Samsung SM-A025F Service Manual





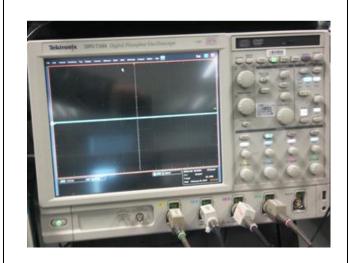
SERVICE

Manual



MT Pro

8-3. Flow chart of Troubleshooting.





Oscilloscope

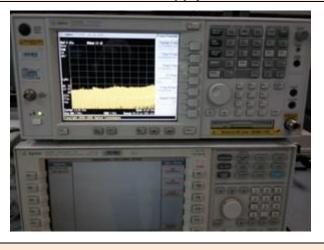
Digital Multimeter





Power Supply

+ driver, ESD Safe Tweezer





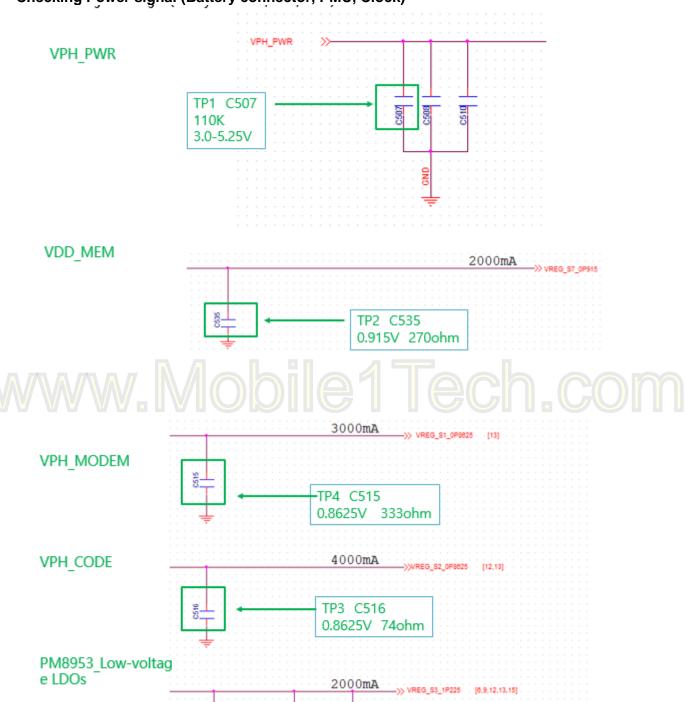
8960 & Spectrum Analyzer

Soldering iron

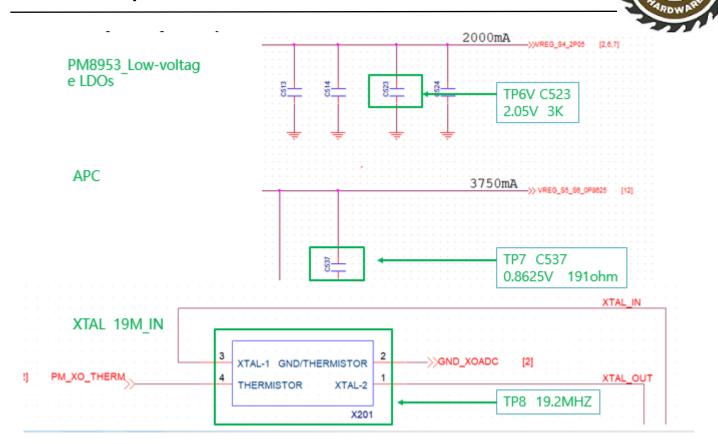
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8-4-1. Power On

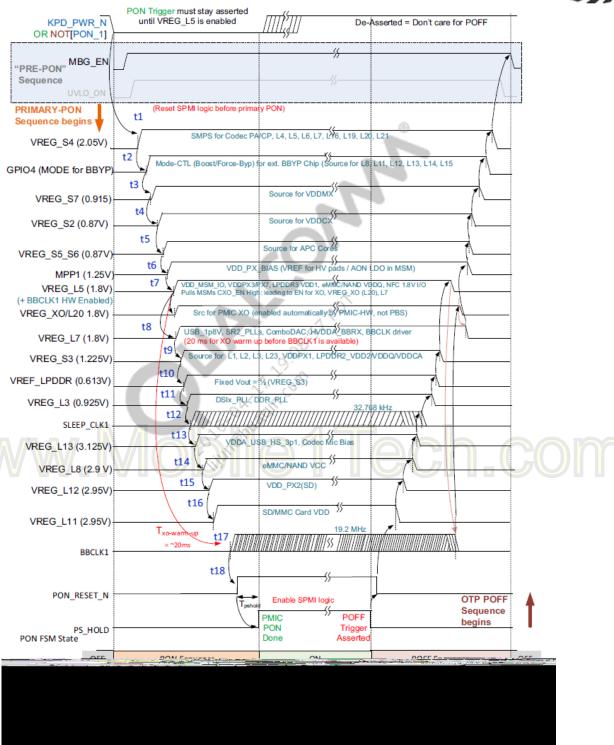
■ Checking Power signal (Battery connector, PMU, Clock)



TP5 C521 1.225V 838K







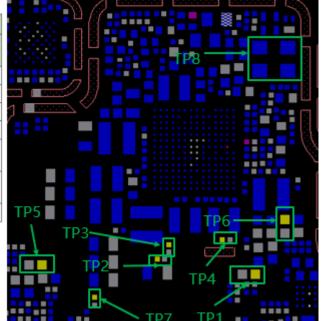
Power-on Voltage(VREG_S2~7,L2,L3,L5,L7,L8,L11~13)





No Power

Power on voltage check													
Power Domain	Configurab le Voltage	Signal Name	Measurment Location	TP									
VPH_PWR	3. 0-5. 25V	VPH_PWR	C507	TP1									
VDD_MEM	0.915V	VREG_S7_0P915	C535	TP2									
VDD_CORE	0.8625V	VREG_S2_0P8625	C516	TP3									
VDD_MODEM	0.8625V	VREG_S1_0P8625	C515	TP4									
PM8953_Low-vol tage LD0s	1. 225V	VREG_S3_1P225	C521	TP5									
PM8953_High-vo ltage LD0s	2. 04V	VREG_S4_2P05	c523	TP6									
APC	0.87v	VREG_S5_S6_0P8625	c537	TP7									

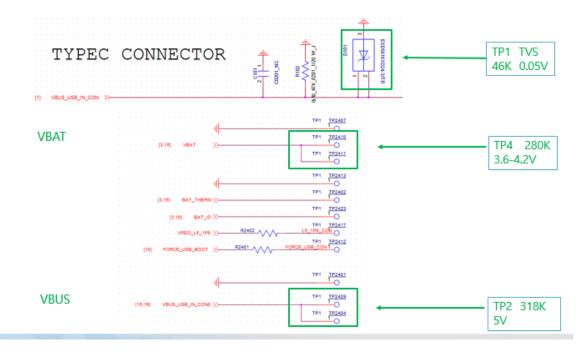


Oscillate frequency measurement

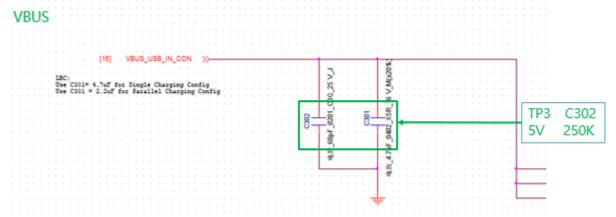
Signal Name	Frequency MHZ	Measurment Locati on	TP
XTAL_19M_IN	19.2M	X201	TP8

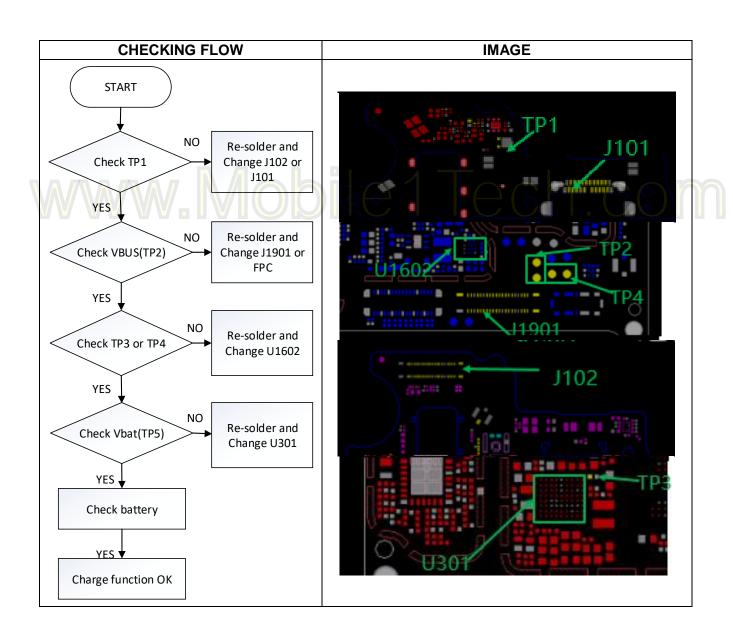
8-4-2. Charging

■ The charging controlled by PMU chip PMI632 (U301) and OVP chip U1602





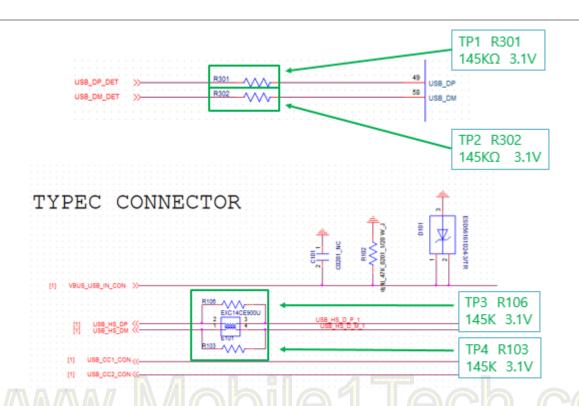


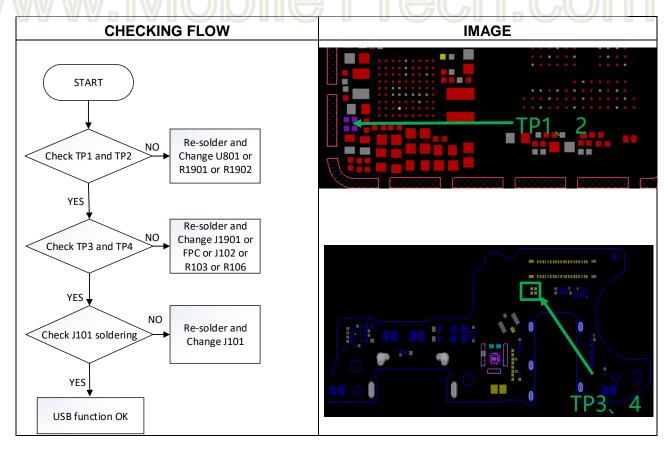


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8-4-3. USB

■ I/O connector is used as the USB port.

