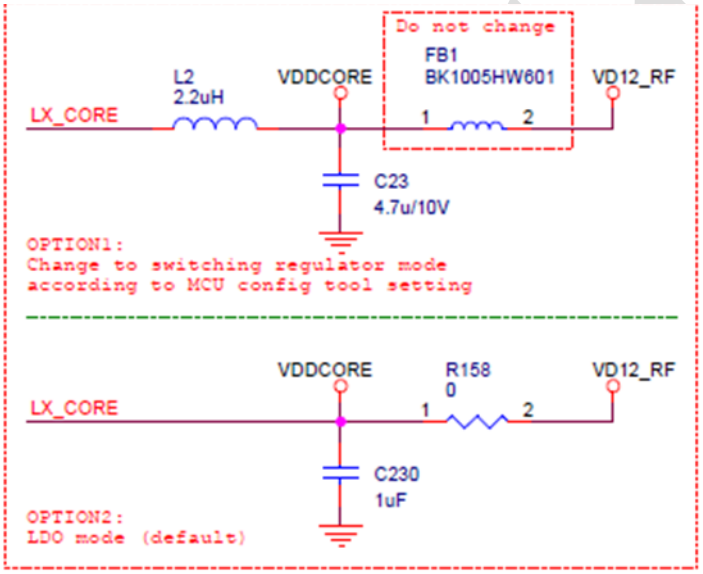
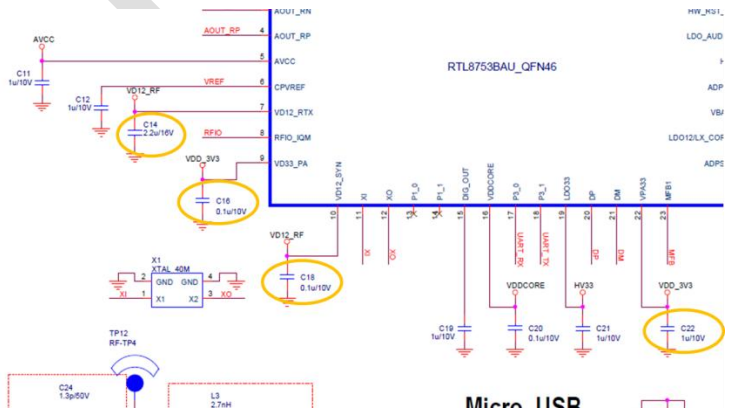
Realtek Semiconductor Corp.

Document P/N: [ ]

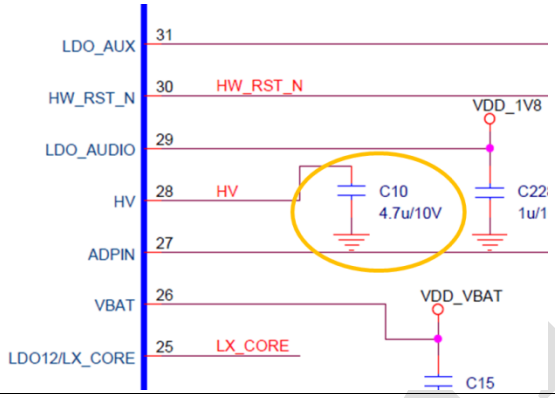
RTL8753BAU Schematic check list v1.1

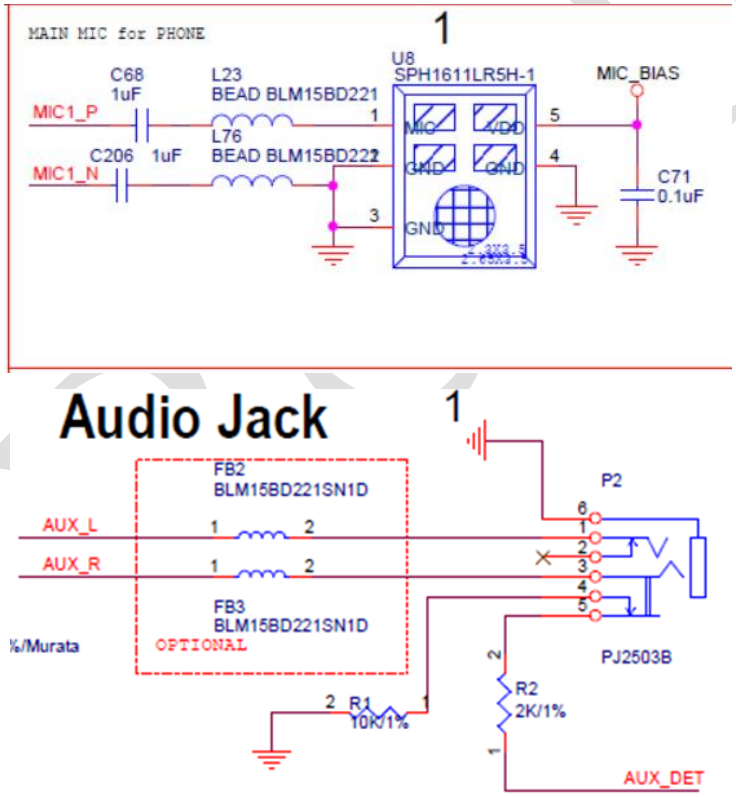
Project:	Schematic Version:	Customer:
Review by:	Approval by:	Date:

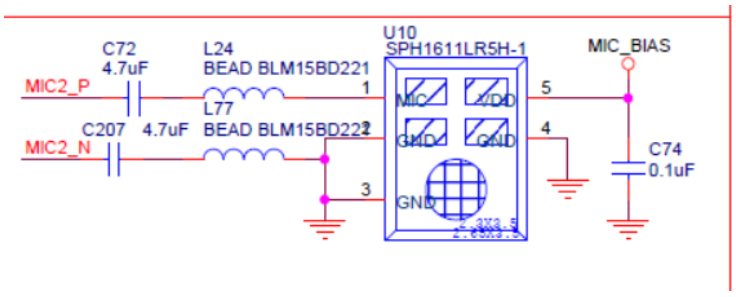
Content		PASS	Fail	N/A	Note
RF circuit					
1	Check the RF inductor in the RF π patching Suggested QVL: ACX, Murata, check value and specification.				
2	Check the four π-matching network, follow reference circuit is mandatory, any change is not allowed.				
3	Switching regulator mode ,please use bead BK1005HW601-T between VDD_1V2 and VDD_1V2_RF LDO mode use 0ohm between VDD_1V2 and VDD_1V2_RF. 				
4	The RF power bypass cap should be 1uF X5R/6.3V or above. 				
5	The antenna matching could not be ignored and use the IC				

	matching to replace it, e.g. in the RF circuit, at least 4 IC matching and 3 antenna matching is required.				

Analog and Digital Circuit

6	The capacitor 4.7uF at the HV pin(28 pin) should be X5R/10V or above. 				
7	Use SWR power inductor should be 2.2uH, capacitor 4.7uF The inductor spec: saturation current> 0.5A, DCR as small as possible. **Note: very important, saturation current is not equal to rated current.** The capacitor spec: X5R/6.3V or above Inductor suggested QVL: Zenithtek, TAIYO Capacitor suggested QVL: Walsin, Murata, Darfon, ZRB15XR61A475ME01D/MURATA				
9	40MHz crystal spec (a) Tolerance under room temperature: ±5ppm (b) Temperature variation: ±15ppm under -40°C~85°C ➔ (a)+(b) total variation ±20ppm Or total variation: ±20ppm with customer defined working temperature If C_L=7pF → ESR could not be over 50Ω If C_L=9pF → ESR could not be over 40Ω If customer does not do frequency calibration in mass production, it is suggested to switch off the internal trimming cap, customer should fine tune the external load capacitor and use high precision crystal part, e.g. crystal with ±5ppm spec				
10	32.768K crystal spec If C_L= 7pF, the external load capacitor could be ignored, otherwise, the external load capacitor is required.				
11	HW_RST:				

	There should be a '0.1uF' capacitor between this pin and ground. An external adapter in reset circuit is suggested to reserve.				
12	The capacitor at 3.3V power should be 1uF/10V/X5R or above. The capacitor at 1.8/1.2V power should be X5R/6.3V or above.				
13	The capacitor at LDO_AUX should be 1uF/X5R/6.3V or above				
14	A 1uF/X5R capacitor at CPV_{REF} is required in the internal codec is enabled.				
15	Battery thermal protection, the NTC thermistor should be attached on the battery pack, do not reserve it on EVB, there is no relationship between the battery temperature and PCB temperature. For this purpose, at least three pin on the battery connector is required, VBAT, GND and THE_DET.				
16	If a bead at the power path RTL8773/8753 VBAT is needed, the bead DCR should be smaller than 0.5Ω				
17	The external SPI flash QVL: MXIC, ESMT and GD, the others is not supported.				
18	The mic phone / line-in is used for voice, the value of ac couple capacitor is the 1uF 				
20	The placement and layout should be the differential mode even the single-end mic phone				

					
22	Always check if there is any new updated reference from REALTEK.				
MISC					
23	Check the pin definition and symbol is correct.				
24	Check the MP test point Mandatory test point for control: UART_RX, UART_TX, P2_0, VBAT, ADP_IN, GND PMU test point: - Mandatory: switching regulator output (AVCC_DRV and VDDCORE), VPA33 - Optional: DIG_OUT, AVCC, MIC_BIAS RF test point: - Add a RF test point after the IC RF matching network Audio test point: - DAC: AOUT_LP/LN/RP/RN - ADC: MIC1/2				
PASS：the design is correct。 FAIL：Not properly, need to describe the reason. N/A：No such request					