
MCC125 Wireless Link Project, 7.5 hp, Sp2

2019/2020

Inventory

Lab equipment

Item	Description	Quantity
USRP related		
USRP N210 kit	USRP N210 kit w/ power supply and cables	8
LFRX	DC to 30 MHz receiver daughterboard	4
LFTX	DC to 30 MHz transmitter daughterboard	4
SBX	400 MHz to 4.4 GHz transceiver daughterboard	1
RFX2400	2.3 GHz to 2.9 GHz transceiver daughterboard	1
VERT900	900 MHz antenna	4
VERT2450	2.4-2.5 GHz, 4.9-5.9 GHz antenna	6
Active components		
ZX60-272LN-S+	Broadband amplifier, 2300 to 2700 MHz	3
ZX60-V82-S+	Broadband amplifier, 0.02 to 6.0 GHz	4
EKIT01-HMC833LP	PLL/VCO evaluation kit	7
Passive components		
ZX05-C60LH-S+	Mixer, 1600 to 6000 MHz	4
ZX05-C60+	Mixer, 1600 to 6000 MHz	7
ZX10Q-2-27-S+	Power splitter/combiner 90-deg, 1700 to 2700 MHz	4
ZN2PD-9G-S+	Power divider, 1700 to 9000 MHz	4
SBLP-39+	Low pass filter, DC to 23 MHz	3
VBF-2435+	Bandpass filter, 2340 to 2530 MHz	4
VBFZ-5500+	Bandpass filter, 4900 to 6200 MHz	2
VBFZ-6260-S+	Bandpass filter, 5600 to 7000 MHz	2
VAT-3+	3 dB attenuator	4
VAT-6+	6 dB attenuator	4
VAT-10+	10 dB attenuator	3
VAT-20+	20 dB attenuator	4
VAT-30+	30 dB attenuator	4
ANNE-50+	50 Ω termination	5

Note

The amplifiers, mixers, splitters etc. are supposed to be used for early prototyping. Hence a complete radio can be built within a short time. These components must be shared among all teams.

Components

Item	Description	Quantity
General amplifiers		
HMC789ST89E	MMIC amplifier, 0.7 to 2.8 GHz	9
HMC480ST89E	MMIC amplifier, 0 to 5GHz	15
Low noise amplifiers		
HMC374E	Low noise amplifier, 0.3 to 3.0 GHz	10
ADL5545	Low noise amplifier/General amp. 0.03 to 6.0 GHz	1
Power amplifiers		
MAX2615	Power amplifier, 40 MHz to 4 GHz	12
ADL5542	Power amplifier, 20 MHz to 6 GHz	7
HMC415LP3E	Power amplifier, 4.9 to 5.9 GHz	6
HMC406MS8GE	Power amplifier, 5 to 6 GHz	6
HMC407MS8GE	Power amplifier, 5 to 7 GHz	6
HMC408LP3E	1 W Power amplifier, 5.1 to 5.9 GHz	4
Misc amplifiers		
HMC636ST89E	High IP3 amplifier, 0.2 to 4.0 GHz	12
Mixers		
HMC213BMS8E	1.5 GHz to 4.5 GHz, GaAs, Double Balanced Mixer	14
LTC5510	Wideband high linearity active mixer, 0.001 to 6.0 GHz	10
HMC218BMS8GE	Double balanced mixer, 3.5 to 8.0 GHz	8
Modulators and demod's		
HMC334LP4E	Wideband downconverter, 0.6 to 2.7 GHz	10
ADL5380	Wideband quadrature demodulator, 0.4 to 6.0 GHz	8
TRF37T05	Wideband quadrature modulator, 0.3 to 4.0 GHz	9
HMC1097LP4E	Wideband quadrature modulator, 0.1 to 6.0 GHz	9
Passive components		
TC1-1TX+	RF Transformer 0.4 MHz to 500 MHz	12
TCM1-63AX+	RF Transformer 10 MHz to 6000 MHz	13
Resistors	Multicomp Surface Mount Resistor Kit, 0805	1
Capacitors	Johanson Technology Ceramic CAP Kit 4.7PF-220PF S805DS	1
Inductors	Johanson Technology Inductor Kit 2.7nF-10000nL805W	1
Capacitors	1pF-47uF	1
Others		
Edge Mount SMA		30
Solder Past		1
DC headers	CONN HEADER VERT 2POS 2.54MM	50

Note

Additional components may be purchased from Farnell or Digi-key. Check with course tutors regarding this.