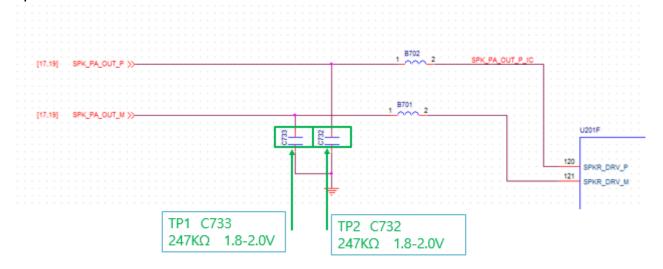


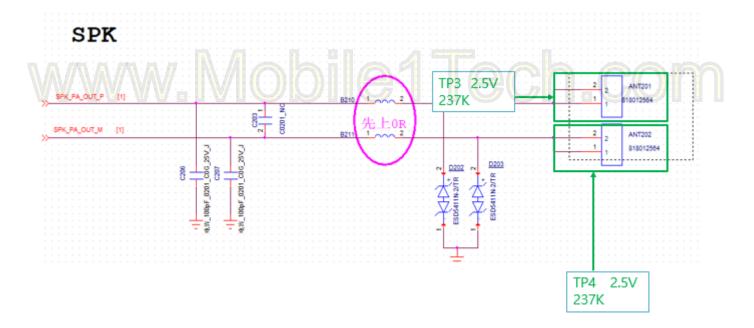


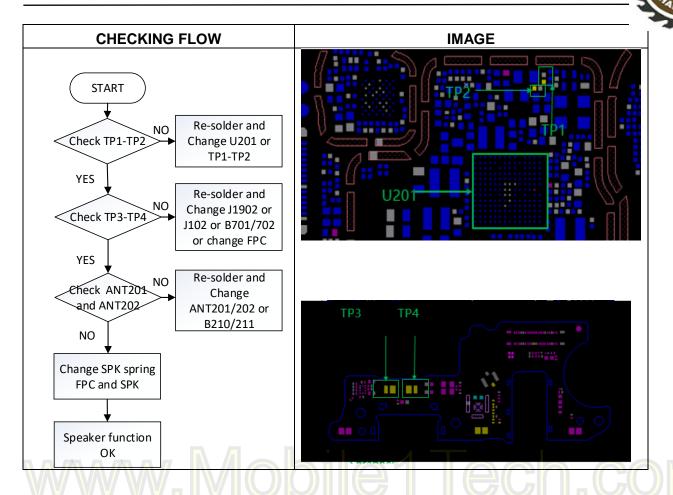


8-4-4. Audio speaker

The Speaker control signals are generated by chip PM8953(U201), the chip and the speaker are to be checked out.

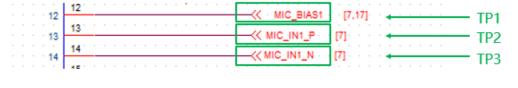


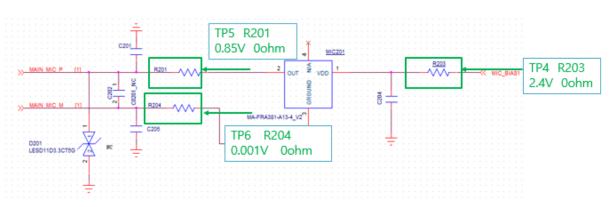




8-4-5. Audio_ MIC

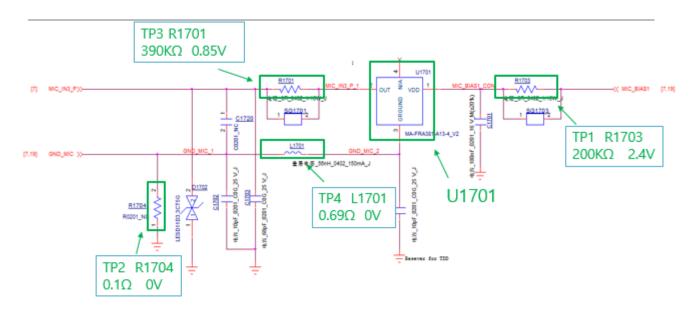
■ The MIC control signals are generated by chip PM8953(U201), the chip and the MIC(main mic U201 and sub mic U1701) are to be checked out.



