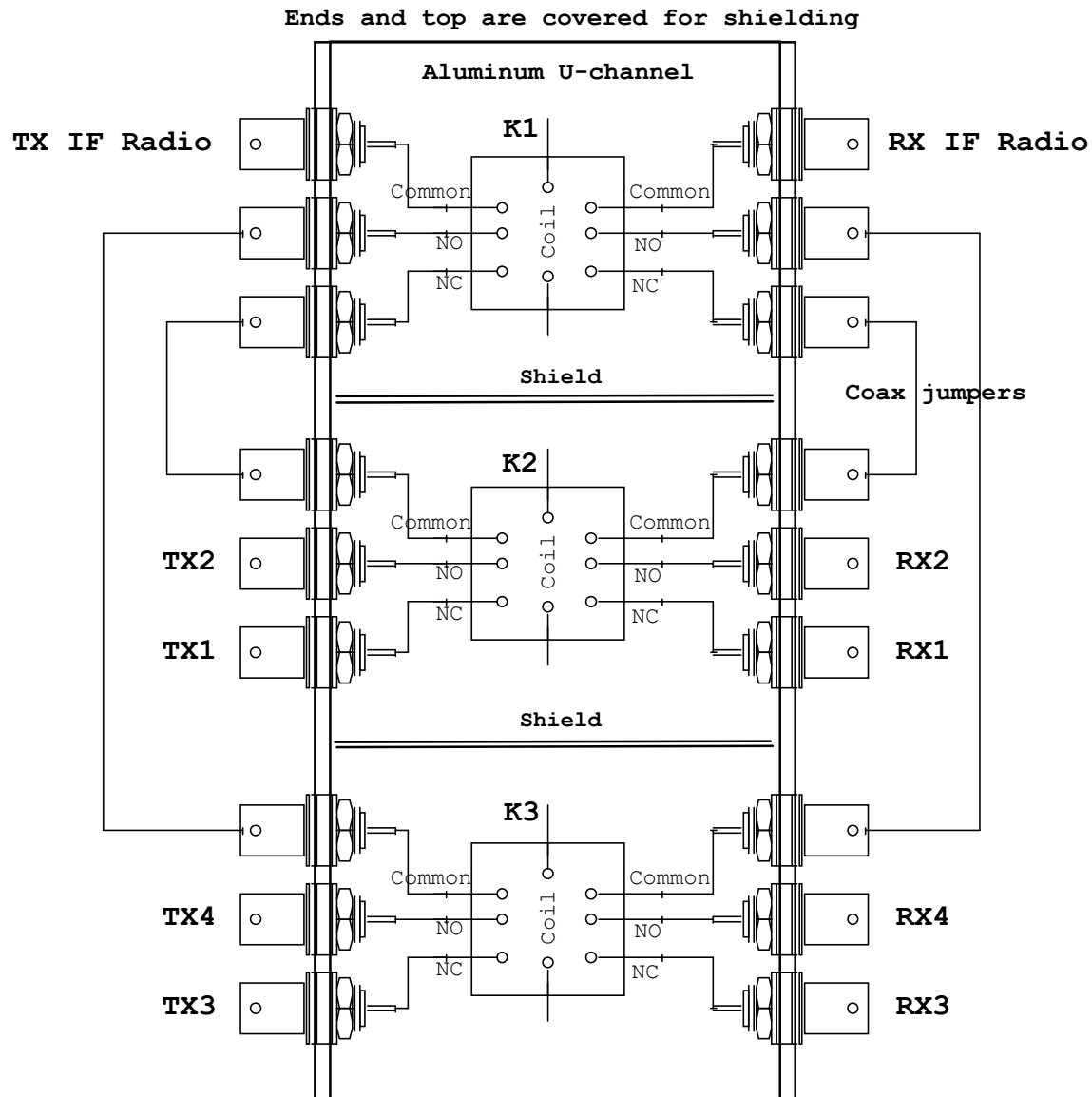


Transverter 4-Band IF Switching

WA3JUF 1990

Using the surplus Teledyne S172 or
712D series PC board type relays.



