2,5GHz/510MHz Prescaler with LMX2330

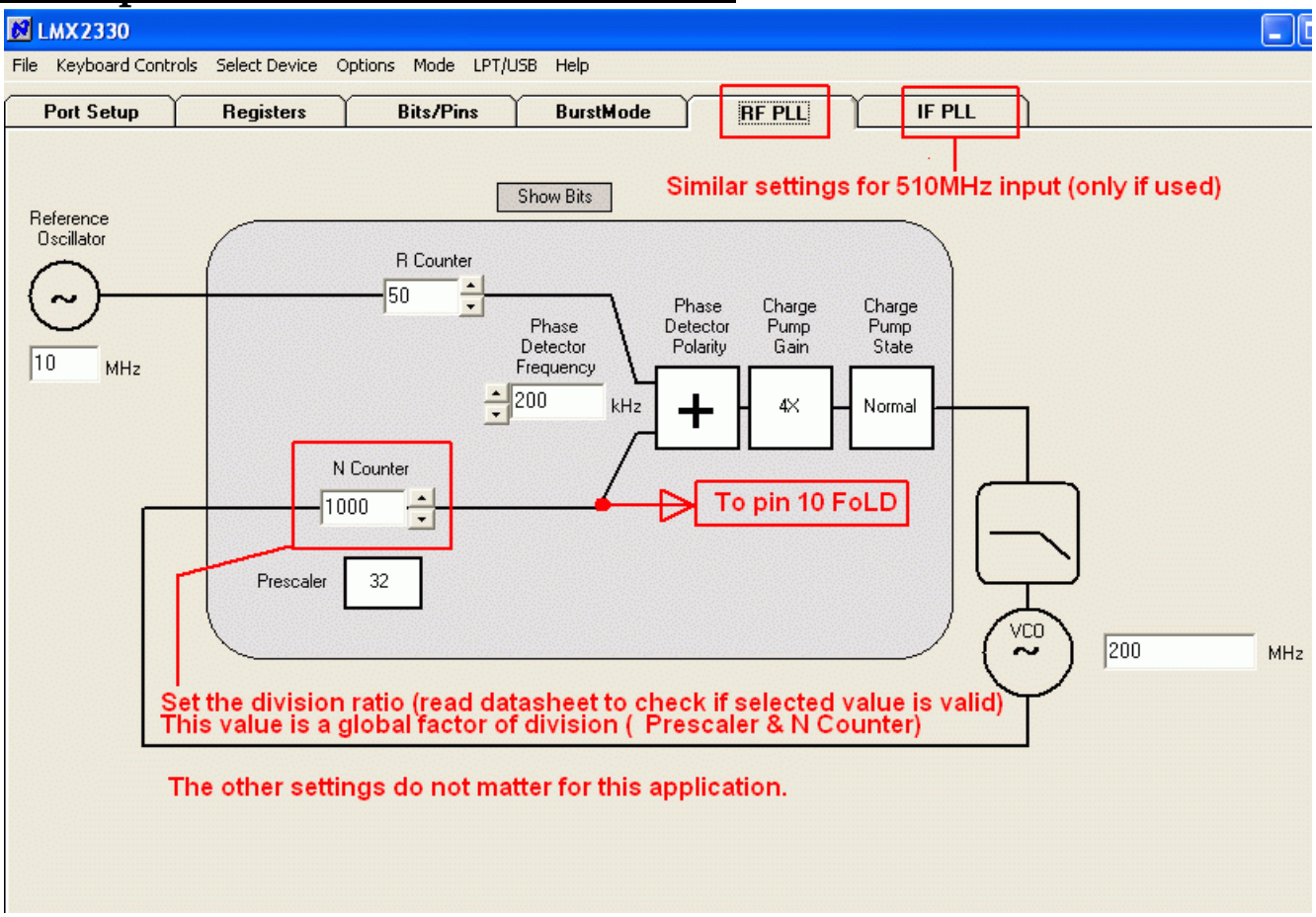
YO4HFU 05.01.2014

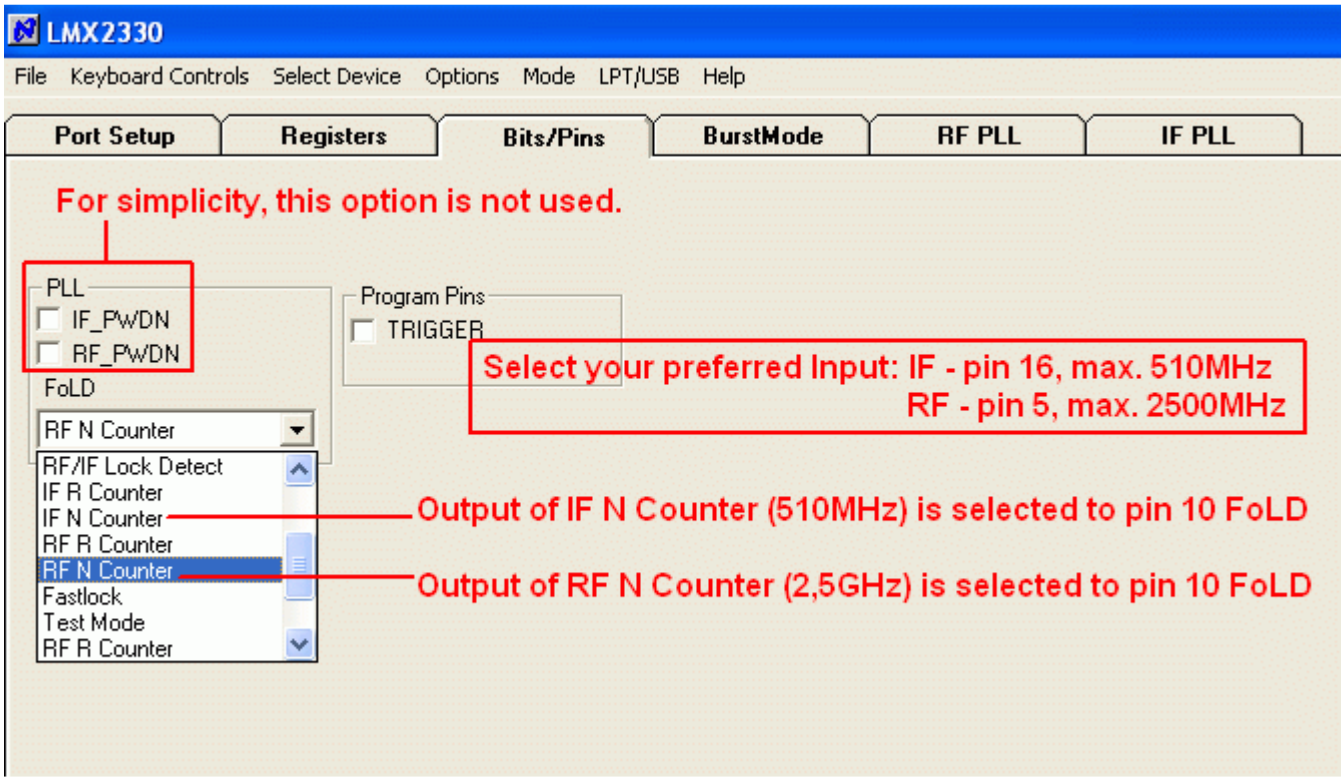
- **LMX2330 is Dual Frequency Synthesizer for RF**
- **It has an interesting option for amateurs: Output signals of Counters may be accessed from outside.**
- **LMX2330 contains 2 Phase Locked Loops: IF and RF.**
  IF PLL – max. 510MHz
  RF PLL – max. 2500MHz
- **Power Input: -10…+4dBm.**
  Sensitivity is better (-15dBm) for 3V power supply.
- **Divided signal is available at pin FoLD (10).**
  Both prescalers can't be accessed simultaneously!

For testing and registry calculation, I used Code Loader 4 from National Semiconductor.