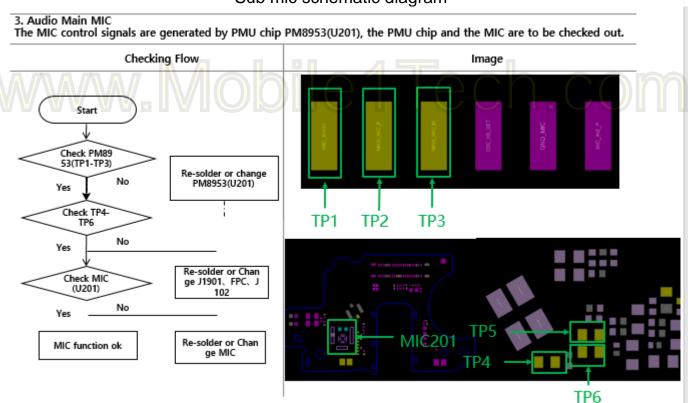


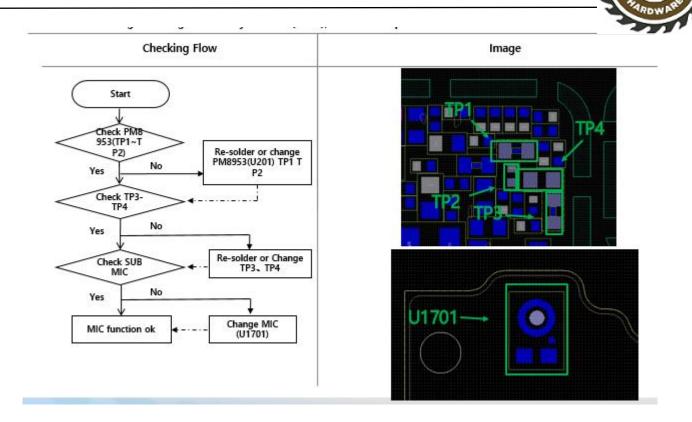


Main mic schematic diagram



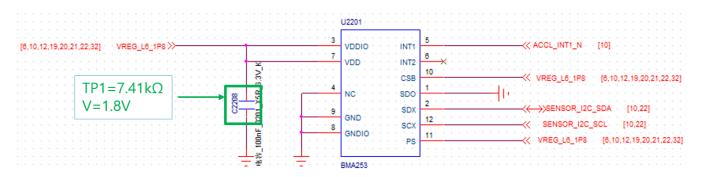
Sub mic schematic diagram

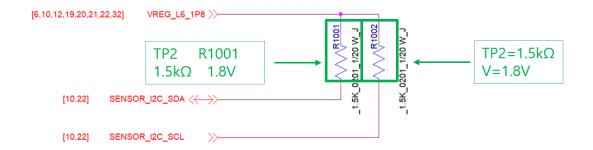


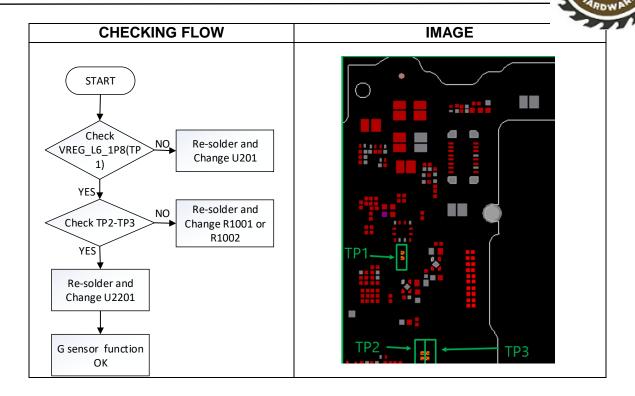


8-4-6. G sensor

The G sensor is calibrated by using SW algorithm.

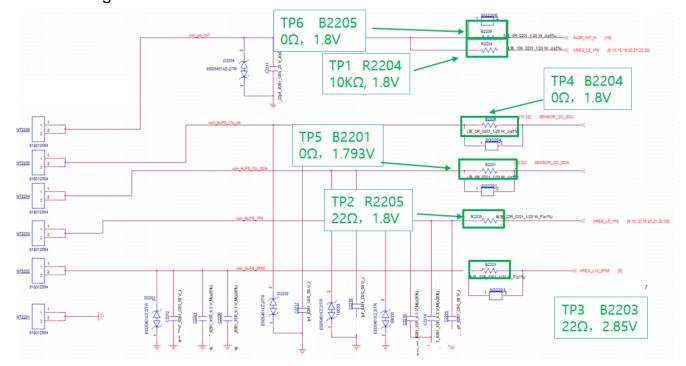


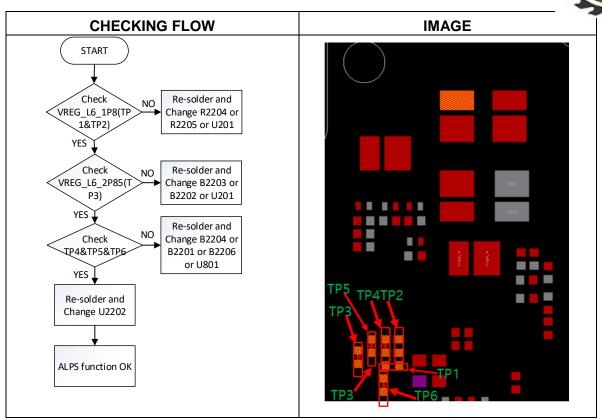




8-4-7. Proximity and light sensor

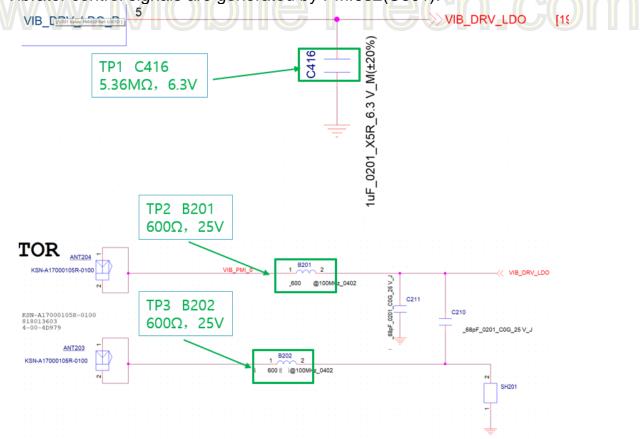
■ Proximity and Light Sensor is worked as below: Control the screen's on/off operation automatically while making phone calls, and adjust the screen brightness according to ambient light.



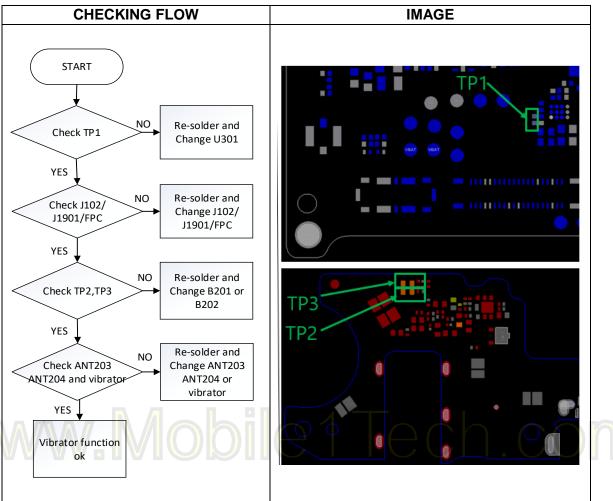


8-4-8. Vibrator

■ The Vibrator control signals are generated by PMI632(U301).