Truth table

Band	K1	K2	K3
RX1	0	0	0
TX1	0	0	0
RX2	0	1	0
TX2	0	1	0
RX3	1	0	0
TX3	1	0	0
RX4	1	0	1
TX4	1	0	1

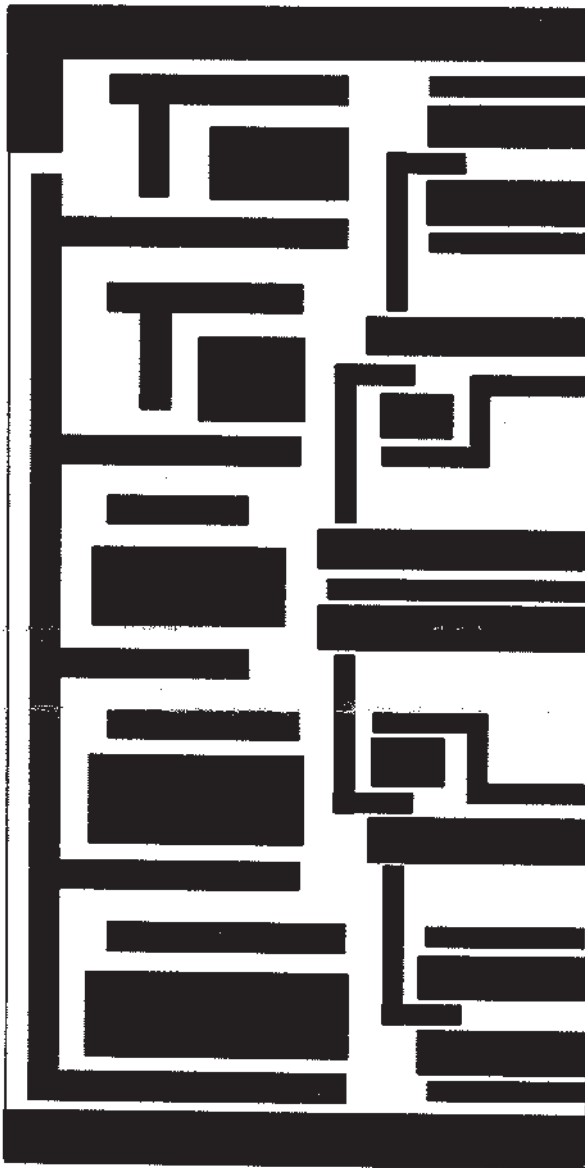
The 6-way Transverter Switching project follows

