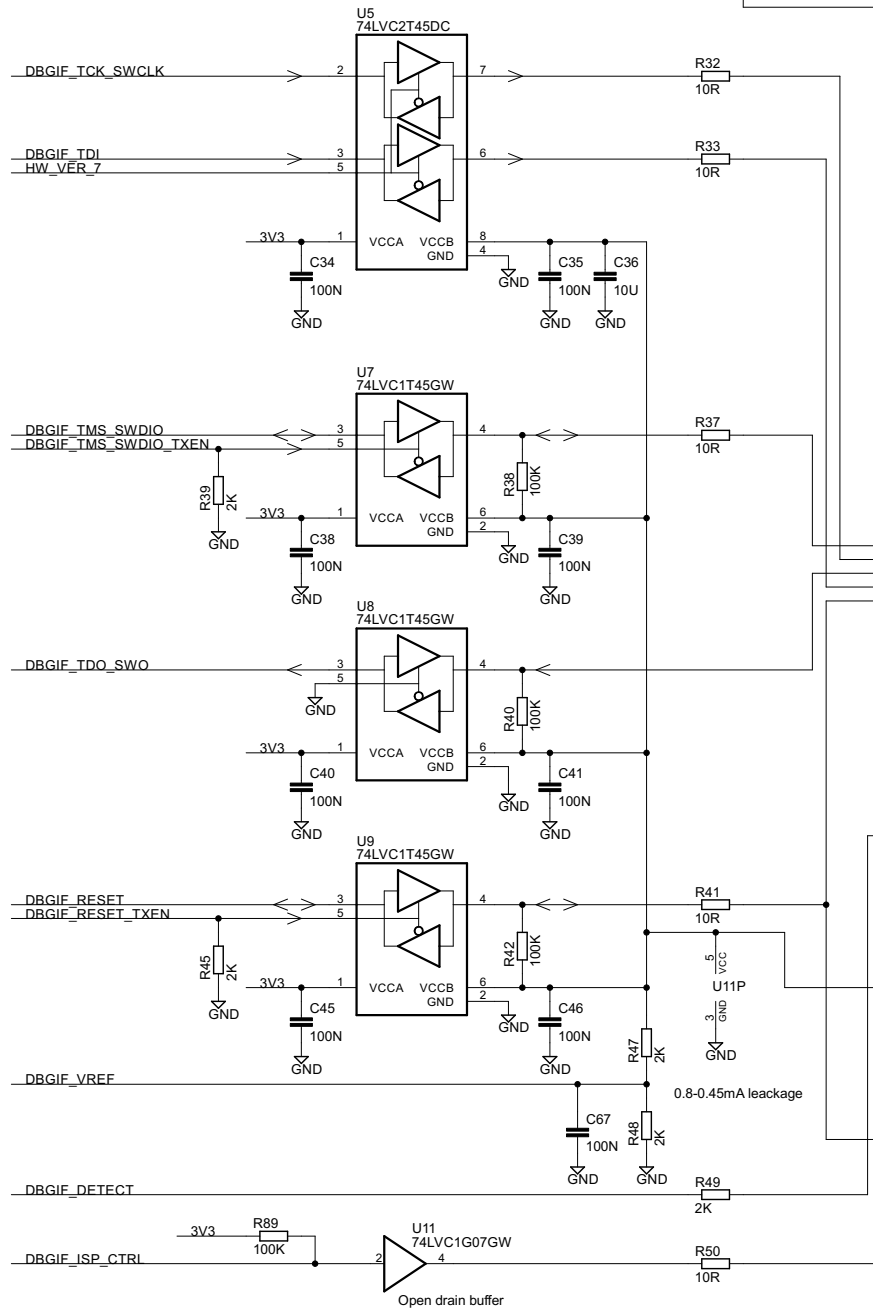
LED5: FUNC

LED6: SIO activity

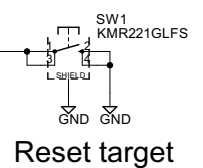
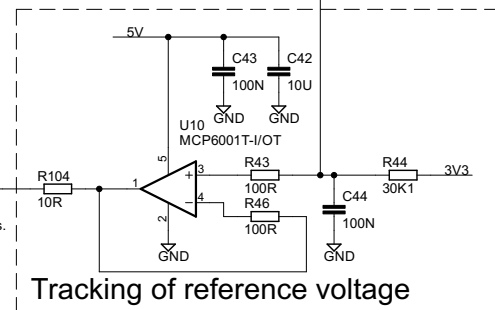
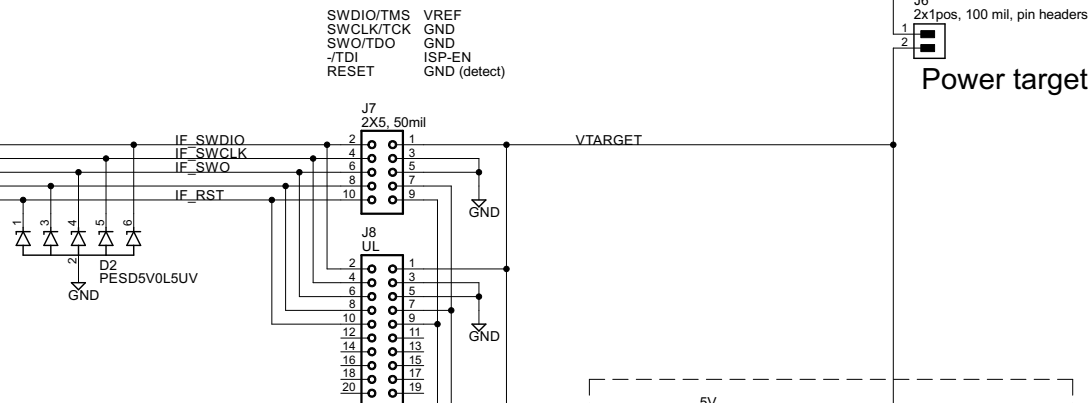

LED7: NRG (Energy)

Support Vtarget 1.2-5.5V

Debug Interface



Cortex Debug (SWD/JTAG) interface

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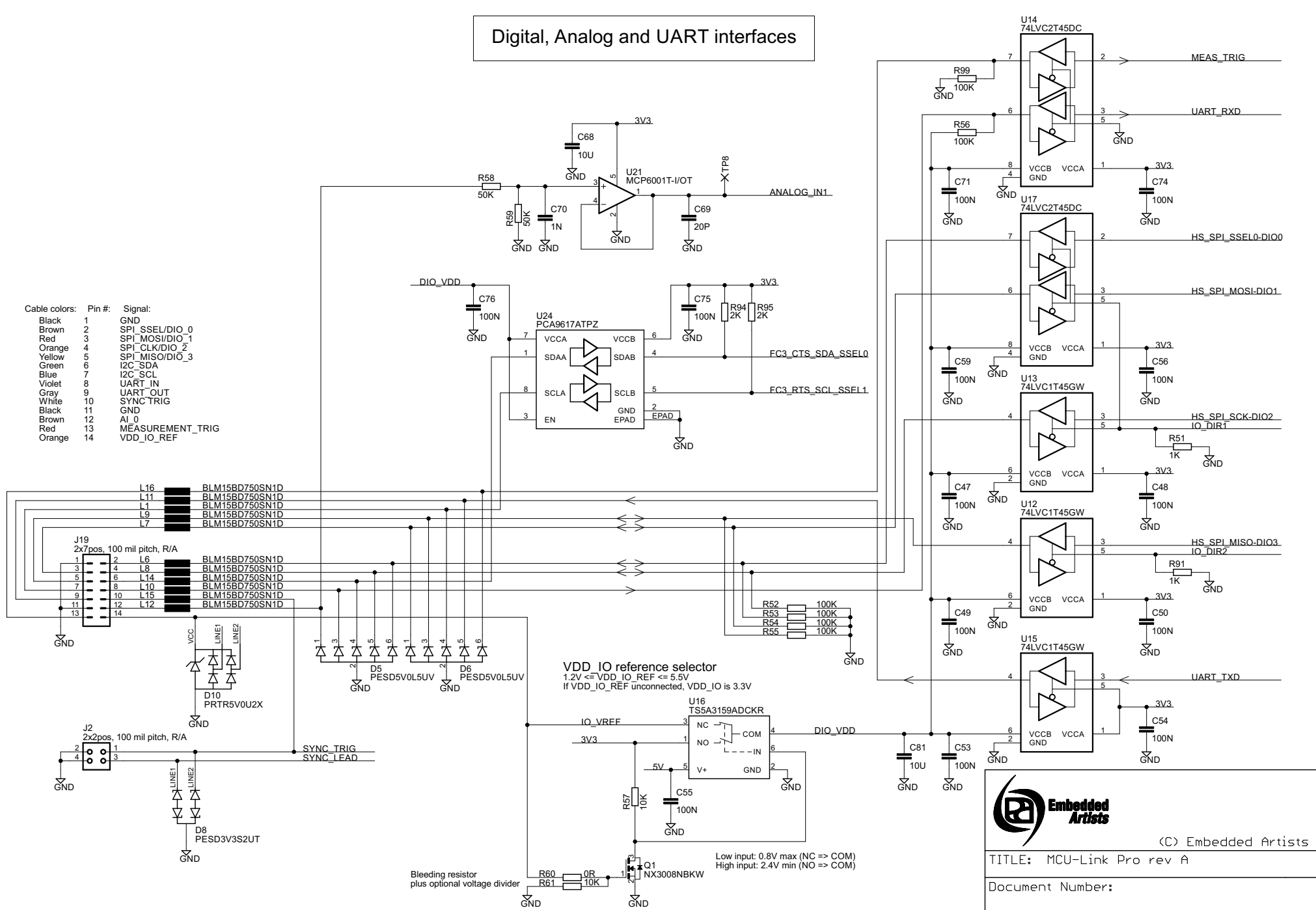
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Digital, Analog and UART interfaces


Cable colors: Pin #: Signal:

Black	1	GND
Brown	2	SPI_SSEL/DIO_0
Red	3	SPI_MOSI/DIO_1
Orange	4	SPI_CLK/DIO_2
Yellow	5	SPI_MISO/DIO_3
Green	6	I2C_SDA
Blue	7	I2C_SCL
Violet	8	UART_IN
Gray	9	UART_OUT
White	10	SYNC_TRIG
Black	11	GND
Brown	12	AI_0
Red	13	MEASUREMENT_TRIG
Orange	14	VDD_IO_REF



VDD_IO reference selector
 1.2V <= VDD_IO_REF <= 5.5V
 If VDD_IO_REF unconnected, VDD_IO is 3.3V

Low input: 0.8V max (NC => COM)
 High input: 2.4V min (NO => COM)



