Designator	Description	Comment	Footprint	Quantity	Manufacturer	No te	Supplier 1	Supplier 2	Supplier 3	Supplier 1 Part Number	Supplier 2 Part Number	Supplier 3 Part Number	Manufacturer 1 Part Number	SMS-Lab Part Number	Value	Center-X(mm)	Center-Y(mm)	Layer	Assembly Technology	Rotation
		LoRa Modul	LoRA	1												73.51	30.811	Bottom		270
C1	capacitor	22 pF	CAP_0603_1608mm-N	1												90.369	21.535	Top		180
C2	capacitor	22 pF	CAP_0603_1608mm-N	1												83.8	18.682	Top		270
C3	capacitor	100nF	CAP_0603_1608mm-N	1												126.3	10.6	Top		0
C4	capacitor	100nF	CAP_0603_1608mm-N	1												94.226	13.684	Top		0
C5		Capacitor_0805	10uF_0805_Chip2PinSM127P600-8N	1												131.35	56.691	Top		270
C6	capacitor	1 uF	CAP_0805_2012mm-N	1												80.2	59.882	Top		90
C7		Capacitor_0603	C_0603_Chip2PinSM127P600-8N	1												111.35	64.35	Top		180
C8	capacitor	1 uF	CAP_0805_2012mm-N	1												70.9	60.103	Top		270
C9		Capacitor_0603	C_0603_Chip2PinSM127P600-8N	1												118.2	56.7	Top		90
C10		Capacitor_0603	C_0603_Chip2PinSM127P600-8N	1												59	47.585	Top		180
C11		Capacitor_0603	C_0603_Chip2PinSM127P600-8N	1												119.9	56.7	Top		90
C12		Capacitor_0603	C_0603_Chip2PinSM127P600-8N	1												133.35	56.691	Top		90
C13		Capacitor_0603	C_0603_Chip2PinSM127P600-8N	1												121.55	56.7	Top		90
C14	capacitor	100nF	CAP_0603_1608mm-N	1												58.558	54.86	Top		180
C15	capacitor	10 uF	CAP_0805_2012mm-N	1												55.568	61.238	Top		270
C16	capacitor	100nF	CAP_0603_1608mm-N	1												51.653	58.8	Top		270
C17	capacitor	22 pF	CAP_0603_1608mm-N	1												82.362	36.166	Top		90
C18	capacitor	0.1 uF	CAP_0603_1608mm-N	1												81.583	31.445	Top		270
C19	capacitor	0.1 uF	CAP_0603_1608mm-N	1												70.42	46.456	Top		180
C20	capacitor	22 pF	CAP_0603_1608mm-N	1												78.658	31.453	Top		90
C21	capacitor	0.1 uF	CAP_0603_1608mm-N	1												70	25.306	Top		0
C22	capacitor	0.1 uF	CAP_0603_1608mm-N	1												51.653	28.756	Top		90
C23	capacitor	0.1 uF	CAP_0603_1608mm-N	1												59	45.85	Top		180
C24	capacitor	0.1 uF	CAP_0603_1608mm-N	1												79.63	39.112	Top		0
C25	capacitor	0.1 uF	CAP_0603_1608mm-N	1												78	40.624	Top		180
C26	capacitor	0.1 uF	CAP_0603_1608mm-N	1												78	42.306	Top		0
C27	capacitor	10 uF	CAP_0805_2012mm-N	1												66.908	49.15	Top		180
DR1		STM32F103C8T6	LQFP-48	1											STM32F103C8T6	103.582	16.044	Top		0
D1	LED; SMD; 0603; grün; 35mcd; 1.6x0.8x0.55mm; 130A~; 2A:2.V; 20mA	Grün	*0603	1												120.963	2.6	Top		90
D2	LED; SMD; 0603; orange; 45-90mcd; 1.6x0.8x0.55mm; 130A~; 2A:2.4V; 20mA	Orange	*0603	1												118.882	2.6	Top		90
D3	LED; SMD; 0603; grün; 35mcd; 1.6x0.8x0.55mm; 130A~; 2A:2.V; 20mA	Grün	*0603	1												80.2	67.704	Top		270
D4		BAT54T1G	BAT54T1G_SODFL3717X135-2N	1												105.985	61.975	Top		180
