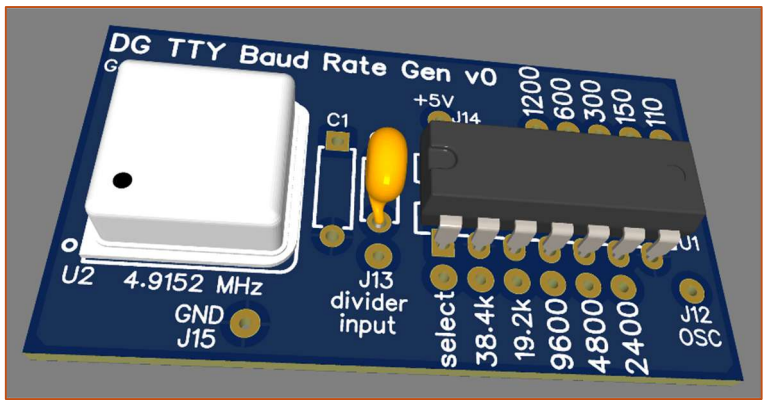
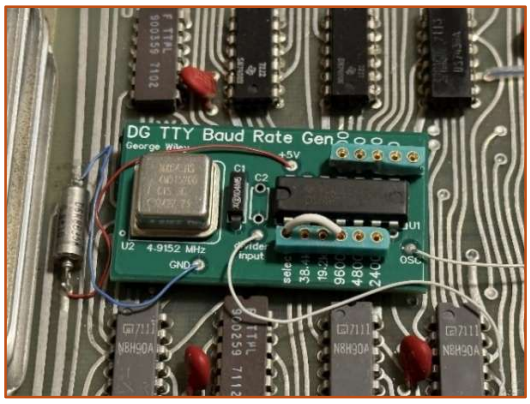
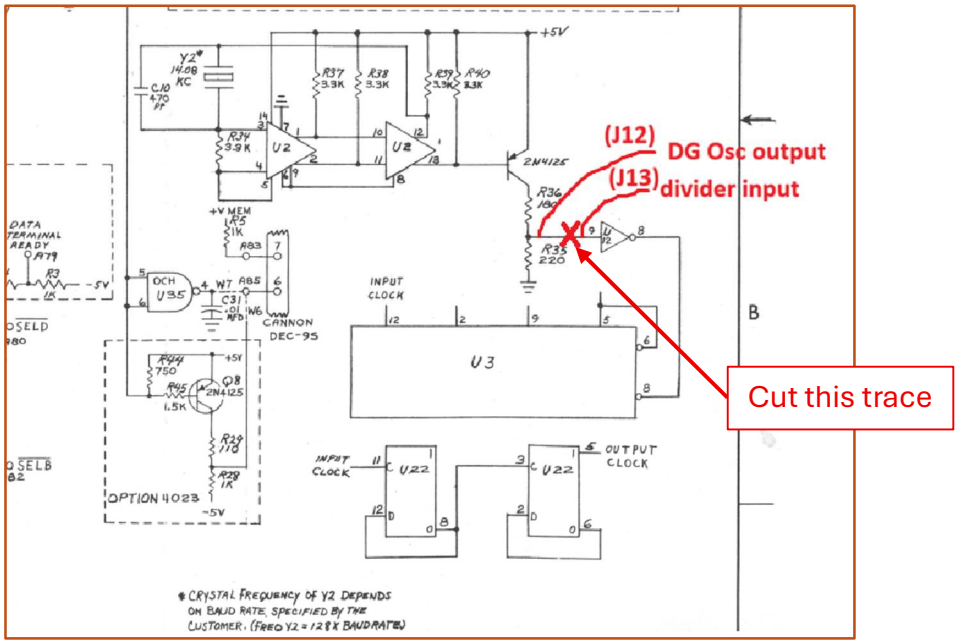
“DG TTY Baud Rate Gen” is a baud rate clock generator board for the Basic I/O 4010 Teletype Interface. The original 4010 board has only a 14.08 kHz crystal oscillator circuit that generates a 128x baud rate clock for 110 bps. The DG TTY Baud Rate Gen board generates 128x baud clocks for operation up to 38.4 kbps.