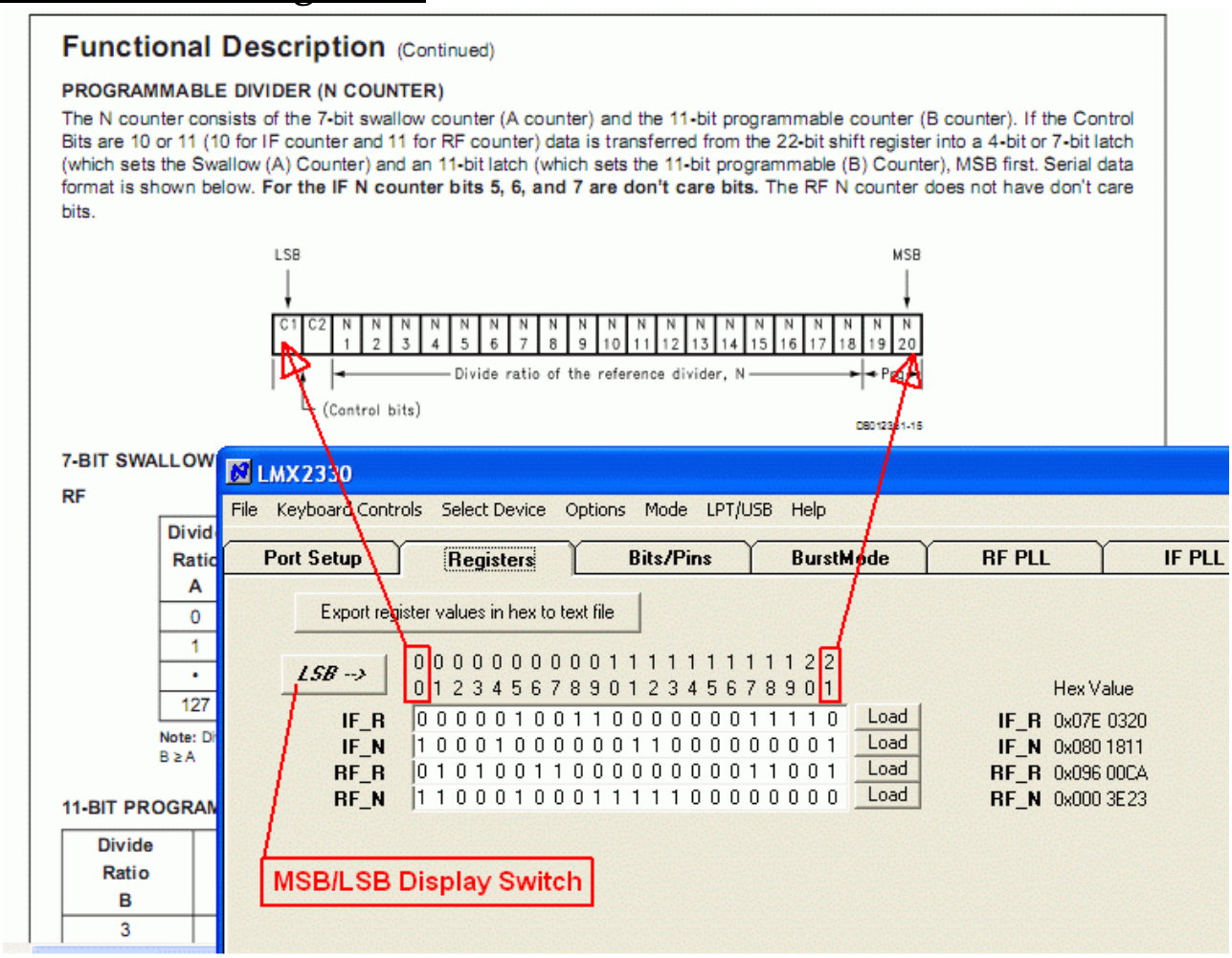
Calculated values of the registers must be inserted into the source program written for PIC16F628A. Then the source code is compiled with MPLAB.

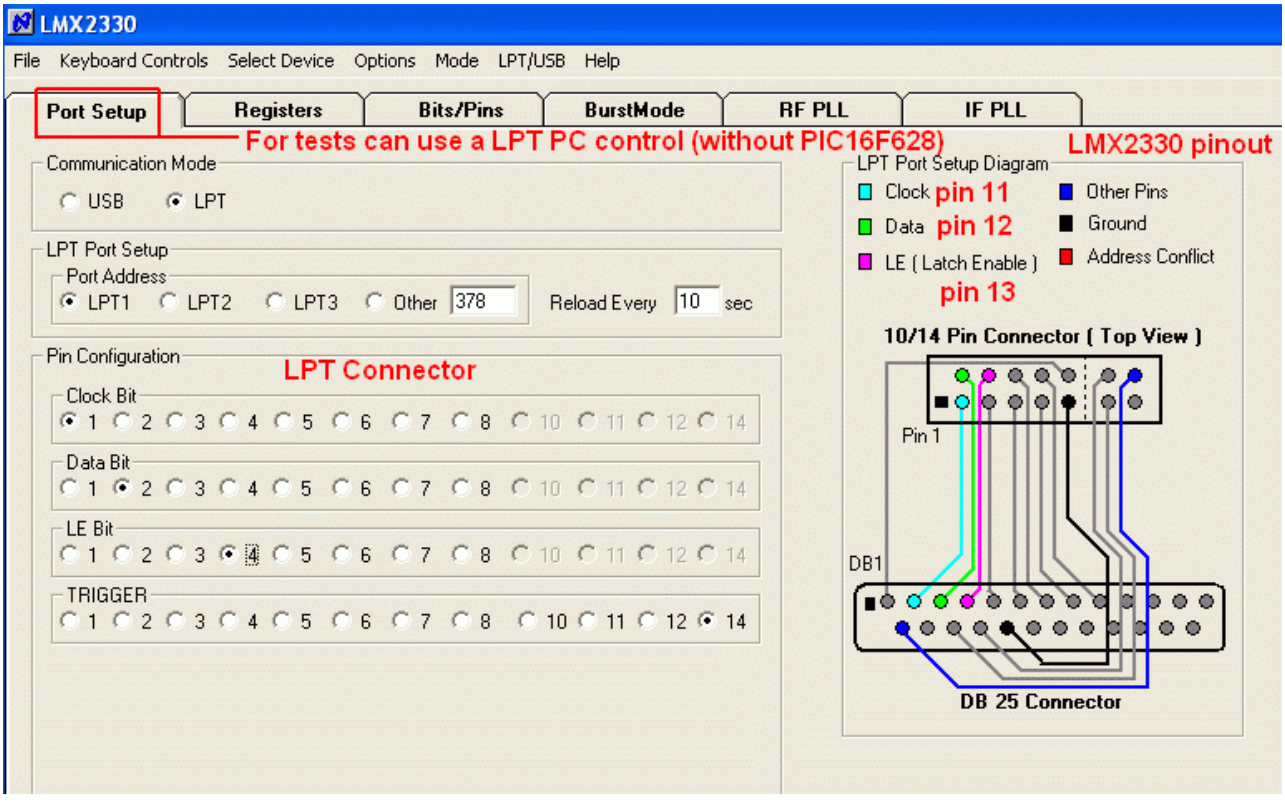
Some print screens with this software:





Values of the registers:



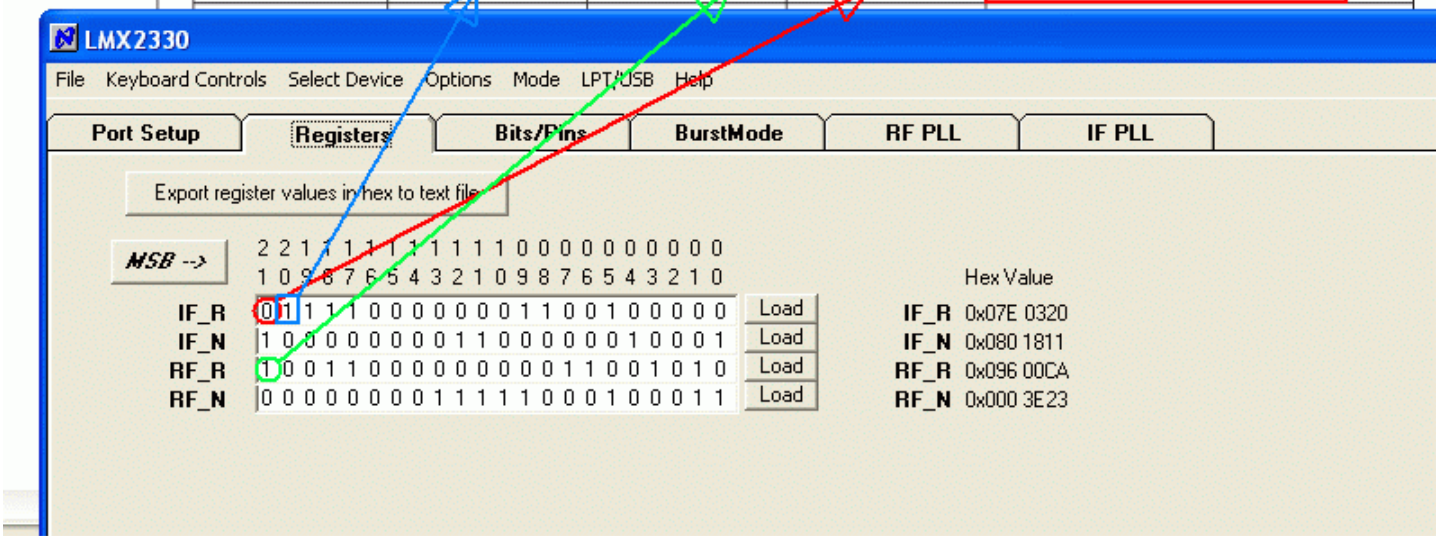


Note 6: The I_{CP_O} LOW current state = 1/4 x I_{CP_O} HGH current.

Note 7: Activation of the IF PLL or RF PLL powerdown modes result in the disabling of the respective N counter divider and deblasing of its respective f_N inputs (to a high impedance state). The powerdown function is gated by the charge pump to prevent unwanted frequency jumps. Once the powerdown program mode is loaded, the part will go into powerdown mode when the charge pump reaches a TRI-STATE condition. The R counter functionality does not become disabled until *both* F and RF powerdown bits are activated. The MICROWIRE control register remains active and capable of loading and latching data during all of the powerdown modes.

TABLE 3. The F_oLD (Pin 10) Output Truth Table

RF R[19] (RF LD)	IF R[19] (IF LD)	RF R[20] (RF F_o)	IF R[20] (IF F_o)	F_o Output State
0	0	0	0	Disabled (Note 8)
0	1	0	0	IF Lock Detect (Note 9)
1	0	0	0	RF Lock Detect (Note 9)
1	1	0	0	RF/IF Lock Detect (Note 9)
X	0	0	1	IF Reference Divider Output
X	0	1	0	RF Reference Divider Output
X	1	0	1	IF Programmable Divider Output
X	1	1	0	RF Programmable Divider Output



73's de YO4HFU