D5	LED; SMD; 0603; grün; 35mcd; 1.6x0.8x0.55mm; 130A~; 2A:2.V; 20mA	Grün	*0603	1												51.051	66.882	Top		270
D6	LED; SMD; 0603; orange; 45-90mcd; 1.6x0.8x0.55mm; 130A~; 2A:2.4V; 20mA	Orange	*0603	1												53.178	66.882	Top		270
D7		1N4148	1N4148_SODFL1277P600-8N	1												127.35	56.691	Top		90
D8		1N4148	1N4148_SODFL1277P600-8N	1												125.35	56.691	Top		270
D9	LED; SMD; 0603; grün; 35mcd; 1.6x0.8x0.55mm; 130A~; 2A:2.V; 20mA	Grün	*0603	1												24.07	14.9	Top		270
F1		Fuse	FUSE-3586KTR	1												19.02	8.95	Top		0
IC1	USB-to-UART 1-CH 256byte FIFO 5V 28-Pin SSOP Tube	FT232RL-TUBE	*SSOP28-LD	1												50.678	50.193	Top		0
J1	Mini AB, USB 2.0, 1 A, Right Angle, Surface Mount SMT _ USB Receptacle	U2-MABH-4-SMT	*CUI_U2-MABH-4-SMT_U2-MABH-4-SMT(Primary)	1												129.3	5.16	Top		0
J2	Mini AB, USB 2.0, 1 A, Right Angle, Surface Mount SMT _ USB Receptacle	U2-MABH-4-SMT	*CUI_U2-MABH-4-SMT_U2-MABH-4-SMT(Primary)	1												63.48	64.87	Top		180
J3		Joystick	Joystick	1												21.99	39.004	Top		0
J4		Joystick	Joystick	1												128.01	39	Top		180
L1		Inductor_0805	0805_INDC2012X12N	1												103.35	64.975	Top		270
L2	Inductor	Inductor	Murata Inductor 1000 nH	1												76.923	46.85	Top		90
P1	Header, 4-Pin	Header 4	HDR1X4	1												114.421	21.533	Top		180
P2	Header, 5-Pin	SWIM	HDR1X5	1												102.042	32.254	Top		0
P3	Header, 5-Pin	SWD	HDR1X5	1												122.582	15.895	Top		90
P6	Single Pad or Testpoint	ON-OFF	MotConnector	1												14.8	2.9	Top		0
P7	Connector; IDC, Male Header, Thru-Hole; 20 Position; Vertical; Pitch 2.54 mm; B	IDC-20	IDC-20	1												24.7	62.96	Top		0
P8	Single Pad or Testpoint	Batterie	MotConnector	1												26.07	2.9	Top		0
R1	Resistor	1000	RES_0603_1608mm-N	1												120.963	6.6	Top		90
R2	Resistor	1000	RES_0603_1608mm-N	1												118.882	6.6	Top		270
R3	Resistor	100K	RES_0603_1608mm-N	1												96.9	10.4	Top		270
R4	Resistor	100K	RES_0603_1608mm-N	1												98.576	10.374	Top		90
R5	Resistor	390	RES_0603_1608mm-N	1												90.369	15.657	Top		0
R6	Resistor	10K	RES_0603_1608mm-N	1												102.218	34.59	Top		0
R7	Resistor	10K	RES_0603_1608mm-N	1												104.332	9.454	Top		90
R8	Resistor	10K	RES_0603_1608mm-N	1												94.226	15.397	Top		180
R9	Resistor	220	RES_0603_1608mm-N	1												101.888	24.814	Top		270
R10	Resistor	220	RES_0603_1608mm-N	1												104.83	24.814	Top		270
R11	Resistor	220	RES_0603_1608mm-N	1												99.463	28.544	Top		270
R12	Resistor	100	RES_0603_1608mm-N	1												114.453	13.355	Top		180
R13	Resistor	22	RES_0603_1608mm-N	1												101.888	28.564	Top		270
R14	Resistor	22	RES_0603_1608mm-N	1												104.776	28.56	Top		270
R15	Resistor	22	RES_0603_1608mm-N	1												118.103	13.355	Top		180
R16	Resistor	22	RES_0603_1608mm-N	1												118.103	15.895	Top		180
R17	Resistor	22	RES_0603_1608mm-N	1												118.103	18.435	Top		180
R18	Resistor	8K	RES_0603_1608mm-N	1												80.2	63.742	Top		90
R19		Resistor_0603	R_0603_Chip2PinSM127P600-8N	1												111.35	62.735	Top		0
R20		Resistor_0603	R_0603_Chip2PinSM127P600-8N	1												111.35	65.925	Top		180
R21	Resistor	1000	RES_0603_1608mm-N	1												51.051	62.882	Top		90
R22	Resistor	1000	RES_0603_1608mm-N	1												53.178	62.882	Top		90
R23	Resistor	8K	RES_0603_1608mm-N	1												46.453	43.851	Top		270
R24	Resistor	8K	RES_0603_1608mm-N	1												48.079	43.851	Top		270
R25		Resistor_0603	R_0603_Chip2PinSM127P600-8N	1												129.35	56.691	Top		90
R26		Resistor_0603	R_0603_Chip2PinSM127P600-8N	1												123.2	56.7	Top		90
R27	Resistor	Res	RES_0603_1608mm-N	1												76.11	31.598	Top		90
R28	Resistor	390	RES_0603_1608mm-N	1												76.86	36.206	Top		270
R29	Resistor	10K	RES_0603_1608mm-N	1												20.8	14.9	Top		90
R30	Resistor	10K	RES_0603_1608mm-N	1												28.51	55.925	Top		270
R31	Resistor	10K	RES_0603_1608mm-N	1												25.97	55.925	Top		270
R32	Resistor	10K	RES_0603_1608mm-N	1												21	55.925	Top		270
R33	Resistor	10K	RES_0603_1608mm-N	1												56.9	35.208	Top		90
R34	Resistor	10K	RES_0603_1608mm-N	1												18.4	55.925	Top		270
R35	Resistor	10K	RES_0603_1608mm-N	1												33.59	55.925	Top		90
R36	Resistor	10K	RES_0603_1608mm-N	1												15.9	55.925	Top		270
R37	Resistor	10K	RES_0603_1608mm-N	1												36.13	55.925	Top		90
S1	Switch	SW PB	B3L-1002P	1												78.86	26.218	Top		180
U1		OLED_Driver	FANS3315_SOT23127P600-8N	1												107.35	64.975	Top		180
U2	3.3V Voltage Regulator	Part Number: AP2120N-3.3TRG1	SOT-23-M	1											Value	74.6	60.1	Top		270
U3	STM32 series 32-bit 256 kB Flash 64 kB RAM ARM Based Microcontroller -LQFP100	STM32F107VCT6	*QFP50P1600X1600X160-100N	1												64.71	35.456	Top		180
U4	Ldo Vreg Pos 3, 3v 1a Sot223	AZ1117EH-3.3TRG1	*SOT230P700X180-4N	1												15.11	16.49	Top		0
X1		Molex_FlatFlex-to-Board	MOLEX_FTB_30	1												126.75	62.47	Top		180
Y1	Industrial Ceramic Resonator	KTAL3	TSX-3225 2*2.5	1												90.619	18.657	Top		0
Y2	Industrial Ceramic Resonator	KTAL3	TSX-3225 2*2.5	1												79.485	35.956	Top		270

Assembly Technology	Comment	Description	Designator	Footprint	LibRef	Quantity	SMS-Lab Part Number	Supplier 1 Part Number	Supplier 2 Part Number	Supplier 3 Part Number	Manufacturer	Manufacturer Part Number	Supplier 1	Supplier 2	Supplier 3
	LoRa Modul			LoRA	LoRa Modul	1									
	22 pF	capacitor	C1	CAP_0603_1608m-N	Cap	1									
	22 pF	capacitor	C2	CAP_0603_1608m-N	Cap	1									
	100nF	capacitor	C3	CAP_0603_1608m-N	Cap	1									
	100nF	capacitor	C4	CAP_0603_1608m-N	Cap	1									
	Capacitor_0805		C5	10uF_0805_Chip2Pin5M127P600-BN	Capacitor_0805	1									
	1 uF	capacitor	C6	CAP_0805_2012m-N	Cap	1									
	Capacitor_0603		C7	C_0603_Chip2Pin5M127P600-BN	Capacitor_0603	1									