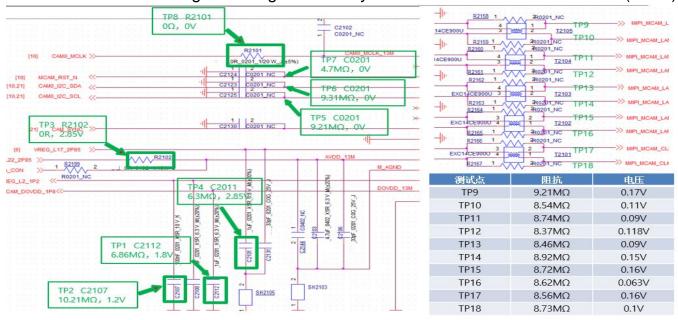


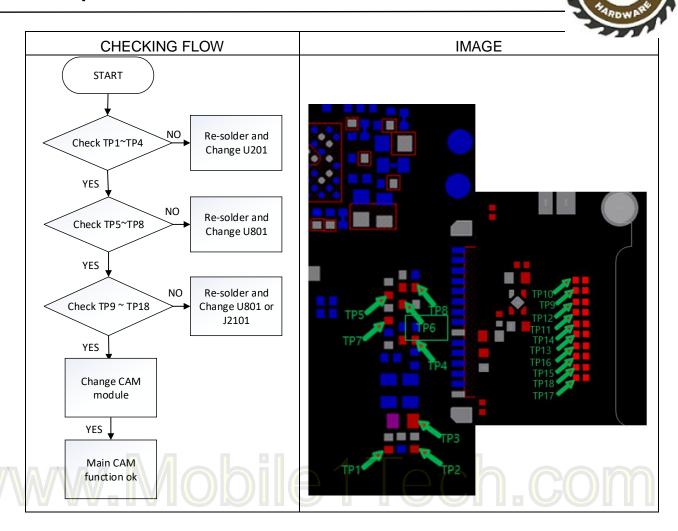




8-4-9.Main Camera

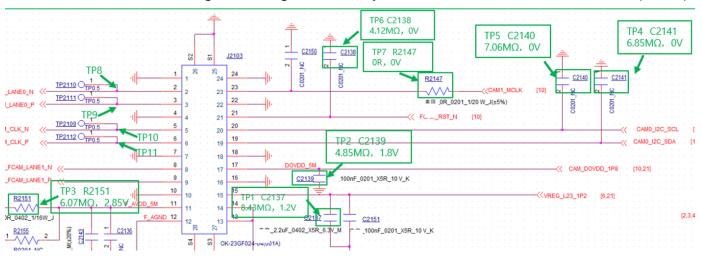
■ The Camera control signals are generated by PM8953 (U201) and SDM450(U801).

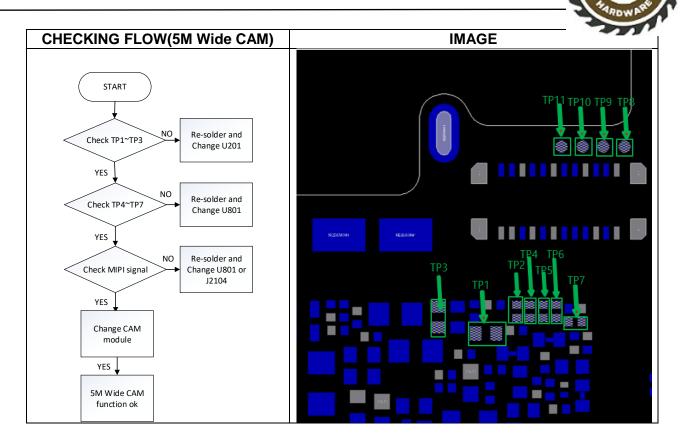




8-4-10. Rear 5M auxiliary Camera

■ The Camera control signals are generated by PM8953 (U201) and SDM450(U801).

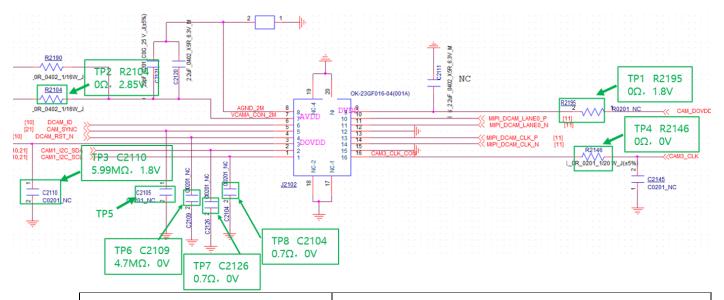


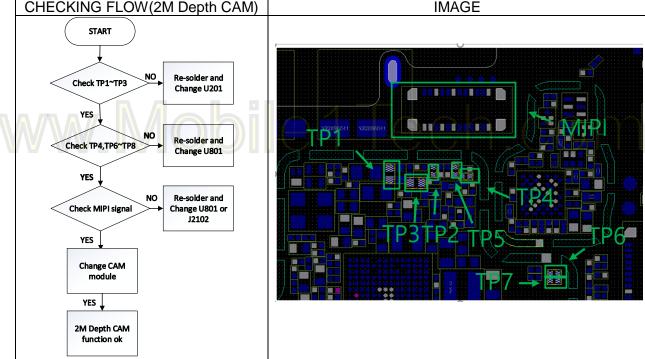






8-4-11. Rear 2M auxiliary Camera

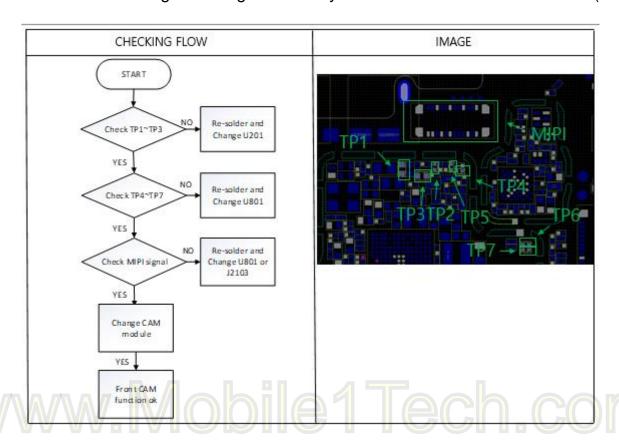


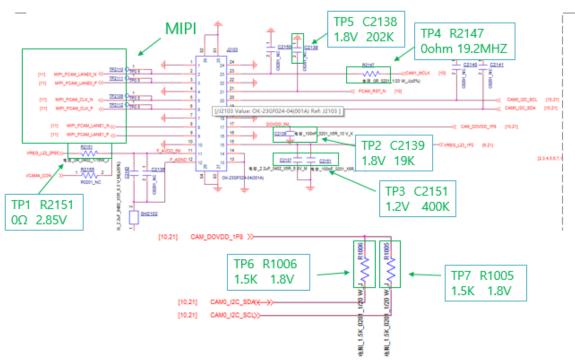


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8-4-15. Front Camera

■ The Camera control signals are generated by PM8953 (U201) and SDM450(U801).

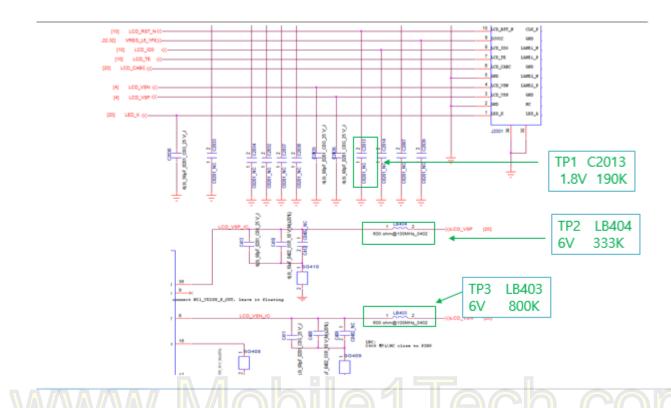


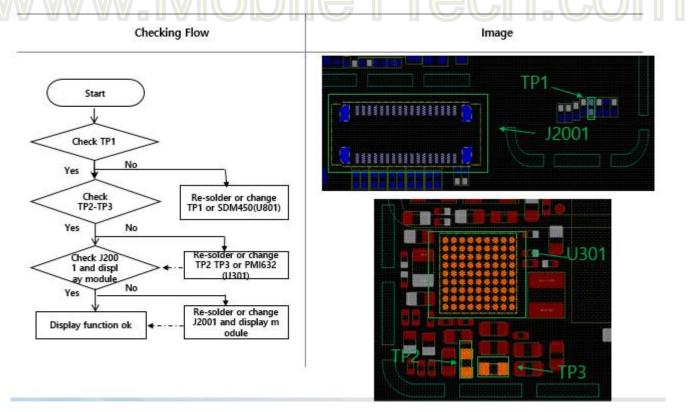


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8-4-16. LCD

■ The LCD control signals are generated by SDM450(U801).

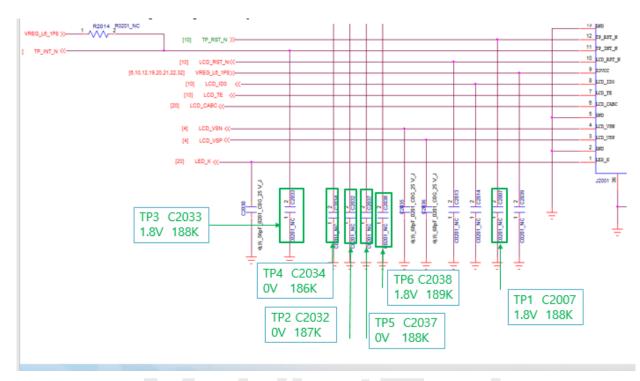


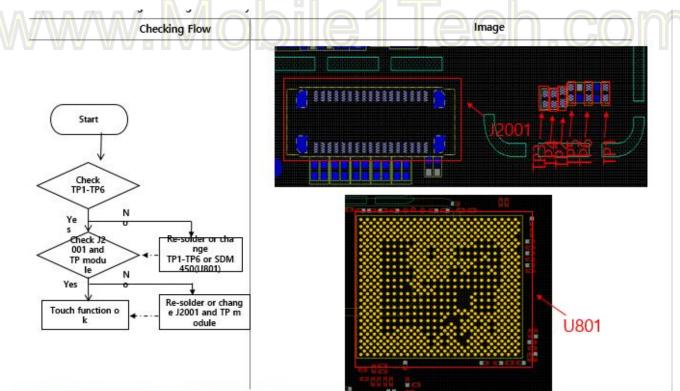


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8-4-17. touch

The Touch control signals are generated by SDM450. It is assembled with LCD







8-5. Service Schematics

■ U801_SDM450_BB chip IC , Digital Baseband Processor(Top)

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A	ND	25		28		88,3		GND		B B	_	7		S S		J.		.00 .0		N_0		FREICK		4		2		1	-	ND		2 m	_	E DQ		ME DOL	_	FREE DQ.	_	GHD .
В	6	HD COM	GND		GND		J J		FRE_CA_ S		GND		6		GND	_	NU CSL		GND		FREICHB	\perp	GND		2	275	GND		EBBLCA. 0	,	IND	_	E_DQ B_2	-	21		OND	_	GND	
C	P DO	94	-	560_DQ_ 26		FRRE_DQ S_S		EMBDQ.		FREE DQ.	_	12 12	_	10 DQ_		R_1		J.		GND		DNC		SSE D	780	FRE DQ		ERRO DQ.	688	LDQ.	- in	DQ_	6	ND	-	and a	_	FREE DQ.	_	GHD
D _	_	HD COM	GND		GND		OND		OND		GND		GND	_	GND		GND	_	OND		OND	_	GND		OND	1	OND		OND	_	IND	_	MD	_	GND .	_	OND		GND	_
E	LDQ_ H	20 20	-	580_DQ_ 29		GND		FREEDQ.		FREE_DQ_ 11	_	BBE_DQ_ B	_	BB_DQ_ B		FREE_DQ SR_1	_	GND		FRIE CAL		_0 _0		RIBE DO	3	SEEDIQ.		ERRE DQ.	File	1	FERE	DQ_ D	68	1_DQ_ 23	60	20 20		FREE DQ. 20	-	GPIQ_M
F	6	10	GND		GND		GND.		GHD.		GND		GND	_	GND	_	GND		GND.		GND		GNO		90		GND		GHD.		IND	a	IND	_	90		GND .		GND	
G SO	MQ.E	SDC+,0 TA,3	^	SDC1,RC LK		GND		GND		GND	l	GND	L	GHD.	L	GND	l	GND		GND		VREF_EBI _CA	- 1	GID.		GND		GND		ND	a	6 0	6	ND	Œ	PIO_ES	-	GPIQJEE		iPIQ_SIF
н	SEN T	ALDA ALDA	SDC1_DA TA_2		RDC1_CL								_		_						- 1		1						_	_	_	_	_	0	SPIQ_RI	a	P10_80	GF.	PIO_98	
Ja	NO	SDC1_I MD	2	SDC1_DA TA_S		SDC1_DA TA_4		GND		GND		VD DPVC 1		/DDPX_1	٧	/DDPX_1		VOOPX_1		VDD PX_1		VD DPOC.1		VOOPX_1	ŀ	VDDPX_1		VDDPX_1		HC	0	ec .	GP1	10_E	G#	PIO_94		GPIQ39		GHD
K		A_DA	SDC2_C		SDC1_DA TA_0																													a	SPIQ_ISI	a	P10_00	Gr.	P80_20	
L	s_a.	SDC 2,0 TA_1	^	SDC2_DA TA_2		SDC1_DA TA_1		VDDPX(3		VDD PK_7		VD 099C1		/DDPX_1	٧	/DDPX:		VOOPU		HV.PLL	1	VD 099C 1		VOOPU		VOOPX		VDDPX_1		NC	R CB	OFP UPR	GP1	10_86 38_01	G	PIO_37		GPIQ;21	6	9PIQ_23
м	1	MS	TDO		ADC2:DA TA,S		VRF_R DB										4			3														a	SPIQ_BS	a	PIQ_III	a	PIO_22	
N a	ND	ток		TRET_N		GND		GND		GND		GHD.		GHD.		GND		GND		VOD_FALL		GHD.		GHD.		GND		GND		ND	VDE	PX,3		NC	G.	PIO_86		PMC_SP MI_CLK		GHD .
Р	GP1	10_26	SRST_N		TO		VD DPX_2						_		- 5	4	¥.			7												_			DNC	PI	MIC SP	R	ESSM_N	
R GP	0,34	GPIQ_S		GP10_38		MDDE_1		VDD_CD C_SDC1		M NOOTHE		M M	-	AD D_FREE	1	VDD_FIII		VOO_IEI				VDO_FRE		VD D_FRI		VOOLER		V00_FR	VO	E ME	Vice i	_00 E		NC	PS	анны	-	CXD_EN	s	NEEP_C UK
т	GPI	0_134	GP10_113		GPIQ.38		VD DPX_3		'		٠		-	_	-1			2	ř		VDD_FRI	$\overline{}$,			\Box	M M		MDD ME	VO	O ME	_	_	T	DNC		CMO		GND	_
U GP	222	GPIQ_6		GPIO_102		M006_0		VDD_CO RE		VDD_CCO RE		VDD_CCC REE	1	000,00 RE	,	VOO ME		VOD_ME		GND		VEO_CO RE		GMD		GND		GND		но	a	0	6	ND		GND	\neg	GND		JX.P
v	6	HD	GP10_40		GP10_131		GND				•						"		GND		VDD_CO	1	GND		GND	П	GHD		GMD		IND	a	IND	7	GID.	\neg	GND	139	181 JSS JXJM	_
W ME	(CSE) (E)_ P	(HD		MIPLOSE JOLK P		VDD_DSI _CSI		GND		GND		(AD)		040		OND		GND		ADD PLL	3	NO NE		VDD_APC		VDD_APC		VDD_APC	VD	_ARC	vno	,APC	VDI),APC		GND	\neg	GND		GID.
Y	LAP.	_CSID! NE1_ M	MPLCSB: _CLK_M		TWEET TWEET							- 1	М						90	\supset			/DD_/PC		VDD_APC		VDD_APC		IDD_APC	VO	D_APC	VDE	E/PC		GND .		OND	LEP	81,58 RX,P	
AA LI	(SE) FR)	(HD		MIPL(CSID _LANEQ_ M		VDD_DSI _CSI		VDD_CO RE		VDD_CCO RE		M M		MD D'ME	`	VDD_CC RE		V00_00 R6		MOD_PLL 2		M M		GHD		GND		GND		но	a	0	6	ND		GND	\neg	GND		USB1_SB _RX_M
AB		LCSEP NE3_ M	-	—	'		•				7				-				900	A			VDD_CCO RE		GND		VDD_R.L 1		_	_	_	VOE	USB ORE	v	00_USB _0086		DNC		GND	_
AC J	CSEP IFIL P	MIPLOS _LANES	L	MIPLOSH JOLK P		VDD_DSI _CSI	,,,,,,,	GND		GND		(MD)		OND		OND	0	ĜND	.<	GND		VCC_CCC REF		GMD		GND		VOD_ME M	VO.	LISS	V00 _0	usa Re	vec je	JES JPE		GND		GND		USB1_SB _SBOXT
AD		_CSH NE1_ P	MPLCSH _CXC_M		J.ANEQ. P				1		N		-	ī	ī		/		~				/00_/PC		VDD_APC		VDD_APC		ID D_APC	vo	O_APC	VOX	_/PC	VI	CO_USB JAST_SP	W	DO_USE HE1_3P		GND	_
AE J	CSH IFI_	(ap	A	MPL(SH LANEO	1	MOD JOSE JAV_PLL	1/	VDD_CO RE		VDD_CCO RE		VOD_ME		M DD ME	5	VDD CO PE		VOID CO		VCD_ME		NO NE		VDD_APC		VDD_APC		VOID_APC	VO	ARC	voo	,APC	VO	(APC		GND	,	DMI CRRI	u	REAL BEST