PC Board Layouts

1:1 Scale

Trace Side

1/16" G-10 type material





Relay type




Pin diode type


6-Position Pin Diode RF Switch

C1  = .01 ufd chip

L1  = 10 uh, leaded or SMD

C2  = .001


R1  = 47K 1/8W

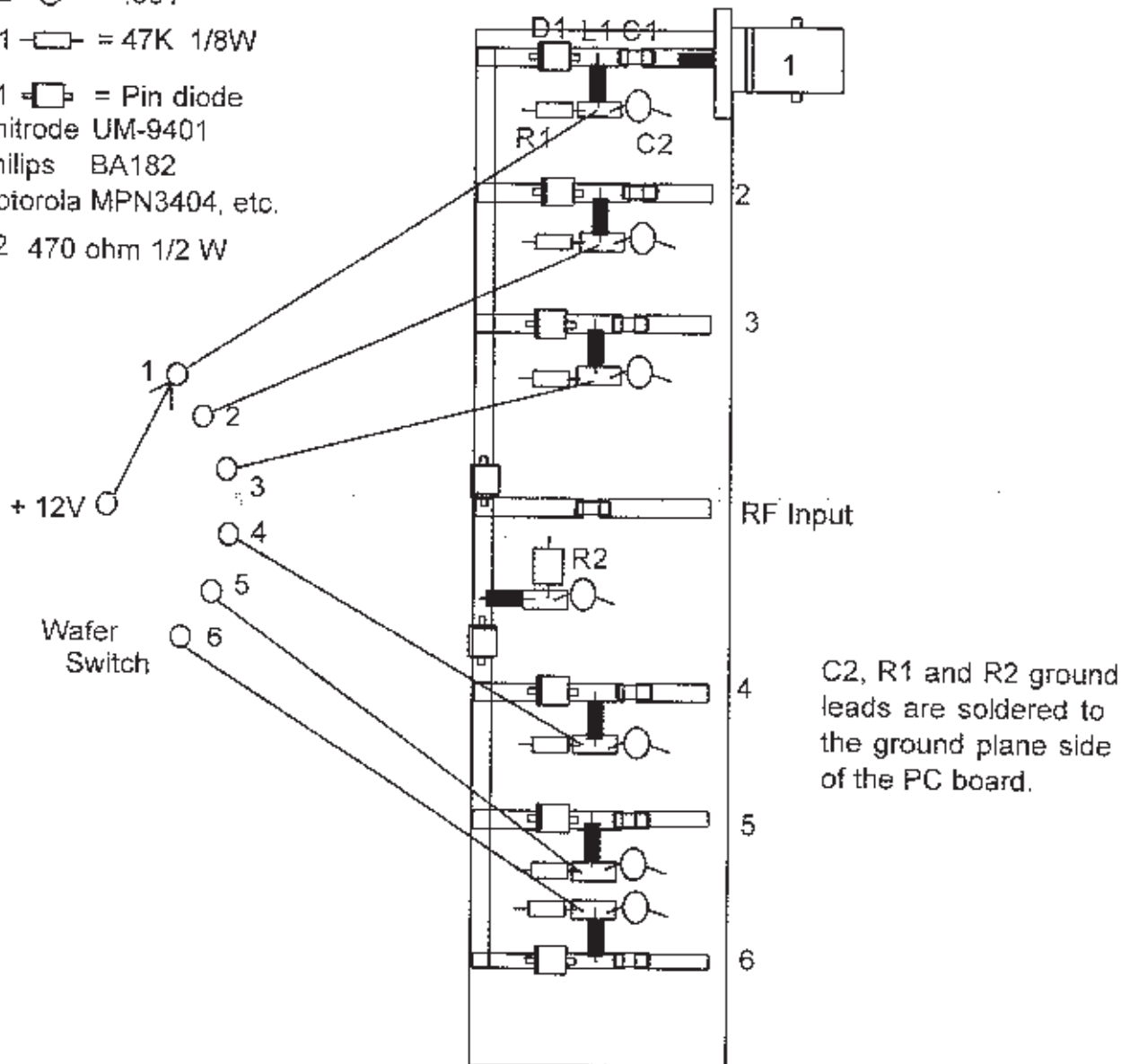
D1  = Pin diode

Unitrode UM-9401

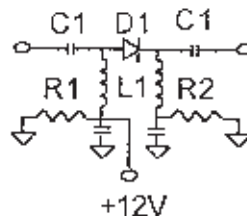
Philips BA182

Motorola MPN3404, etc.

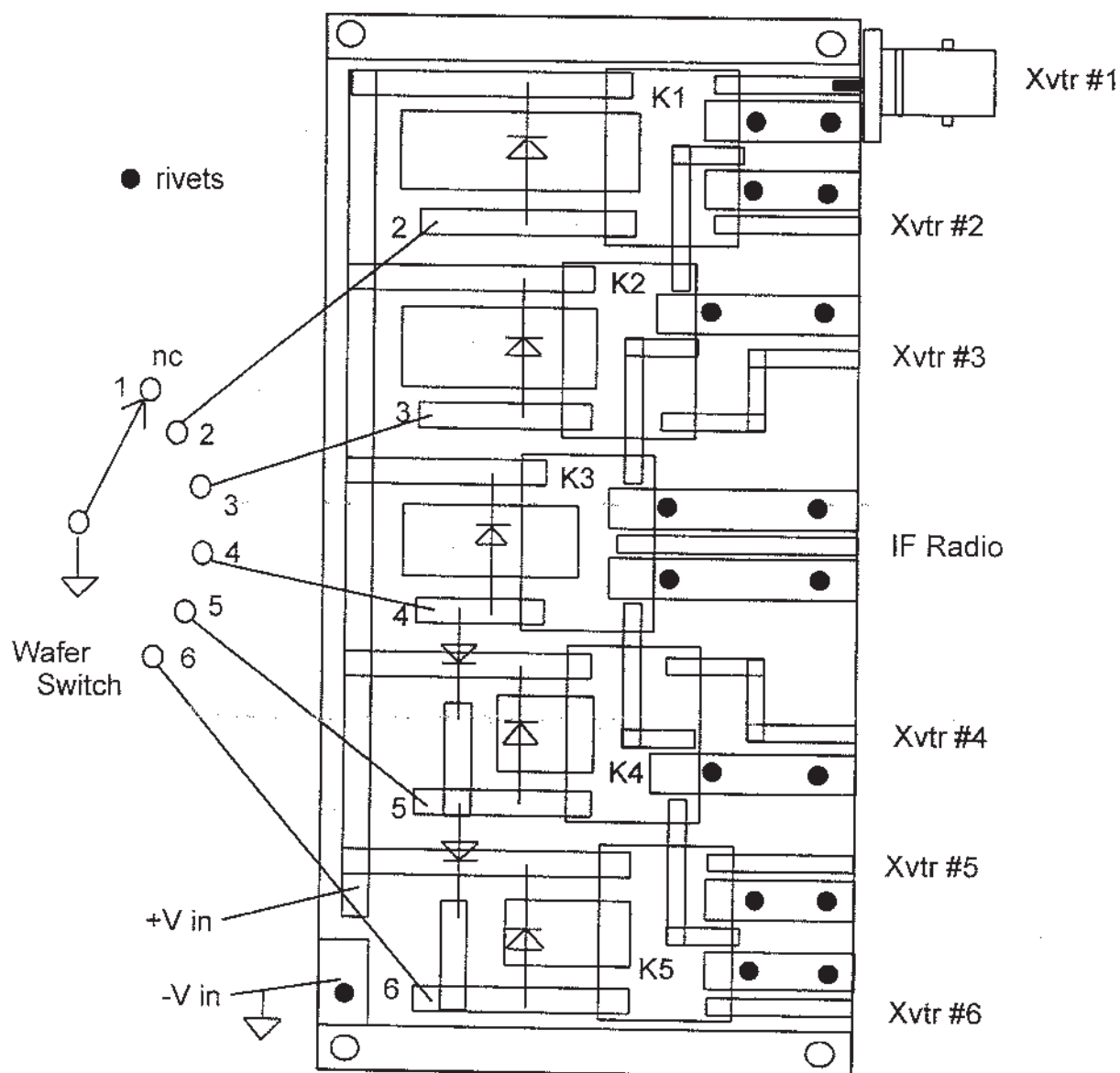
R2  470 ohm 1/2 W



Individual Pin diode switch schematic



Relay type 6-Position Transverter IF Switch



Top side (X-Ray view of etched side)

K1 thru 5 = Omron G4Y-152P (24V) or G5Y-1-DC12

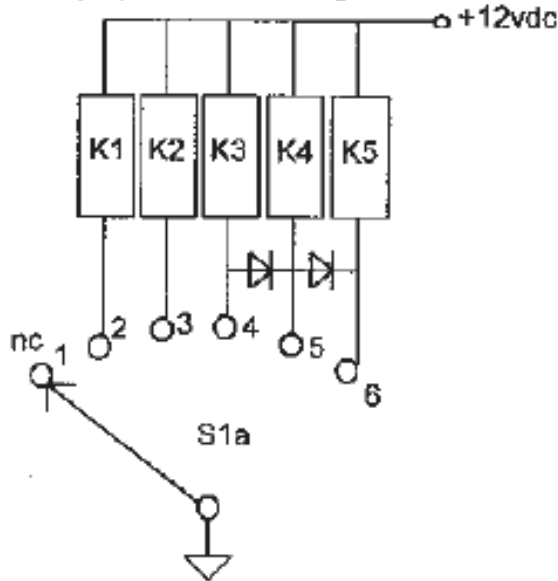
6-Port IF switch		Input Match			
Measured response:		I.L.	Isolation	Return Loss	SWR
Relay type	28 MHz	.05 dB	77 dB	23 dB	1.15:1
Pin Diode type	28 MHz	.35	40	17	1.3:1
Relay type	144 MHz	.05	35	14	1.5:1
Pin Diode type	144 MHz	.43	36	23	1.15:1

Note: The use of the IF post amp dc switch can increase the band-to-band receive IF isolation to >70 dB.

Multi-Port Transverter IF Switching

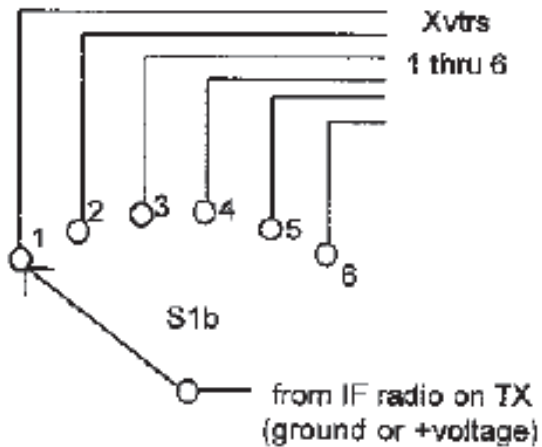
by Dave Mascaro, W3KM

Relay type RF switching unit



K1 thru K5 have diodes
across each coil

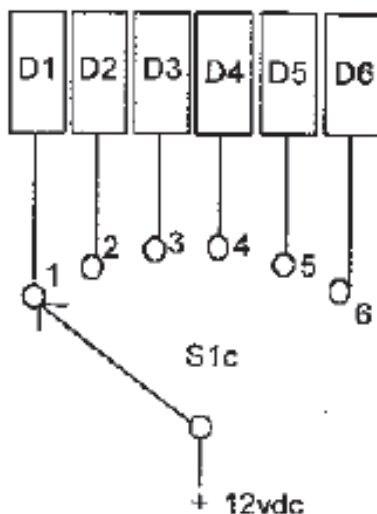
Keying line switching



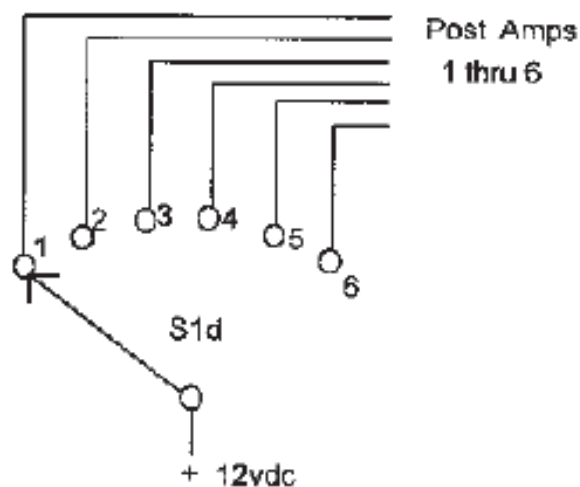
S1a,b,c,d = wafer switch sections

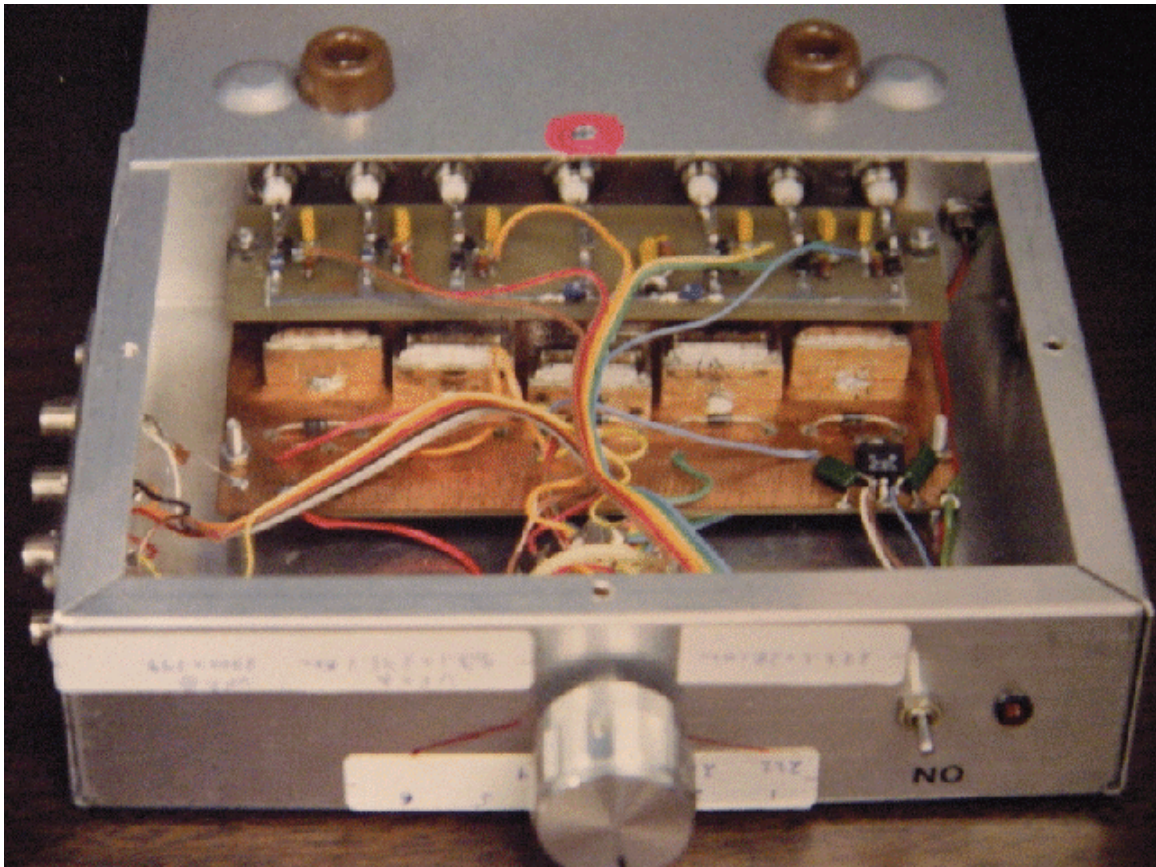
The IF switching can be configured for separate RX and TX, or single line Transceive operation. For the latter, the RF switching between the mixers is done inside the transverter. Obviously, 2 RF switching units must be used for separate RX and TX.

Pin diode type RF switching unit



IF Post Amplifier dc switching





Transverter 6-Band IF Switch option WA3JUF 1998

Use relays for the RX side of the IF switch.

A power divider can be used for the TX side
to feed low TX IF levels to the transverters.
The surplus 6 and 8-way dividers are useable.

