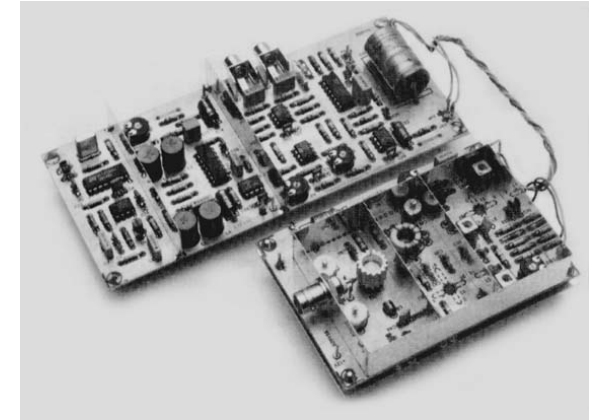


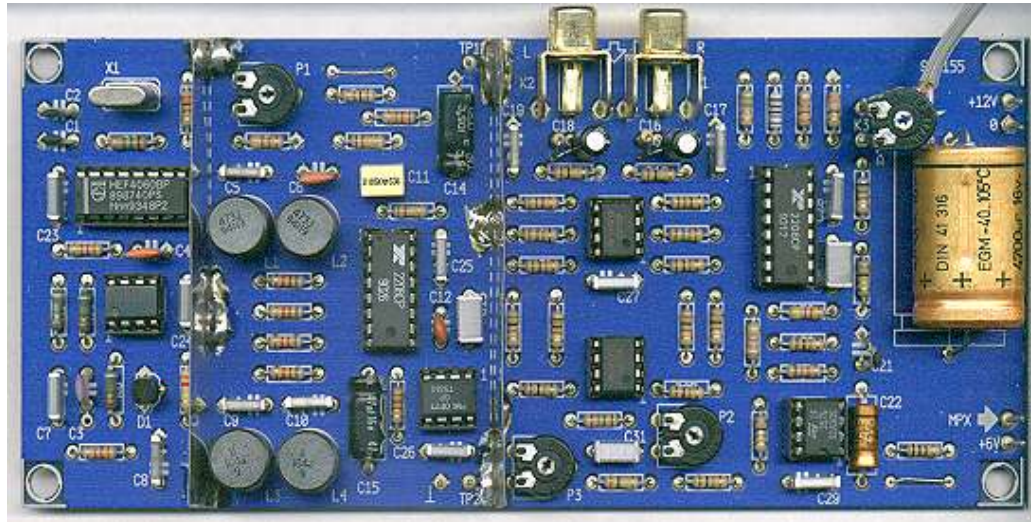
## Elektuur-Stereocoder

This design originally comes from Elektro Sonderheft Hochfrequenz 1 (Elektor Plus 18) in Germany, but it was also published in the Dutch version Elektuur in May 1993 (Number 355) pages 66-75. The stereocoder was published together with a three stages transmitter that can deliver 150mW (see picture at the right). However this transmitter is very difficult to build, because all coils have to be made handmade (and are not ordinary coils). Therefore only the stereocoder part is described here. The stereocoder pcb could be ordered by Elektuur using number 920155, but the print is not for sale anymore. After searching the internet it turns out that [Geist Electronic Germany](#) still sells the complete kit. But be aware that the kit costs 128 EURO, which is around \$114US. The PCB costs 42 EURO, which is around \$38US. Some images on this page come from [Bauanleitungen für UKW-Kleinsender](#).

