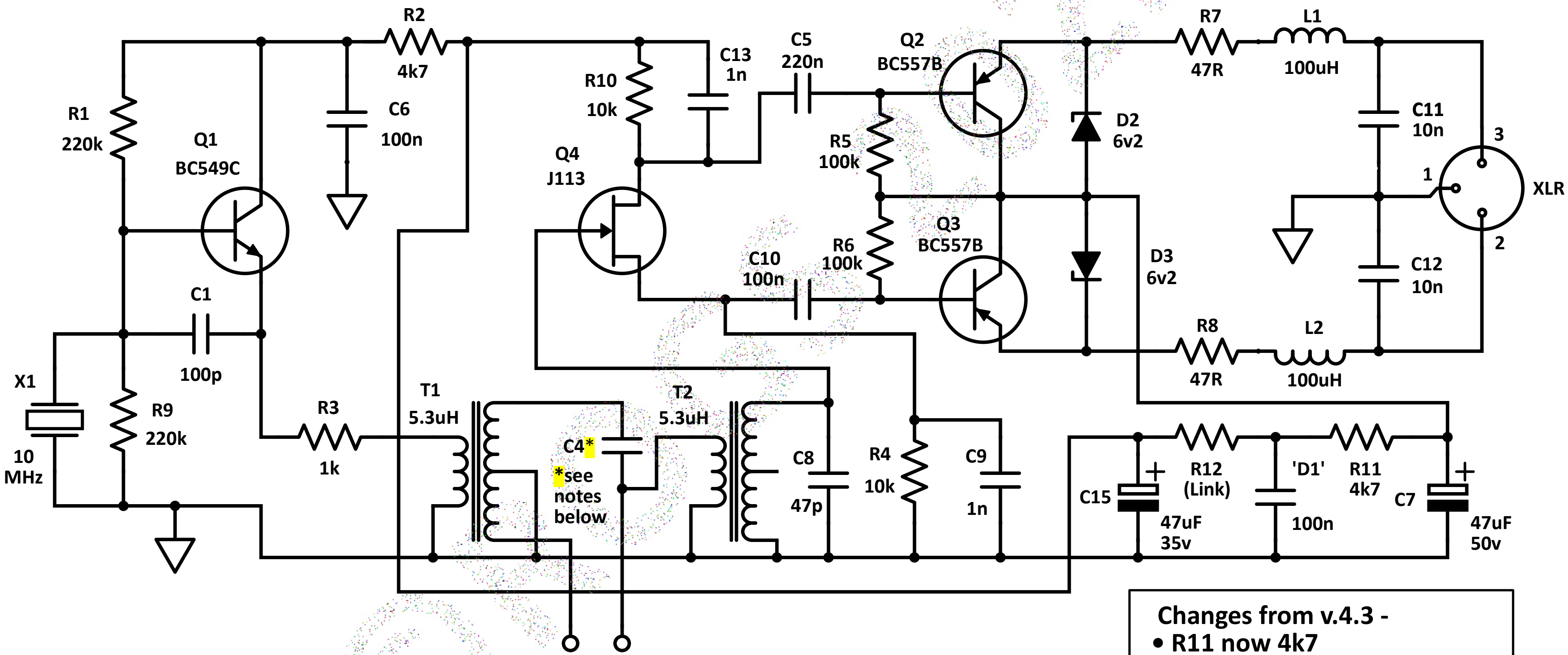
RF.AMX10 v.5.0

DIY RF Condenser Microphone – Schematic

• Sensitivity: (K.67 type capsule) c. -23dB • S/N: 82dB • Current: 3mA



LDC Mic Capsule

© rogs 2.2.22

Changes from v.4.3 -
- R11 now 4k7
- Revised Schematic
- C4 selection notes added

When Spectrum inductors type 5u3HH are used for T1 and T2, it is recommended that a microphone capsule with a capacitive value of between 65pF and 90pF be selected for best results.
Capsules with a lower value than c.65pF can result in a lower system 'Q', which can lead to a degraded noise performance.
* The value of C4 should be chosen to be close to - and preferably slightly lower than - the measured capacitive value of the capsule.
(It may be that 2 capacitors in parallel are required to obtain the most suitable value – ideally < 10pF below the capacitive value of the capsule)

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PCB Parts List (2.2.22)

Resistors -

R1 - 220k	R7 - 47R
R2 - 4k7	R8 - 47R
R3 - 1k	R9 - 220k
R4 - 10k	R10 - 10k
R5 - 100k	R11 - 4k7*
R6 - 100k	R12 - (link)
	*** Value changed from v.4.3**

• All 1% 1/8w metal film - **MF12 series**
• 47R x 2, 1k x 1, 4k7 x 2, 10k x 2, 100k x 2, 220k x 2

Capacitors -

C1 - 100pF	C8 - 47pF
C2 - not fitted	C9 - 1nF
C3 - not fitted	C10 - 100nF
C4 - * see schematic (fit track side)	C11 - 10nF
C5 - 220nF	C12 - 10nF
C6 - 100nF	C13 - 1nF
C7 - 47uF 50V	C15 - 47uF 35V

• C1, C4, C8. C11, C12 and 'D1' are **Vishay K series** - class 1 C0G 50V MLCC
• C5, C6, C9, C10 and C13 are **Multicomp MCPBSFC series** - 63V polyester
• C7 and C15 are **Panasonic M series** - 6.3mm diameter
• **C2 and C3 are not fitted**
• **C14 is not present**

Semiconductors -

Q1 - BC549C
Q2 - BC557B
Q3 - BC557B
Q4 - J113 JFET
'**D1' - now fitted as 100nF COG MLCC**
D2 and D3 - 6V2 500mW Zener diode - **BZX79 series**

Crystal -
• X1 - 10MHz (**IQD - LF A143K**))

Inductors -

• T1 and T2 are **Spectrum Communications 10mm 10K 7MHz RF/IF coils - Type 5u3HH**
(see here - http://www.spectrumcomms.co.uk/Components.htm)

• L1 and L2 are 100uH RF chokes - **Multicomp MCAL series: MCAL0410A1 - 101KU**

(All components - (except T1 and T2) are available from CPC Electronics in the UK)