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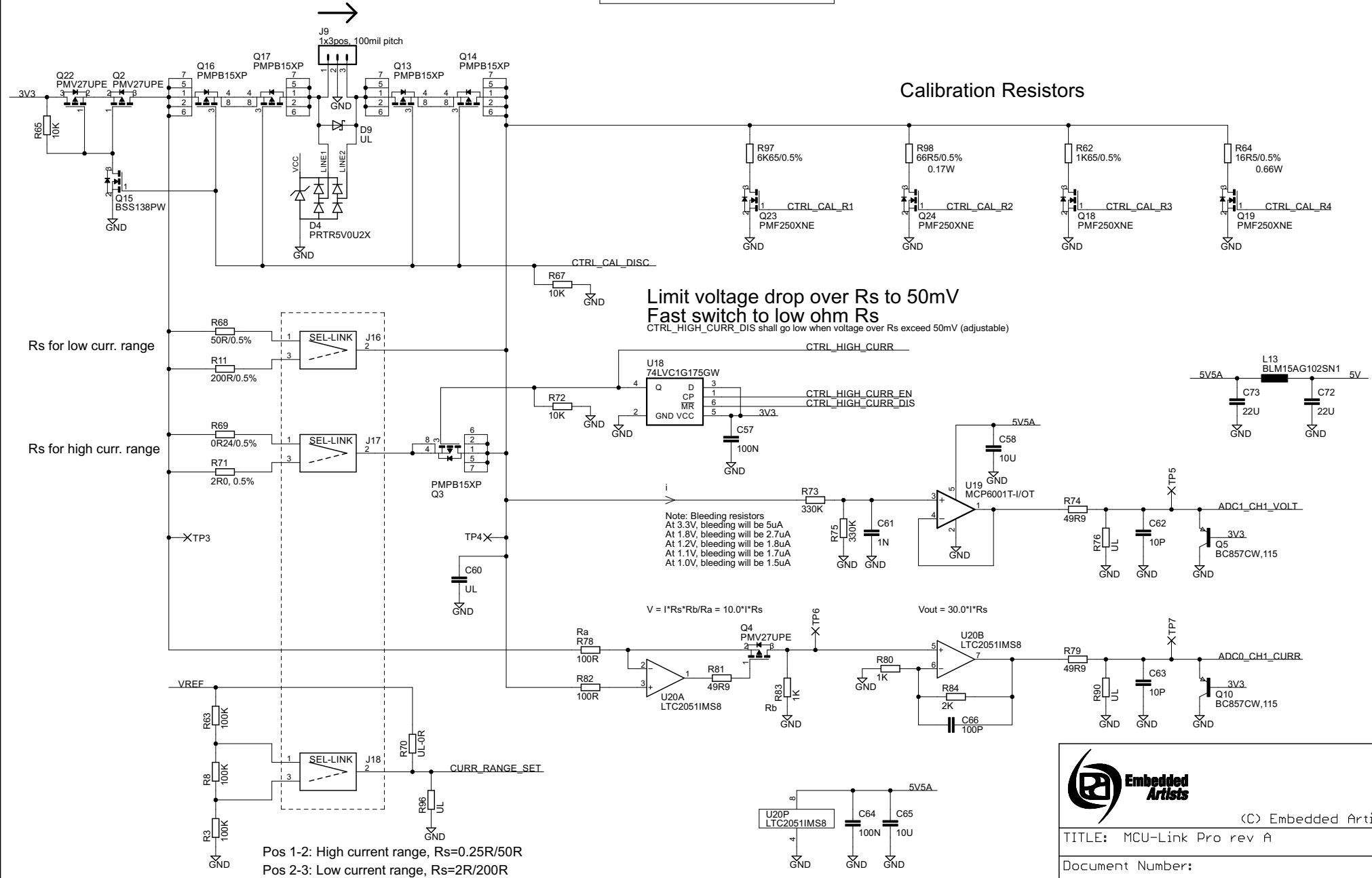
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Current Measurement