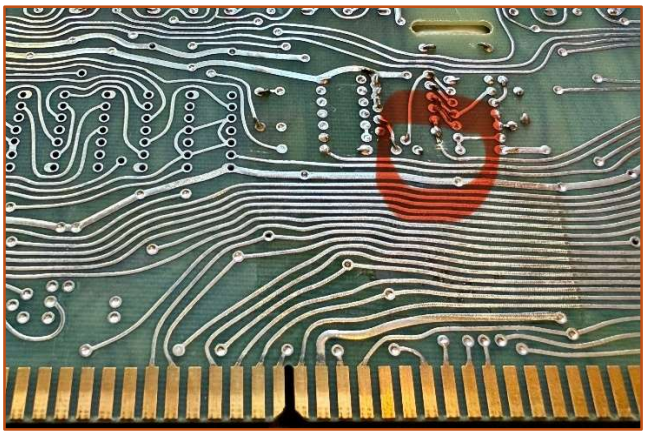
The baud rate generator board is installed onto the Data General Basic I/O 4010 Teletype Interface. The selected 128x baud rate clock is fed to the counter circuit on the 4010 board, in place of the on-board 14.08 kHz reference clock. A trace is cut that connects from the R35/R36 divider to U1 pin 9. Power (+5V) and GND to the DG TTY Baud Rate Gen board can come from a nearby tantalum filter capacitor as shown in the photo.

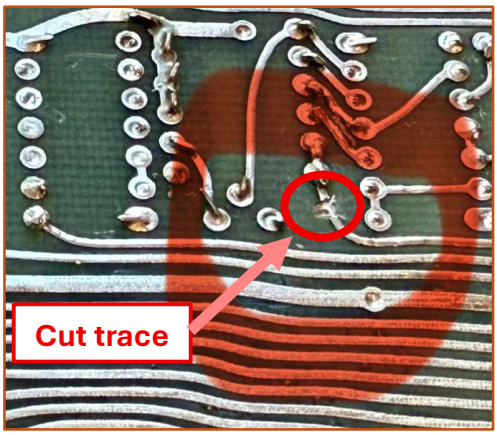


The baud rate is selected by connecting a jumper from the “select” terminal to any one of the ten rate selection points on the baud rate generator board.

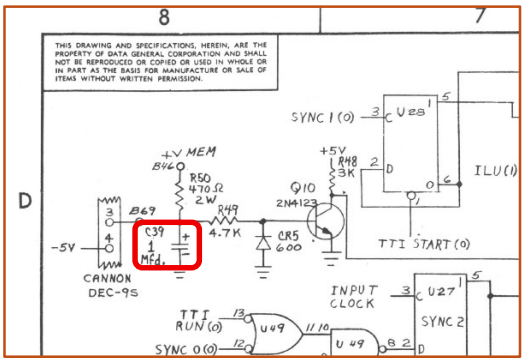
Rework Instructions:

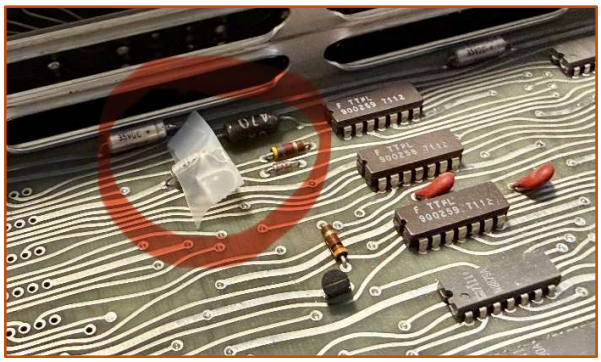
1. Cut the trace that connects from the hex-inverter input, U12 pin 9 to the junction of R35 (220 ohms) and R36 (180 ohms). The photo shows this cut near the junction of R35 and R36.

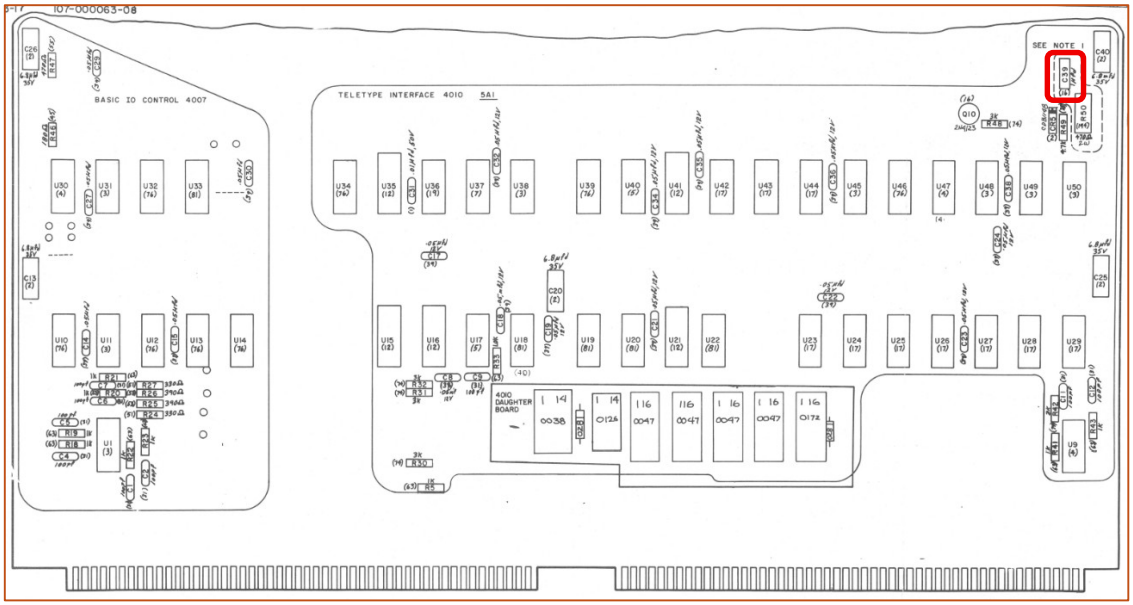




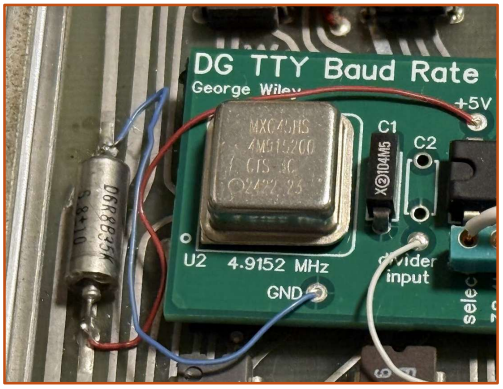
2. Remove the C39 filter capactor or disconnect one end of the capacitor at the serial input of the 4010 board. This is necessary because this capacitor is part of a low-pass filter that limits the receive baud rate capability of the 4010 board.







3. Solder jumper wires the “DG TTY Baud Rate Gen” board terminals J12 (OSC), J13 (divider input), J14 (+5V), and J15 (GND). The other end of these wires will be connected in the following steps.
4. Mount the “DG TTY Baud Rate Gen” board to a blank area on the Data General 4010 board. Use a thick double-sided adhesive material to prevent short circuits between traces on the two boards. I used small squares cut from an adhesive Velcro strip. I chose to mount it in the blank area between U9 and U29 which is close to a tantalum bypass capacitor. This capacitor is a convenient connection point for +5V and GND.
5. Connect the wires from the J14 (+5V) and J15 (GND) terminals to a source of +5V and GND on the 4010 board. Double-check that the polarity is correct.



6. Connect the wire from J13, divider input, to U12 pin 9 on the 4010 board.
7. Connect the wire from J12, OSC, to the end of R36 that connects to R35
8. Install a jumper wire from “select” to the terminal corresponding to the baud rate that is needed. The baud rate is shown in the silkscreen legend on the “DG TTY Baud Rate Gen” board.