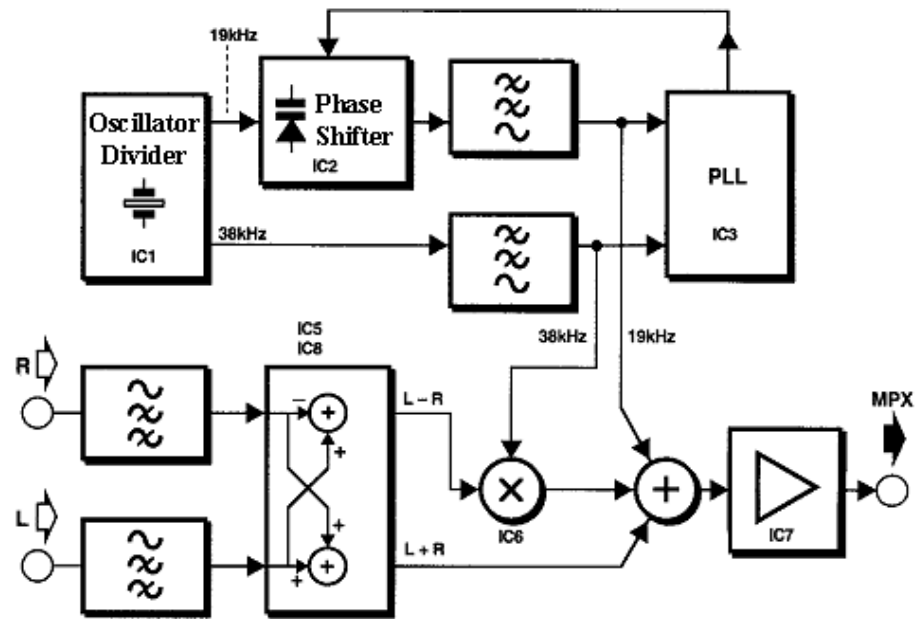


98,40 73,00	<b>930602-1XBTIPL +++ FM Stereo-Meßsender</b>	<b>EL Jul He</b>
	... inklusive Quarz 2,432 MHz und 2x XR2208CP (nicht mehr in Fertigung)!	
	Bausatz komplett mit X-Platine DM 237,50	
Plus-	Platine einzeln, 920155-1X DM 76,90	<b>9308</b>
105,90 15,85	<b>930603-1XBTIPL</b>	<b>Tele</b> Gehä

*Screenshot from pricelist at 9-10-2001*

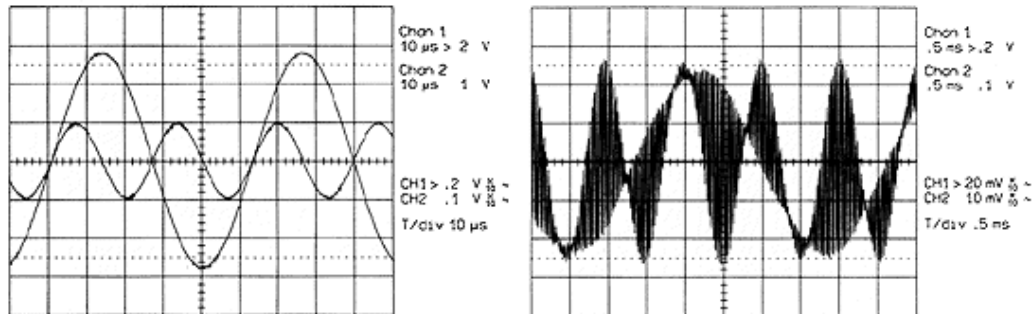


This stereocoder is divided in several blocks (see figure below). A digital quartz oscillator makes the 19[kHz] and the 38[kHz] in combination with a divider. Both 19[kHz] and 38[kHz] signals are then passed through filters that convert the blockwaves into sinus waves. After those filters a Phase Locked Loop (PLL) in combination with a phaseshifter shifts away phase-differences between both signals.



