

Component ordering form

Student Names	Boyao Yang, Weizhou Wen, Yidi Song, Yimian Liu	Contact Email <i>(In case of problems with order students will be contacted at this email)</i>	y.liu262@liv.ac.uk
Project Title	Frequency Downconverter		

This form should be typed, not handwritten.

This form is to be completed by the students in co-operation with their supervisor. On completion the form **must** be signed by the supervisor in the space provided on the rear on this form, and then returned to the Laboratory Technician (3rd floor lab). Forms must be submitted even for those students with nil requirements.

Student Designs - Any student wishing to have any small parts manufactured must submit a design with materials and dimensions etc on a separate sheet.

Note - Considerable delays may be experienced regarding the manufacture of small parts for student projects.

Location - Please state any special requirement(s) that will affect the location of the project within the laboratory area.

LABORATORY EQUIPMENT (such as computer, oscilloscope, power supply, signal generator, multimeter, etc.)¹

Item/Function	Make/Model	Specification
Oscilloscope	TBS 1052 B-EDU	https://www.tek.com/sites/default/files/media/media/resources/TBS1000B-EDU-Series-Oscilloscope-Datasheet-2_0.pdf
DC Power Supply	TENMA 72-8695A	http://datasheet.octopart.com/72-8695A-Tenma-datasheet-33009730.pdf
Signal Generator	Digimess FG303	http://www.farnell.com/datasheets/1642565.pdf
Digital Multimeter	TENMA 72-1016	https://rcl.lt/files/68fcec9c9460b4b61192
Spectrum Analyzer		

FURTHER EQUIPMENT (other than standard laboratory equipment, to be supplied by supervisor)

Equipment / Components	Available from

¹ If a PC is required, please indicate performance level, operating system requirements and any software that needs to be installed. Also indicate if network access is required.

IMPORTANT: Please read this information carefully before completing the table below.

Students should not purchase any components by themselves (the Department will **not** refund any purchases made by students under any circumstances). No order will be processed without the supervisor's signature. Please allow for delivery delays both within the University and outside, especially if ordering non-standard components. These delays may be up to **2 weeks** or even longer if non-standard parts are ordered. The University's suppliers are Onecall (<http://onecall.farnell.com>) / CPC (<http://cpc.farnell.com>) / Farnell (<http://uk.farnell.com>), Rapid (<http://www.rapidonline.com>) and RS (<http://uk.rs-online.com>). Please refrain from ordering components from other suppliers (eBay, Amazon, Banggood and other similar PayPal-based suppliers cannot be accepted). If another supplier is required, please check first with a Lab technician. Please always check that the ordered components are available in UK stock (this information is provided in the suppliers' websites). If a surface mount component is required, please specify this in the item/function column – otherwise a no surface mount component will be assumed.

Components								Technician use only		
Item/function	Type No.	Make	Supplier	Order code	Unit Price	Quantity	Ordered	Rec'd	Checked	
1 Active Downconverter Mixer - 1 kHz to 3GHz, 4.5V-5.25V Supply Voltage, QFN16	LT5512EUF#PBF	Linear Technology	RS	506-0861	£7.21	3				
2 RF Amplifier IC- 16 dB Gain / 1.1 dB Noise, 100 MHz to 6 GHz, 2.7 V to 4.2 V supply, SOT-343	MGA-71543-BLKG	BROADCOM	OneCall	1347205	£1.53	2				
3 RF Amplifier IC - 18.5 dB Gain / 2.2 dB Noise, DC to 3 GHz, 2 V to 5 V supply, SOT-343-4	BGA427H6327XTSA1	INFINEON	OneCall	2480587	£0.688	2				
4 AVX 0603 (1608M) 1.5pF Multilayer Ceramic Capacitor MLCC 200V dc ±0.1pF SMD	06032U1R5BAT2A	AVX	RS	698-3986	£0.056	5				
5 KEMET 0603 (1608M) 100pF Multilayer Ceramic Capacitor MLCC 50V dc ±5% SMD	C0603C101J5GACTU	KEMET	RS	264-4523	£0.01	25				
6 KEMET 0805 (2012M) 1µF Multilayer Ceramic Capacitor MLCC 16V dc ±10% SMD	C0805C105K4RACTU	KEMET	RS	451-5770	£0.088	25				
7 Vishay 0402 (1005M) 8.2pF Multilayer Ceramic Capacitor MLCC 200V dc ±0.25pF SMD	VJ0402D8R2CXCAJ	Vishay	RS	788-0327	£0.259	10				

8	EPCOS SIMID Series Type 0603 (1608M) Wire-wound SMD Inductor with a Copper Plated Ceramic Core, 5.6 nH \pm 5% Wire-Wound	B82496C3569J000	EPCOS	RS	496-0899	£0.085	10			
9	EPCOS SIMID Series Type 0603 (1608M) Wire-wound SMD Inductor with a Copper Plated Ceramic Core, 220 nH \pm 5% Wire-Wound	B82496C3221J000	EPCOS	RS	496-1038	£0.353	10			
10	Molex KK 254 6410, 2 Way, 1 Row, Straight PCB Header	22-27-2021	Molex	RS	483-8461	£0.192	10			
11	RS PRO Right Angle 50 Ω PCB Mount Bulkhead Fitting BNC Connector, jack, Nickel, Through Hole Termination	-	RS Pro	RS	526-5864	£4.75	4			
12	RF / Coaxial Connector, BNC Coaxial, Straight Flanged Plug, 50 ohm, Brass	B1551A1-NT3G-50	AMPHENOL	Onecall	1111290	£4.29	2			
13	1:2 Surface Mount Balun Transformer, 50 Ω	DXP18BN5014TL	Murata	RS	839-0904	£0.55	5			
14	Analog Devices, Op Amp, 70MHz, 8-Pin SOIC	LT1363CS8#PBF	Analog Devices	RS	779-9227	£5.165	2			

Comments

Supervisor's signature

Date: