

PCB1  
SM1000A  
**PRINTED CIRCUIT BOARD**

LED-R/G

		U3A	STM32F407	
WAKE_UP	23	PA0	PE0	97
AIN1	24	PA1	PE1	98
AIN2	25	PA2	PE2	1
	26	PA3	PE3	2
DAC1_OUT	29	PA4	PE4	3
DAC2_OUT	30	PA5	PE5	4
	31	PA6	PE6	5
	32	PA7	PE7	38
	67	PA8	PE8	39
VBUS	68	PA9	PE9	40
OTG_ID	69	PA10	PE10	41
OTG_DM	70	PA11	PE11	42
OTG_DP	71	PA12	PE12	43
SWDIO	72	PA13	PE13	44
SWCLK	76	PA14	PE14	45
	77	PA15	PE15	46
	35	PB0	PD0	81
	36	PB1	PD1	82
BOOT1	37	PB2	PD2	83
SWO	89	PB3	PD3	84
	90	PB4	PD4	85
	91	PB5	PD5	86
SCL	92	PB6	PD6	87
	93	PB7	PD7	88
	95	PB8	PD8	55
SDA	96	PB9	PD9	56
	47	PB10	PD10	57
	48	PB11	PD11	58
	51	PB12	PD12	59
	52	PB13	PD13	60
	53	PB14	PD14	61
	54	PB15	PD15	62
OTG_PWR_ON	15	PC0		
	16	PC1		
	17	PC2	PH0	12
	18	PC3	PH1	13
	33	PC4		
	34	PC5		
	63	PC6	PC14	8
	64	PC7	PC15	9
	65	PC8		
	66	PC9		
	78	PC10	NRST	14
	79	PC11		
	80	PC12		
	7	PC13	BOOT0	94

**STM32F407 PWR CIRCUIT**

The schematic diagram illustrates the power supply circuit for the STM32F407 microcontroller. The circuit includes the following components and connections:

- Input Power:** VDD
- Inductor:** L1 (FCM1608)
- Capacitors:**
  - C6: 1uF, 16V, TANT
  - C7: 100nF, 16V
  - C10: 1uF, 16V, TANT
  - C11: 100nF, 16V
  - C14: 100nF, 16V
  - C15: 100nF, 16V
  - C16: 100nF, 16V
  - C17: 100nF, 16V
  - C18: 100nF, 16V
  - C19: 100nF, 16V
  - C20: 100nF, 16V
  - C21: 100nF, 16V
  - C22: 1uF, 16V
  - C12: 2.2uF, 16V
  - C13: 2.2uF, 16V
- Resistor:** R31 (0 Ohm)
- Microcontroller Pins:**
  - VDD5, VDD12, VDD4, VDD1, VDD2, VDD3
  - VSS5, VSS4, VSS2, VSS
  - VREF+, VDDA, VBAT
  - VSSA, VCAP1, VCAP2
- Ground Connections:** GND