AF	1	LCSH ME3_ P	$1/\sqrt{2}$		W	$/\Lambda$	COMED		4		VDD_CO RE	П		2	-		1	1		_		П	GND		GND		GMD.		GHD.		ino	a	IND		GND .	u	SECTION TO		OND	
AG UP	CSIN (FI)	MIPLOSI LANGE	n .	MIPI_CSID _CL K,P	18	VDD_DSI LV_PLL		GND	Ш)	V	1	GAD.	1	OHD	1	OND	1	GND		GND		W W		90		GND		GND		100	a	o	0	ND		GND		GND	П	GHD .
АН		CSH NE3_ M	MPL CSID		JANES P		GND		V00_08I _08I		0	1	/		Š	-			١				٠				M M		ND D_ME	ve	0,00		MC .	0	3910_70	a	PIQ_71	a	PIO_70	_
AJ ME	(CSIE) (F1_	940		MIPL(CSID _LANEQ_ M		VDD_DSI _LV_PLL	100	ADD DSI		***		ON DON		CON CON	.57	MEM MEM		VOID_MIO DEM		VDD_MO DEM		OFW.		VED JNO NAO		VDD_MO DEM		VOD_ME M	VO	E ME	Vine:	_00 E	VDE	PK)	a	PIO_67	-	GPIQ:EE		1PIQ_75
AK		LCS80 NG1_ M	GND		'		•			/	1	3	MOD MO	7	-		٠		,		•		•				VDD_MD DEM		_		_		PX_S	0	3PIQ_88	a	PIQ_25	a	PIO_N	_
AL AL	CSID (FZ)	MIPLOS LIANES		•		VDD JDSI JHV_PLL		GND		VDD_CCO RE	~[an	140							GND		(MD		(MD		GND		VOD_MO DEM	6	ND	a	e a	GP.	0_6	G G	PIQ_66	-	GPIQ_43		GND
AM		CS80 NE3_ P	-				GND.		VDD_CD RE		•	0	ND D_MO						,				•		GND	П	GND		_	_	_	vis	DRC6	0	3PIQ_66	a	PIQ_6	a	PIO_65	_
AN J	CSID (F3)	940		MPLOSH _CLK_N				VOD_ME M		GND		VDD_PLL 2								VDD_MO DEM		VDD_MD DEM		ND D.WE		VDD_ME		VOD_MO DEM	6	ND	a	e e	GP.	8,0	G G	PIO_48		GPIQ.84	6	iPIQ_44
AP	6	HD	MPLOSH _CLK_P		TWEST TWEST		GND.		GND.		GND		GND	,	VDD_ME M	[M M		٠				٠				M M					VRS	F_PA	0	1610 ¹ 28	a	P10_80	a	PIO_60	
AR MP	DS01 DS0	MIPLES LANGE		MIPLOSH _LANE2_		GND		GND		GND		GND		GHD.	,	VOO_ME M		GND		GND		WO JUE		ND D_ME		VDD_PLL 2		VDD_CO RE	VO	E CO	a	0	GP.	io_ts	a	PIO_58	-	GPIQ.51		GHD
AT	LADA LA	LESH NEO_ P	GND		JANES P		VD DPX_3		'		MANJER LUM		٠						٠			_	٠									_		0	3PIQ_12	a	PIQ_SS	G	PIO_E	_
AU UA	DSH NF1_ P	LANE!	H -	MIPLOSH _LANESL N		VDDPX_3		VDD_WLA N		WLAN_DD _Q_P		MLAN JOO LLP		OHD		GND		VDD_A2		VDD_A2		V00_A2		VDD_A2		V 0.0, A 2		GND		ND.	VDE	PX,3	GF GF	0,08	Œ	PI0_11		GPIQ_B		aPIQ_f8:
AV	6	HD	_		GND		GND		DNC		MANJER N.Q.																,		GHD.			_	_	-	GPIQ_S		910_E	a	PIO_SI	_
AW MP	E30°	MIPLES		MIPL(SSID _LANES_ P		GND		DNC		GND		GMD	,	(COPX.)	v	/DDPX_3		GND		GND		(MD		940		GND		GND		но	0	ic	RE	SOUT N	a	IPIQ.4		GPIQ_10		90
AY	MEP JA	LEGAD MEG_ P	MPI_DSID _LANE2_		TWEST.			_	'		WLAN_R SET		-		-		•		,		•		,		GND	\Box			_	_	_	→	_	-	GP10_7	a	PIQ_till	a	PIO_H	_
BA JA	DS00 IE1_	MIPL DS: _LANE!		MIPI_CSID _LANE3_ N	,	GND		DNC		GND	\neg	GMD		DNC	Γ	DNC		V00_A1		V00_A1		VDD_AI		DNC		TXDAC1_ VREF		TXDACE_ VREF	VO	CON isi	0	ic.		NC	æ	90_117		GP10_135		9PIQ_15
88	MEP.	LEGAD LECT	GND	N			GP10_0		GP10_76		GP10_106				A0_12		PIQ15		GPIQ_63												_	-	MC MC	\top	DNC	GI	PIQ_tile	æ	90_tie	_
BC MP	DS80 K_P	90						WCSS_X O		GPIQ/JE		3PIQ:104	6	PIQ_106	a	PIQ_118		GP10_109		GND		GND	[GND		GND		GND		HD	a	e a	6	ND		GND		GP10_140	6	1PIQ_141
		ю	GP10_24		GPIQ31		GP10_1		GP1Q_77		GP10_107		GP10_101		180_12i		1910,117		GP10_100		GND		GND		940		(MD		GND GND	_	IND		0 00 P	a	NESS_ESS _GP	_	OND		PIO_98	
BE on		GPIQ_S		GP10_30		GP10_3		GP10_75		GPIQ#3		PRQ_105		IPIQ_SIS		PIQ_119		GP10_112		GND		(MD		GHD.		GND		GND		но	_	e .		ND		GND		GPIQ,61	_	9PIQ_00
BF		0_110	GP10_28		GPIQ26		GPIQ_16		GPIQ_EE		GP10_78	_	GP10_102	_	P10_121	$\overline{}$	PIQ.110		GP10_110		BBRI(I)		GERK(J)		BIRXLL Q.CHO		BBRX(_)		GED COM		MCI_		_		XDACQ_I M		OND.	_	NQ_HS	
_	ND	GPIQ_6		GP10_27		GP10_17		GP10_84		GPIQJE0		PROJES		PIQ_100		PIO_SIG		GPIO_114		GND		(HD		(MD		GND		GND		ACL)		NC1_ P		MCD)		CDACE_ QM		GND	_	GHD.
ВН	_	но	GPIQ_TIR		GPIQ_18		GPIQ_18		GHD		GPIO_III		GND	_	3R0_194	$\overline{}$	(MD		GP10_111		BBRX_L QCHB		G CHE		BIRXLL Q_CH1		BBRX(_) _CH1		DEDACT_J				IND	_	-	T	XD ACO_ QP	_	GND	_
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