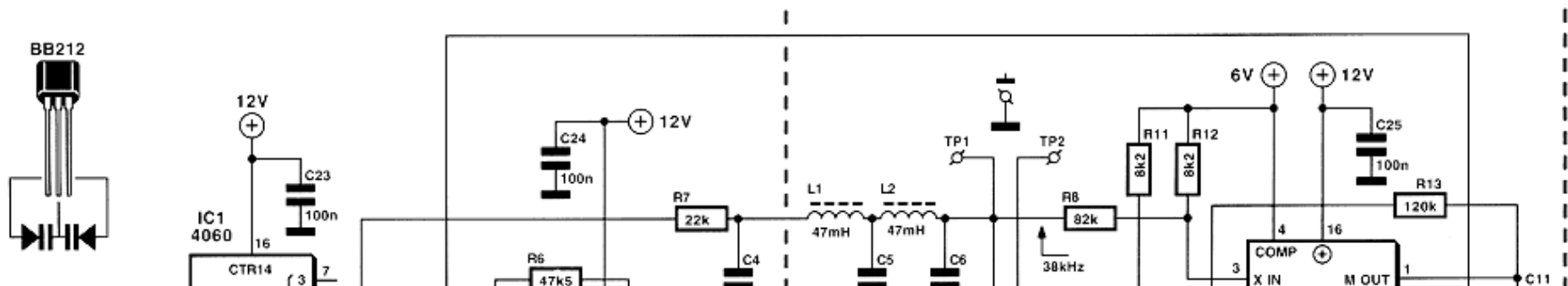
Blockscheme of the stereocoder

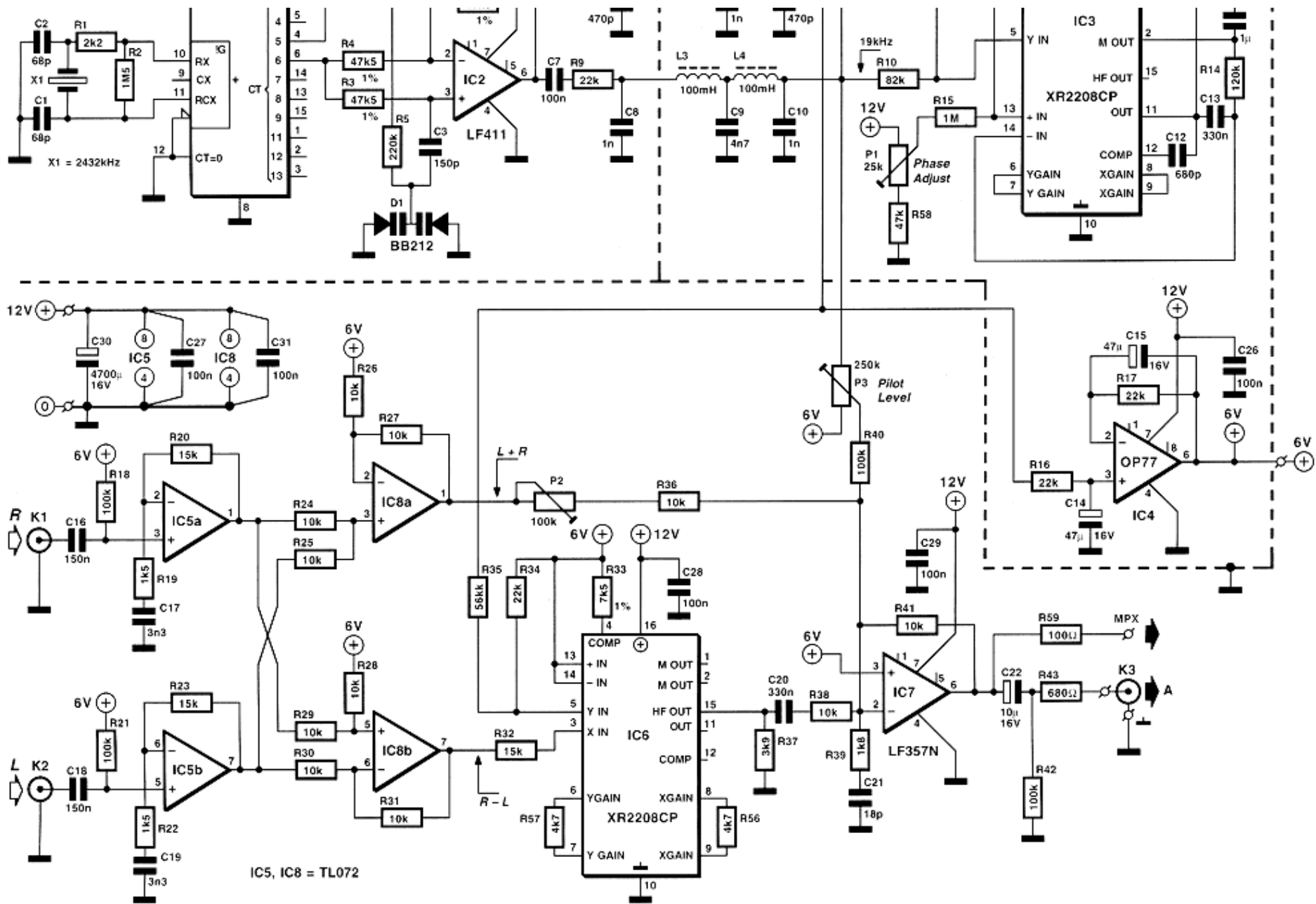
Both right and left channel signals first go into a Pre-Emphasis-Network, after which they are added (L+R) and subtracted (L-R). After this the L-R signal is multiplied with the 38[kHz] signal (DSSC-signal). An adder adds the 19[kHz], the L+R signal and the DSSC-signal which makes up the MPX signal.

