DK7NT 30.05.2002
CRO_SWITCHON-E_2.DOC

First powering up of the CRO Board:

1. **General:**

   Before putting the CRO boards in a housing (they fit in a standard tin box 111*74*30 and 74*37*30mm) their functionality must be tested.
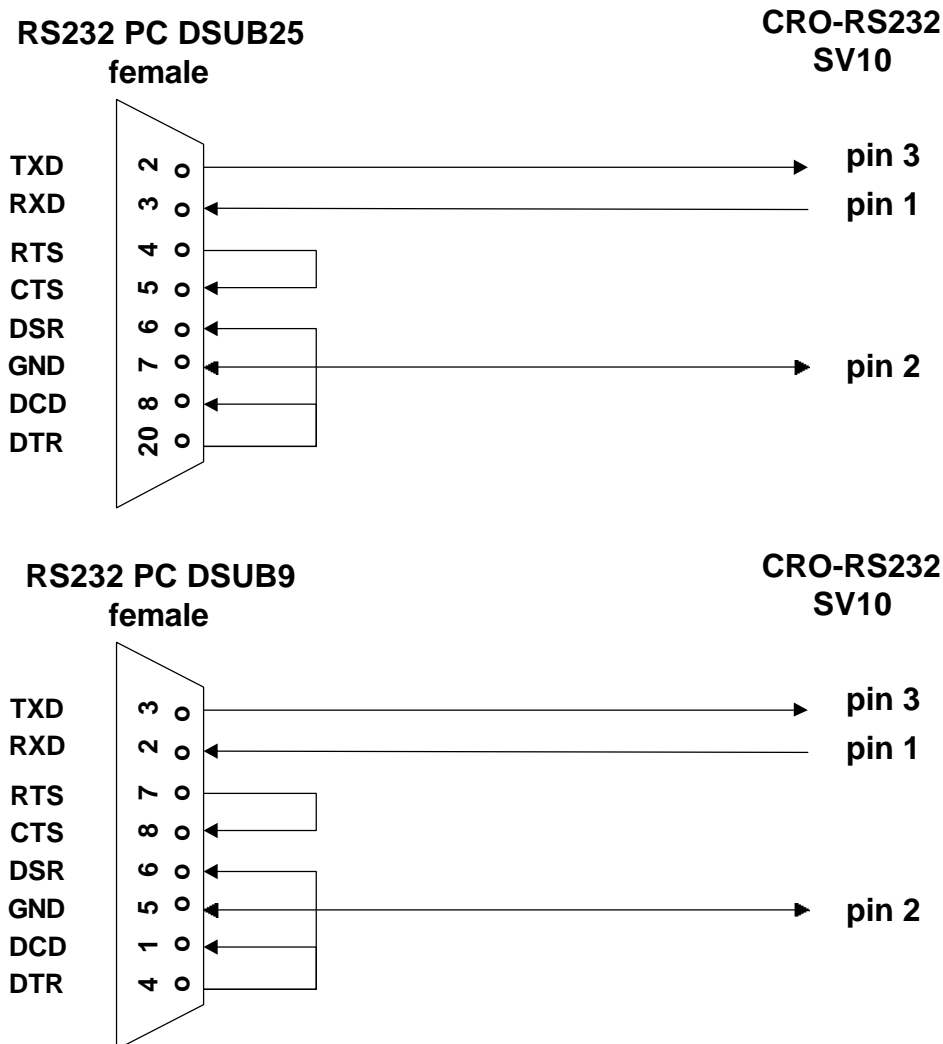
2. **Start condition:**

   All devices sould be mounted on the board but without the FPGAs and CPU. No connections are made to other boards.

3. **Check the power of the CRO Digital part.**

   Supply the CRO with 8V at SV7 . The current should be around 90 mA. Check the 5V after the regulator.

4. **PC-connection via RS232.**

   The following cable between the CRO and the PC is needed :

RS232 PC DSUB25
female

CRO-RS232
SV10

TXD	2	pin 3
RXD	3	pin 1
RTS	4	
CTS	5	
DSR	6	
GND	7	pin 2
DCD	8	
DTR	20	

RS232 PC DSUB9
female

CRO-RS232
SV10

TXD	3	pin 3
RXD	2	pin 1
RTS	7	
CTS	8	
DSR	6	
GND	5	pin 2
DCD	1	
DTR	4	

If there is no data transfer, check the voltage at pin **1 SV10**. It must be around **–6V** and check also if you do not mix up RXD and TXD.

5. Program the MC software:

The FPGAs are alread programmed. However the CPU must be programmed with the latest version of the CRO software.

Put the FPGAs and CPU into the sockets.

Connect both pins of SV2 before turning the power for the CRO on. The current should now be about **210 mA**. Now follow the instructions of **CRO_SYSPROG.DOC** .

After you have programmed the SW into the CPU, disconnect power and remove the short .

6. LCD and Key board:

The LCD board must be connected to **SV9** according to the **CRO_CONNECT.DOC** file. Take care that the keys make a short cut to GND.

Check all connections again and if you are sure everything is correct, turn the CRO on.

If you do not see anything on the LCD display, adjust the contrast by the potentiometer until you can see the system message.

Disconnect power .

7. Reference signal connection

Depending on what kind of reference is used, connect the TV tuner to **SV6** and the FBAS signal to **SV8** or the 1PPS pulse to **SV4** . For the 1PPS signal, please refer to the FAQ how the signal must look like.

Power up the CRO and set the parameters of the operating software appropriately..

Now you should see **ok** while the reference frequency is tested during the synchronisation procedure which is automatically executed after power on. If you see **failed** , check the input level of the reference signal.

Disconnect power.

8. Oscillator connection

Now connect the oscillator to be tested to **SV4**. It is recommended to check the input level of the oscillator with an instrument. Sometimes you need an attenuator, an amplifier or for higher frequencies a piece of coaxial cable to adjust the level.

Now you should get **ok** during the synchronisation procedure after power up.

9. CRO-Analog borad connection .

If everything is ok up to now, the CRO can already be used as a measuring instrument.

Connect **SV3** of the CRO_DIGITAL with **SV4** of CRO-ANALOG according to the **CRO_CONNECT.DOC** file .

10. EFC connection

Before the EFC connection takes place , you can check the reliability of CRO_ANALOG part by using the DAC TEST LOOP function .

The last step is the EFC connection of CRO-ANALOG with the control input of the oscillator (OCXO).
Connect **SV1** via a suitable cable (coaxial) to the oscillator.

After that proceed with the instructions of **CRO_OSZI.DOC.**