ADALM Pluto SDR REV C/D Software Mods for QO100

First establish USB contact and transfer the original software update to the Pluto SDR (move the Pluto.fm file to the Pluto and then eject the USB device (Pluto) and wait until it reconnects.

Orginal Firmeware:

https://github.com/analogdevicesinc/plutosdr-fw/releases/tag/v0.34

(plutosdr-fw-v0.34.zip) stand 28.05.2022

Frequency expansion and activation of the second CPU:

First I installed a telnet client (puTTY). With the help of this program, an encrypted SSL connection to Pluto can be established and a terminal will be opened:

After logging in as "root" and "analogue", the parameters of the Linux environment can be queried and changed. First, the Adalm Pluto is suggested to have an ADAD9364 instead of the built-in AD9363, because the "bigger brother" supports a frequency range from 70 MHz to 6000 MHz. This is much more expensive, but the "little brother" AD9363 can use the same frequency range:

LogIn

```
login : root
password : analog
```

```
Warning: Permanently added '192.168.2.1' (ECDSA) to the list of known hosts.
root@192.168.2.1's password: analog
Welcome to:
```



The following commands activate frequency expansion and restart Pluto:

```
# fw_setenv attr_name compatible
# fw_setenv attr_val ad9364
# reboot
```

After restarting and reconnecting, the variables can be queried:

```
# fw_printenv attr_name
attr_name=compatible
# fw_printenv attr_val
attr_val=ad9364
#
```



The ADALM Pluto is now presented with an AD9364 transceiver component and the extended frequency range can be used.

The following command provides information about the CPUs.

cat /proc/cpuinfo

After only one is on, you can turn on the other with this command:

fw setenv maxcpus

When checking, you can now see both CPUs:

# cat /proc/cpuinfo	
processor	: 0
model name	: ARMv7 Processor rev 0 (v71)
BogoMIPS	: 666.66
Features CPU implementer CPU architecture CPU variant CPU part CPU revision	<pre>: half thumb fastmult vfp edsp neon vfpv3 tls vfpd32 : 0x41 : 7 : 0x3 : 0xc09 : 0</pre>
processor model name BogoMIPS Features CPU implementer CPU architecture	<pre>: 1 : ARMv7 Processor rev 0 (v71) : 666.66 : half thumb fastmult vfp edsp neon vfpv3 tls vfpd32 : 0x41 : 7</pre>
CPU variant CPU part CPU revision	: 0x3 : 0xc09 : 0
Hardware Revision Serial #	: Xilinx Zynq Platform : 0003 : 0000000000000

Procedure for activad external Clock :

use Putty
login : root
password : analog

fw_setenv refclk_source external // this enables the CLK_IN/OUT pluto reboot reset // reboots pluto and the CLK_IN is active

If your reference is not perfect you can correct it with:

fw_setenv xo_correction 39999750 // for example



Changing the frequency is done with:

fw_setenv ad936x_ext_refclk '<40000000>'

Or you use:

fw_setenv ad936x_ext_refclk_override '<40000000>'

pluto_reboot reset



And then transfer the DATV custom software to the Pluto (version 0303) Next add the associated patch via the update function:

https://www.f5uii.net/en/patch-plutodvb/

Done

More Info:

https://bit.ly/38stMe1

https://www.qsl.net/do3mla/qo100.html

https://www.facebook.com/groups/sdreverywhere