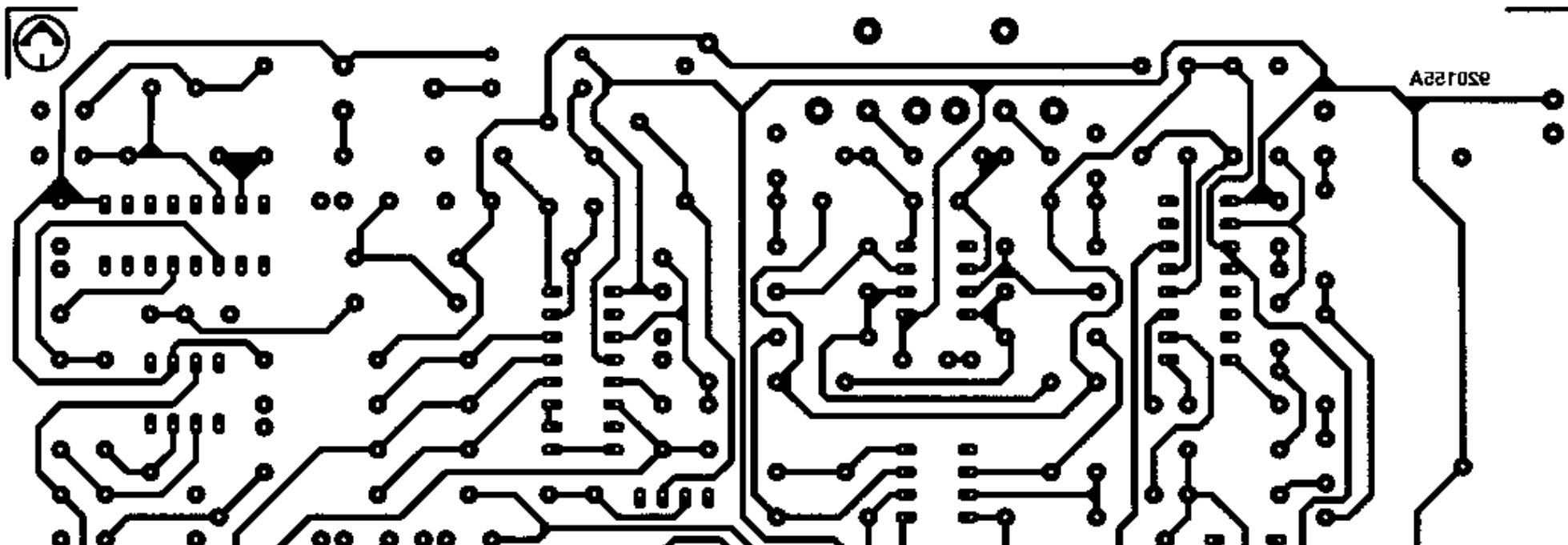
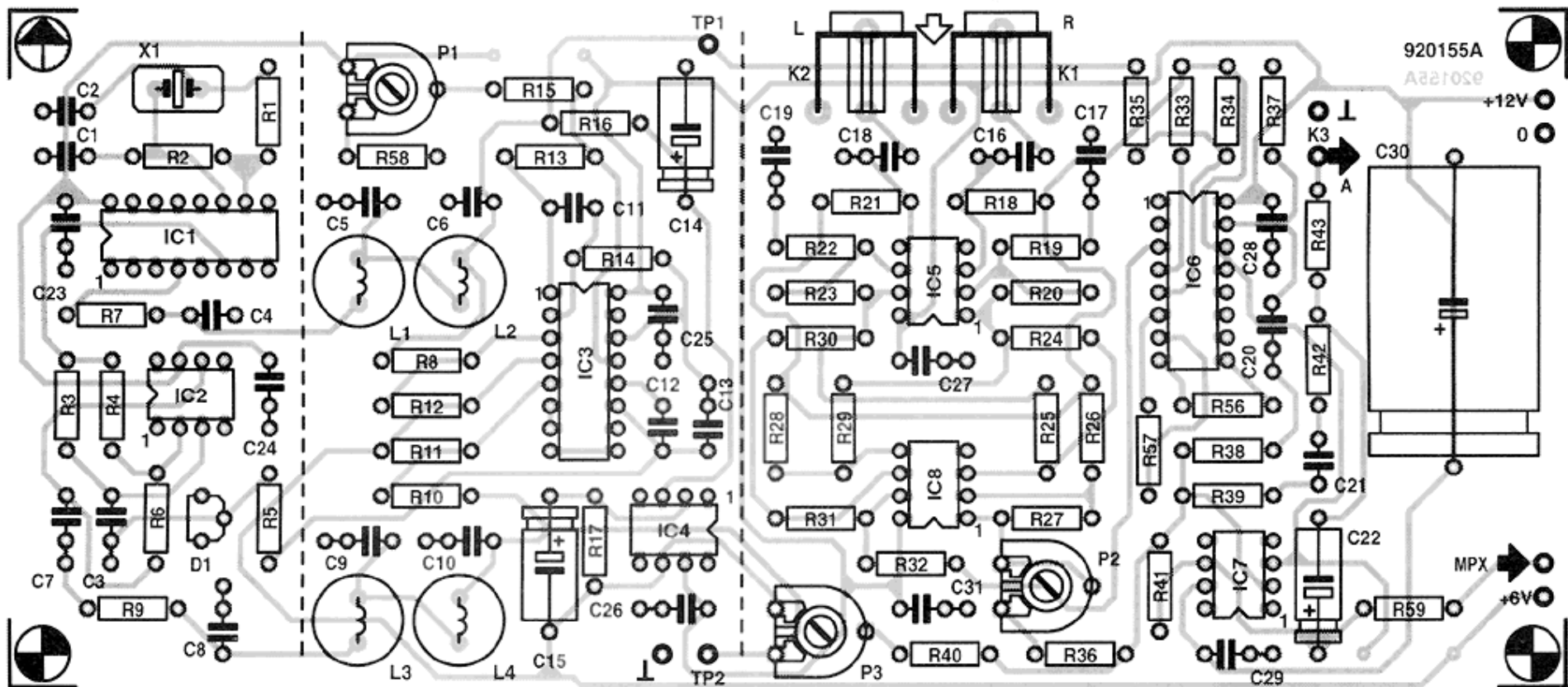


19[kHz] and 38[kHz] signals (left) and MPX signal without pilottone (right)

The complete schematic looks as follows. Note that the two XR2208 have different purpose: IC3 is the PLL and IC6 the analog multiplexer.









1 5 6 7