	1 uF	capacitor	C8	CAP_0805_2012m-N	Cap	1									
	Capacitor_0603		C9	C_0603_Chip2Pin5M127P600-BN	Capacitor_0603	1									
	Capacitor_0603		C10	C_0603_Chip2Pin5M127P600-BN	Capacitor_0603	1									
	Capacitor_0603		C11	C_0603_Chip2Pin5M127P600-BN	Capacitor_0603	1									
	Capacitor_0603		C12	C_0603_Chip2Pin5M127P600-BN	Capacitor_0603	1									
	Capacitor_0603		C13	C_0603_Chip2Pin5M127P600-BN	Capacitor_0603	1									
	100nF	capacitor	C14	CAP_0603_1608m-L	Cap	1									
	10 uF	capacitor	C15	CAP_0805_2012m-N	Cap	1									
	100nF	capacitor	C16	CAP_0603_1608m-L	Cap	1									
	22 pF	capacitor	C17	CAP_0603_1608m-N	Cap	1									
	0.1 uF	capacitor	C18	CAP_0603_1608m-N	Cap	1									
	0.1 uF	capacitor	C19	CAP_0603_1608m-N	Cap	1									
	22 pF	capacitor	C20	CAP_0603_1608m-N	Cap	1									
	0.1 uF	capacitor	C21	CAP_0603_1608m-N	Cap	1									
	0.1 uF	capacitor	C22	CAP_0603_1608m-N	Cap	1									
	0.1 uF	capacitor	C23	CAP_0603_1608m-N	Cap	1									
	0.1 uF	capacitor	C24	CAP_0603_1608m-N	Cap	1									
	0.1 uF	capacitor	C25	CAP_0603_1608m-N	Cap	1									
	0.1 uF	capacitor	C26	CAP_0603_1608m-N	Cap	1									
	10 uF	capacitor	C27	CAP_0805_2012m-N	Cap	1									
	STM32F103C8T6		IC1	LQFP-48	STM32F103C8T6	1									
	Grün	LED; SMD; 0603; grün; 35mcd; 1.6x0.8x0.55mm; 130A°; 2A-2.V; 20mA	D1	*0603	LTST-C191KGKT	1									
	Orange	LED; SMD; 0603; orange; 45-90mcd; 1.6x0.8x0.55mm; 130A°; 2A-2.4V; 20mA	D2	*0603	LTST-C191KFKT	1									
	Grün	LED; SMD; 0603; grün; 35mcd; 1.6x0.8x0.55mm; 130A°; 2A-2.V; 20mA	D3	*0603	LTST-C191KGKT	1									
	BAT54T1G		D4	BAT54T1G_SOD FL1371X13-2N	BAT54T1G	1									
	Grün	LED; SMD; 0603; grün; 35mcd; 1.6x0.8x0.55mm; 130A°; 2A-2.V; 20mA	D5	*0603	LTST-C191KGKT	1									
	Orange	LED; SMD; 0603; orange; 45-90mcd; 1.6x0.8x0.55mm; 130A°; 2A-2.4V; 20mA	D6	*0603	LTST-C191KFKT	1									
	1N4148		D7	1N4148_SOD FL127P600-BN	1N4148	1									
	1N4148		D8	1N4148_SOD FL127P600-BN	1N4148	1									
	Grün	LED; SMD; 0603; grün; 35mcd; 1.6x0.8x0.55mm; 130A°; 2A-2.V; 20mA	D9	*0603	LTST-C191KGKT	1									
	Fuse		F1	FUSE-3586KTR	Fuse	1									
	FT232RL-TUBE	USB-to-UART 1-CH 2Mbyte FIFO 5V 28-Pin SSOP Tube	IC1	*SSOP28-LD	FT232RL-TUBE	1									
	U2-MABH-4-SMT	Mini AB, USB 2.0, 1 A, Right Angle, Surface Mount _SMT_, USB Receptacle	J1	*CUI_U2-MABH-4-SMT_U2-MABH-4-SMT(Primary)	U2-MABH-4-SMT	1									
	U2-MABH-4-SMT	Mini AB, USB 2.0, 1 A, Right Angle, Surface Mount _SMT_, USB Receptacle	J2	*CUI_U2-MABH-4-SMT_U2-MABH-4-SMT(Primary)	U2-MABH-4-SMT	1									
	Joystick		J3	Joystick	Joystick	1									
	Joystick		J4	Joystick	Joystick	1									
	Inductor_0805		L1	0805_INDC2012X12N	Inductor_0805	1									
	Inductor	Inductor	L2	Murata Inductor 2500 sch	Inductor	1									
	Header 4	Header, 4-Pin	P1	HDR1X4	Header 4	1									
	SWIM	Header, 5-Pin	P2	HDR1X5	Header 5	1									
	SWD	Header, 5-Pin	P3	HDR1X5	Header 5	1									
	ON-OFF	Single Pad or Testpoint	P6	MotConnector	Pad, double	1									
	IDC-20	Connector; IDC; Male; Header, Thru-Hole; 20 Position; Vertical; Pitch 2.54 mm; B	P7	IDC-20	IDC-20	1									
	Batterie	Single Pad or Testpoint	P8	MotConnector	Pad, double	1									
	1000	Resistor	R1	RES_0603_1608m-N	Res	1									
	1000	Resistor	R2	RES_0603_1608m-N	Res	1									
	100K	Resistor	R3	RES_0603_1608m-N	Res	1									
	100K	Resistor	R4	RES_0603_1608m-N	Res	1									
	390	Resistor	R5	RES_0603_1608m-N	Res	1									
	10K	Resistor	R6	RES_0603_1608m-N	Res	1									
	10K	Resistor	R7	RES_0603_1608m-N	Res	1									
	10K	Resistor	R8	RES_0603_1608m-N	Res	1									
	220	Resistor	R9	RES_0603_1608m-N	Res	1									
	220	Resistor	R10	RES_0603_1608m-N	Res	1									
	220	Resistor	R11	RES_0603_1608m-N	Res	1									
	100	Resistor	R12	RES_0603_1608m-N	Res	1									
	22	Resistor	R13	RES_0603_1608m-N	Res	1									
	22	Resistor	R14	RES_0603_1608m-N	Res	1									
	22	Resistor	R15	RES_0603_1608m-N	Res	1									
	22	Resistor	R16	RES_0603_1608m-N	Res	1									
	22	Resistor	R17	RES_0603_1608m-N	Res	1									
	1K	Resistor	R18	RES_0603_1608m-N	Res	1									
	Resistor_0603		R19	R_0603_Chip2Pin5M127P600-BN	Resistor_0603	1									
	Resistor_0603		R20	R_0603_Chip2Pin5M127P600-BN	Resistor_0603	1									
	1000	Resistor	R21	RES_0603_1608m-N	Res	1									
	1000	Resistor	R22	RES_0603_1608m-N	Res	1									
	1K	Resistor	R23	RES_0603_1608m-N	Res	1									
	1K	Resistor	R24	RES_0603_1608m-N	Res	1									
	Resistor_0603		R25	R_0603_Chip2Pin5M127P600-BN	Resistor_0603	1									
	Resistor_0603		R26	R_0603_Chip2Pin5M127P600-BN	Resistor_0603	1									
	Res	Resistor	R27	RES_0603_1608m-N	Res	1									
	390	Resistor	R28	RES_0603_1608m-N	Res	1									
	10K	Resistor	R29	RES_0603_1608m-N	Res	1									
	10K	Resistor	R30	RES_0603_1608m-N	Res	1									
	10K	Resistor	R31	RES_0603_1608m-N	Res	1									
	10K	Resistor	R32	RES_0603_1608m-N	Res	1									
	10K	Resistor	R33	RES_0603_1608m-N	Res	1									
	10K	Resistor	R34	RES_0603_1608m-N	Res	1									
	10K	Resistor	R35	RES_0603_1608m-N	Res	1									
	10K	Resistor	R36	RES_0603_1608m-N	Res	1									
	10K	Resistor	R37	RES_0603_1608m-N	Res	1									
	SW PB	Switch	S1	B3U-1000P	SW PB	1									
	OLED_Driver		U1	FAN53310_SOT23X127P600-BN	OLED_Driver	1									
	Part Number: AP2120N-3.3TRG1	3.3V Voltage Regulator	U2	SOT-23-M	AP2120N-3.3TRG1	1									
	STM32F107VCT6	STM32 Series 32-bit 256 kB Flash 64 kB RAM ARM Based Microcontroller - LQFP-100	U3	*QFP50P1600X1600X160-100N	STM32F107VCT6	1									
	AZ1117EH-3.3TRG1	Ldo Vreg Pos 3, 3v 1a Sot223	U4	*SOT230P700X180-4N	AZ1117EH-3.3TRG1	1									
	Molex_FlatFlex-to-Board		X1	MOLEX_FFB_30	Molex_FlatFlex-to-Board	1									
	XTAL3	Industrial Ceramic Resonator	Y1	TSX-3225 2*2.5	XTAL3	1									
	XTAL3	Industrial Ceramic Resonator	Y2	TSX-3225 2*2.5	XTAL3	1									