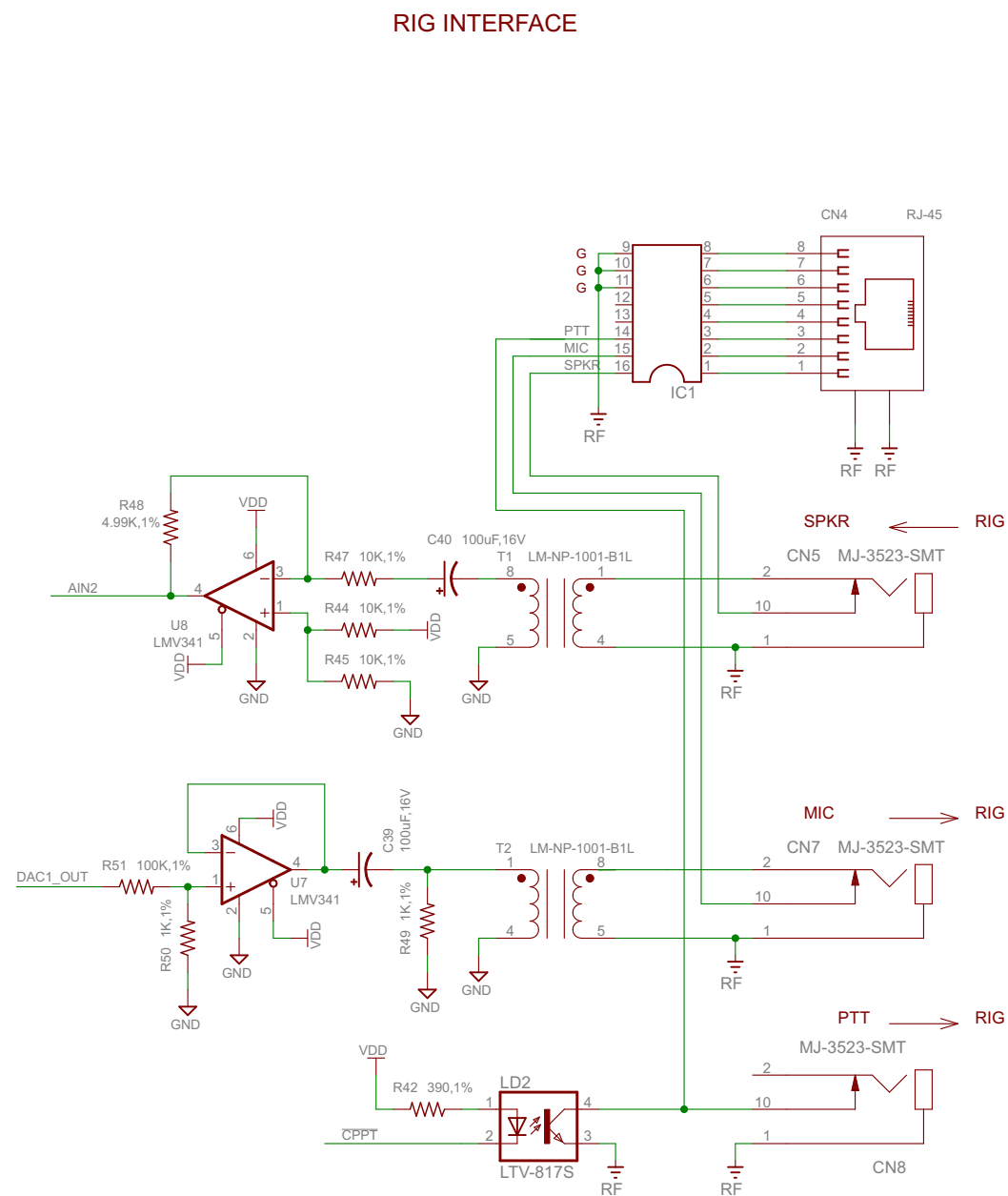
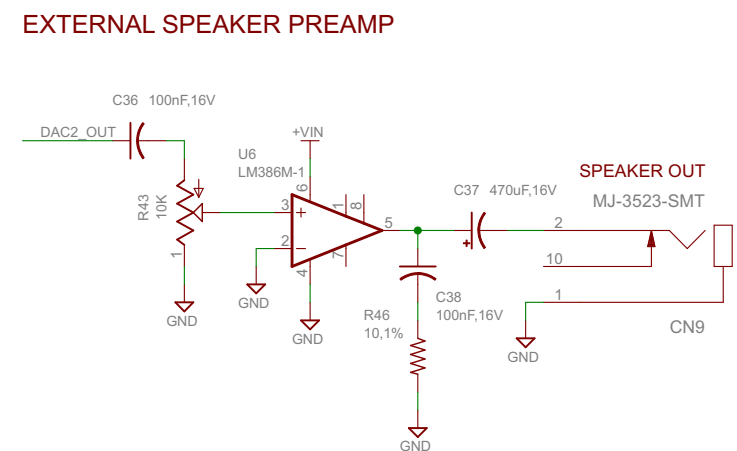
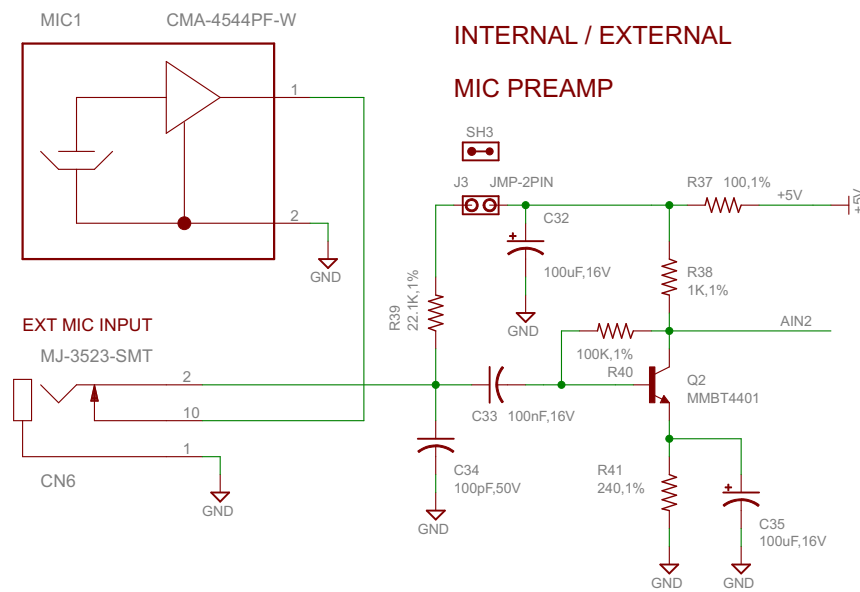
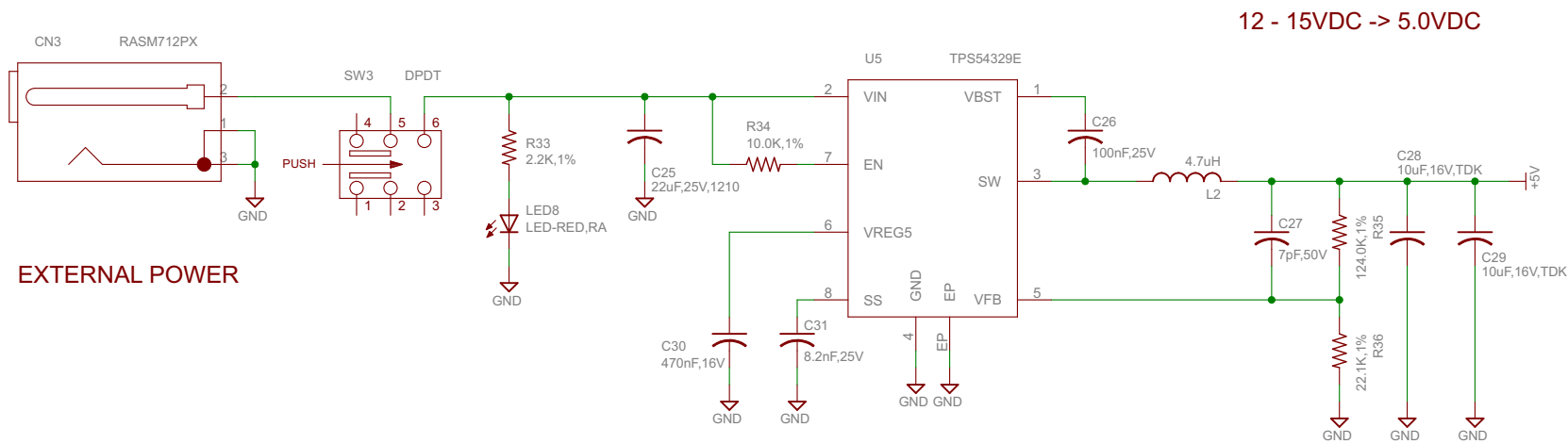
**OTG USB INTERFACE**

The schematic diagram illustrates the OTG USB interface circuit. Key components and connections include:

- Power Input:** A +3.3V supply is connected to the circuit. A +5V supply is also present.
- DC-DC Converter (U1):** An STMPS2141 converter is used to regulate the +3.3V supply. Its IN pin is connected to the +3.3V supply, and its OUT pin is connected to the +3.3V output. The EN pin is connected to the +5V supply, and the FAULT pin is connected to GND.
- USB Controller (U2):** An EMIF02-USB03F2 controller is used to manage the USB interface. Its VBUS pin is connected to the +3.3V output, and its D+OUT pin is connected to the DM pin of the USB connector (CN1). The D-IN pin is connected to the DP pin of the USB connector (CN1). The D+OUT pin is connected to the ID pin of the USB connector (CN1). The D-IN pin is connected to the GND pin of the USB connector (CN1). The D+OUT pin is connected to the GND pin of the USB connector (CN1). The D-IN pin is connected to the GND pin of the USB connector (CN1).
- USB Connector (CN1):** A MOLEX-MINI-B-SMT connector with pins for VBUS, DM, DP, ID, GND, and Shield.
- LEDs and MOSFET:** Two LEDs (LED1, LED2) and a MOSFET (Q1) are used for status indication and control. LED1 is connected to the +3.3V supply and GND. LED2 is connected to the +3.3V supply and GND. Q1 is connected to the +3.3V supply and GND.
- Resistors and Capacitors:** Various resistors (R7, R8, R9, R10, R11, R13, R14, R16, R17) and a capacitor (C1) are used for current limiting, voltage division, and filtering.

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# ROWETEL

TITLE: Smart Mic Circuit Board

Document  
Number: SM1000

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