SEMTECH LoRa

SX1276MB1MAS - BOM

BOM # V1a
SCH # e315V01a
PCB # e315V01a

09/11/2015 | EMr | Version e315V01a - 868MHz on RF_HF and 433MHz on RF_LF

RefDes	MPN	Geom	Value	Qty	Description	Manufacturer
			IC			
U1	**SX1276IMLTRT**	TQFN-28 6x6mm	SX1276	1	137MHz to 1020MHz Low Power Long Range Transceiver	**Semtech**
U2	PE4259	SC-70	-	1	PE4259 - 10MHz to 3GHz SPDT RF Switch	Peregrine Semi
U3	NC7SZ04P5X	SC-70-5	-	1	NC7SZ04 TinyLogic UHS Inverter	Fairchild Semi
U4	CRCW06030000Z0EA	0603	0R	1	Thick Film Resistor ±5%, 1/10W (No SAW filter populated)	Vishay/Dale
U5	PE4259	SC-70	-	1	PE4259 - 10MHz to 3GHz SPDT RF Switch	Peregrine Semi
U6	CRCW06030000Z0EA	0603	0R	1	Thick Film Resistor ±5%, 1/10W (No SAW filter populated)	Vishay/Dale
			Resistors			
R1	CRCW04020000Z0ED	0402	0R	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
R2	CRCW04020000Z0ED	0402	0R	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
R3	CRCW06030000Z0EA	0603	0R	1	Thick Film Resistor ±5%, 1/10W	Vishay/Dale
R4	EXB-N8V101JX	EXB28V	100R	1	SMD Resistor Array Resistors (4x), ±5%, 31mW	Panasonic - ECG
R5	EXB-N8V101JX	EXB28V	100R	1	SMD Resistor Array Resistors (4x), ±5%, 31mW	Panasonic - ECG
R6	CRCW06030000Z0EA	0603	0R	1	Thick Film Resistor ±5%, 1/10W	Vishay/Dale
R7	CRCW04020000Z0ED	0402	0R	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
R11	CRCW04021K00JNED	0402	1k	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
R13	EXB-N8V101JX	EXB28V	100R	1	SMD Resistor Array Resistors (4x), ±5%, 31mW	Panasonic - ECG
R14	CRCW0402100RJNED	0402	100R	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
R16	CRCW0402100RJNED	0402	100R	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
			Capacitors			
C1	GRM1555C1H150JA01D	0402	15pF	1	Multilayer ceramic capacitors C0G ±5%, 50V for Rakon Crystal (18pF for NDK)	Murata
C2	GRM1555C1H150JA01D	0402	15pF	1	Multilayer ceramic capacitors C0G ±5%, 50V for Rakon Crystal (18pF for NDK)	Murata
C3	GRM155R71C104KA88D	0402	100nF	1	Multilayer ceramic capacitors X7R ±10%, 16V	Murata
C4	GRM155R71C104KA88D	0402	100nF	1	Multilayer ceramic capacitors X7R ±10%, 16V	Murata
C5	GRM155R71C104KA88D	0402	100nF	1	Multilayer ceramic capacitors X7R ±10%, 16V	Murata
C6	GRM155R71C104KA88D	0402	100nF	1	Multilayer ceramic capacitors X7R ±10%, 16V	Murata
C7	GRM1555C1H470JZ01D	0402	47pF	1	Multilayer ceramic capacitors C0G ±5%, 50V	Murata
C8	GRM1555C1H470JZ01D	0402	47pF	1	Multilayer ceramic capacitors C0G ±5%, 50V	Murata
C9	GRM1555C1H330JZ01D	0402	33pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C10	GRM1555C1H1R5CZ01D	0402	1.5pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C11	GRM1555C1H4R7CZ01D	0402	4.7pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C12	GRM1555C1H1R2CZ01D	0402	1.2pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C13	GRM1555C1H1R8CZ01D	0402	1.8pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C17	GRM1555C1H3R3CZ01D	0402	3.3pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C18	GRM1555C1H470JZ01D	0402	47pF	1	Multilayer ceramic capacitors C0G ±5%, 50V	Murata
C19	GRM1555C1H470JZ01D	0402	47pF	1	Multilayer ceramic capacitors C0G ±5%, 50V	Murata
C20	GRM1555C1H470JZ01D	0402	47pF	1	Multilayer ceramic capacitors C0G ±5%, 50V	Murata
C21	GRM155R71C104KA88D	0402	100nF	1	Multilayer ceramic capacitors X7R ±10%, 16V	Murata
C22	GRM155R71H102JA01D	0402	1nF	1	Multilayer ceramic capacitors X7R ±5%, 50V	Murata
C23	GRM21BR60J226ME39L	0805	22uF	1	Multilayer ceramic capacitors X5R ±20%, 6.3V	Murata
C24	GRM188R61A105KA61D	0603	1uF	1	Multilayer ceramic capacitors X5R ±10%, 10V	Murata
C25	GRM155R71H102JA01D	0402	1nF	1	Multilayer ceramic capacitors X7R ±5%, 50V	Murata
C26	GRM1555C1H470JZ01D	0402	47pF	1	Multilayer ceramic capacitors C0G ±5%, 50V	Murata
C27	GRM155R71C104KA88D	0402	100nF	1	Multilayer ceramic capacitors X7R ±10%, 16V	Murata
C28	LQG15HS15NJ02D	0402	15nH	1	Multilayer Inductor ±5%	Murata
C29	GRM1555C1H4R7CA01D	0402	4.7pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C30	GRM1555C1H6R8CA01D	0402	6.8pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C31	GRM1555C1H2R7CZ01D	0402	2.7pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C32	GRM1555C1H6R8CA01D	0402	6.8pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
C35	GRM155R71E103KA01D	0402	10nF	1	Multilayer ceramic capacitors X7R ±10%, 25V	Murata
C36	GRM1555C1H470JZ01D	0402	47pF	1	Multilayer ceramic capacitors C0G ±5%, 50V	Murata
C38	GRM1555C1H470JZ01D	0402	47pF	1	Multilayer ceramic capacitors C0G ±5%, 50V	Murata
C39	GRM1555C1H470JZ01D	0402	47pF	1	Multilayer ceramic capacitors C0G ±5%, 50V	Murata
C43	GRM155R71H102JA01D	0402	1nF	1	Multilayer ceramic capacitors X7R ±5%, 50V	Murata
C44	GRM188R61A105KA61D	0603	1uF	1	Multilayer ceramic capacitors X5R ±10%, 10V	Murata
C45	GRM155R71H102JA01D	0402	1nF	1	Multilayer ceramic capacitors X7R ±5%, 50V	Murata
C50	GRM188R61A105KA61D	0603	1uF	1	Multilayer ceramic capacitors X5R ±10%, 10V	Murata
			Inductors & Ferrites			
L1	LQG15HS82NJ02D	0402	82nH	1	Multilayer Inductor ±5%	Murata
L2	LQW15AN33NJ00D	0402	33nH	1	Wirewound Inductor ±5%	Murata
L4	LQG15HS10NJ02D	0402	10nH	1	Multilayer Inductor ±5%	Murata
L5	LQG15HS6N2S02D	0402	6.2nH	1	Multilayer Inductor ±0.3nH	Murata
L7	LQG15HS10NJ02D	0402	10nH	1	Multilayer Inductor ±5%	Murata
L8	CRCW04020000Z0ED	0402	0R	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
L9	LQG15HS12NJ02D	0402	12nH	1	Multilayer Inductor ±5%	Murata
L10	CRCW04020000Z0ED	0402	0R	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
L11	CRCW04020000Z0ED	0402	0R	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
L12	GRM1555C1H4R7CZ01D	0402	4.7pF	1	Multilayer ceramic capacitors C0G ±0.25pF, 50V	Murata
L13	LQG15HS18NJ02D	0402	18nH	1	Multilayer Inductor ±5%	Murata
L14	CRCW04020000Z0ED	0402	0R	1	Thick Film Resistor ±5%, 1/16W	Vishay/Dale
			Crystal (or other referenced vendors)			
Q1	FTR5092-A2	QESM07 3.2x2.5mm	32.000MHz	1	Crystal unit Rakon; Tol. ±10ppm, Cload=10pF, G-Senstivity=2ppb/G max (populated)	Rakon
or	FTR5123-A0	QESM09 2.0x1.6mm	32.000MHz	-	Crystal unit Rakon; Tol. ±10ppm, Cload=10pF, G-Senstivity=2ppb/G max (recommended for new design)	Rakon
Q1	EXS00A-CS00131	NX2520SA 2.5x2.0mm	32.000MHz	-	Crystal unit NDK; Tol. ±10ppm, Cload=10pF, G-Senstivity=2ppb/G max	NDK
or	EXS00A-CS06465	NX2016SA 2.0x1.6mm	32.000MHz	-	Crystal unit NDK; Tol. ±10ppm, Cload=10pF, G-Senstivity=2ppb/G max (recommended for new design)	NDK
Q1	S0197-X-002-3	QESM07 3.2x2.5mm	32.000MHz	-	Crystal unit Taitien; Tol. ±10ppm, Cload=10pF, G-Senstivity=2ppb/G max	Taitien
			Connectors and others (or P/N equivalent)			
ANT_HF	142-0711-821	SMA End Launch	50 Ohms	1	SMA End launch jack receptacle for PCB mount	Emerson Network Power
ANT_LF	142-0711-821	SMA End Launch	50 Ohms	1	SMA End launch jack receptacle for PCB mount	Emerson Network Power
J1	68000-108HLF	Header 1x8	8 pins	1	8 Pins - Through hole single row male connector, **Bottom side**	FCI
J2	68000-110HLF	Header 1x10	10 pins	1	10 Pins - Through hole single row male connector, **Bottom side**	FCI
J3	68000-108HLF	Header 1x8	8 pins	1	8 Pins - Through hole single row male connector, **Bottom side**	FCI
J4	68000-106HLF	Header 1x6	6 pins	1	6 Pins - Through hole single row male connector, **Bottom side**	FCI
			Additional or optional components			
-	BMIS-205-F	Shield	-	0	Standard Surface Mount Shield in two parts with BMIS-205-C cover	Laird Technologies

Remark: components not listed in the BOM are not populated on the module.