Examples of using qtools

This document compiles examples of various practical tasks that can be accomplished using the qtools suite.

Procedure for changing the modem's IMEI

The IMEI of the modem is stored in the nvram cell 0x226. The problem is that this cell has a one-time write attribute. In other words, it's programmed once at the factory, and all subsequent attempts to write to it are simply ignored, even without reporting an error. However, we can always find a way to work around this. To do this, you'll need to replicate the process through which nvram and EFS are generated at the factory. The following example is provided for the ZTE MF823/825 modem. For other modems, the procedure may be slightly different. In particular, the config file is used only by ZTE modems.
The sequence of actions will be as follows:

1. Back up all nvram cells from the modem::

```
./qnvram -ri
```

2. Back up the config file from the modem (for ZTE modems that use this file):

```
./qefs -gf confg
```

3. Put the modem into download mode and load NPRG into it, for example, for ZTE823:

```
./qcommand -e -c"c 3a"
./qdload -i loaders/NPRG9x15p.bin
```
The specific commands depend on the chipset and model of the modem.

4. Clear the EFS partition. To do this, determine its starting block and size using qrflash and then clear it using qwdirect:

```
./qrflash -s@ -m
./qwdirect -b<start> -c<len>
```

5. Restart the modem by unplugging it from USB and plugging it back in.
6. Write the desired IMEI:

```
./qnvram -j 834001432784560
```

7. Restore the other nvram cells:

```
./qnvram -wa
```

8. Restore the config file if it was present in the modem:

```
./qefs -wf config /
```

That's it. If the modem is in factory mode (with ttyUSB ports), switch it to the operational mode with the command "at+zcdrun=f" and restart it.