VCC range: 1.6V - 3.6V





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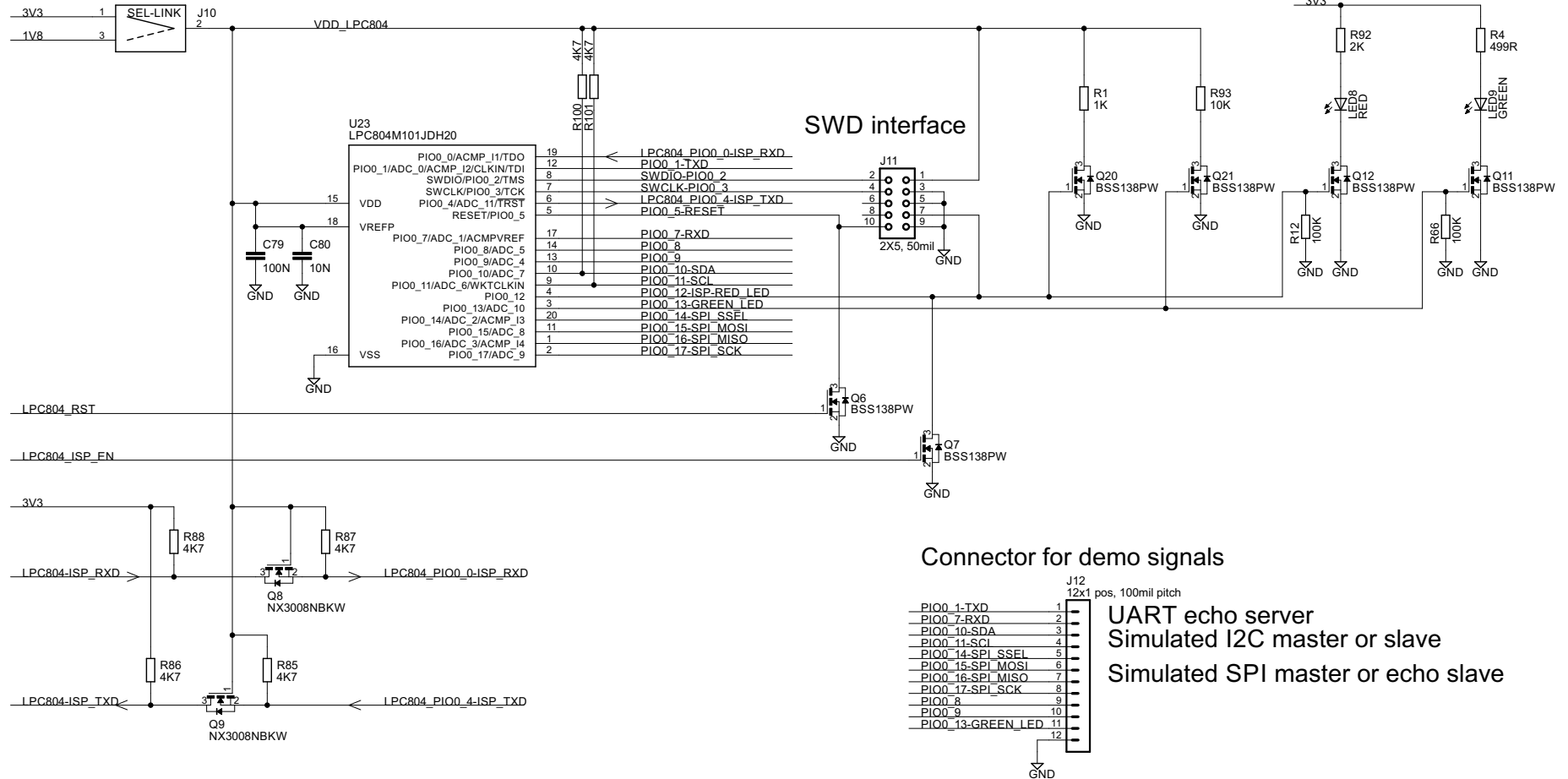
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LPC804 Demo Signal Generator

VDDIO Select; 3.3V or 1.8V
(or leave open and power via JTAG debug interface connector)

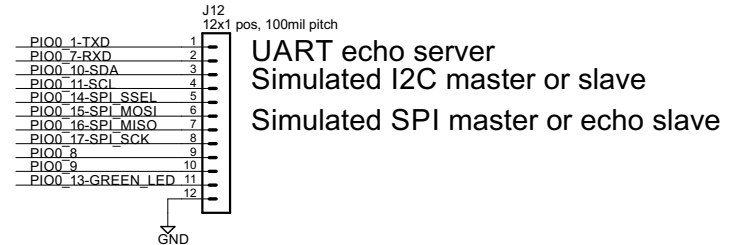
Dummy loads so simulate
varying current consumption

Power LEDs from 3.3V to work
when VDD_LPC804 is 1.8V



Level translators if VDDIO for LPC804 is 1.8V

Connector for demo signals



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