

Now, press the Read Block button again. Figure 2 shows the new read address that has automatically incremented to the next 32 byte row beginning at address 0x4020.

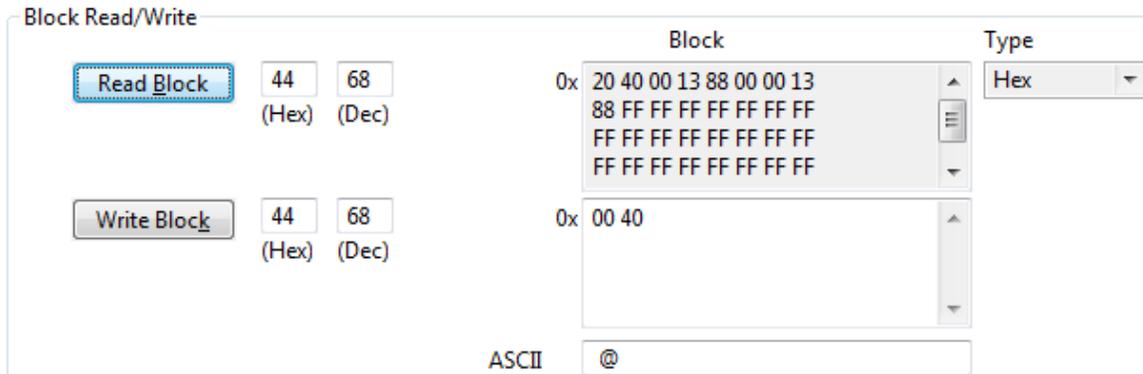


Figure 2. Block Reads are Automatically Incremented by Row.

A simple loop is all that is necessary in order to read out the entire data memory from the bq40z50. The data always start at 0x4000. But where does it end? The user can determine the end by using the Hex Dump feature on the Data Memory screen of bqStudio. The user may in fact prefer to use this file, or a modification of it for the Golden Image. Note that the addresses are in hex, but the addresses are shown as offsets to the beginning location of 0x4000 rather than as absolute addresses. Look at the bottom rows to determine the ending row address of the data memory. Note that it may vary with future enhancements to the bq40z50.

```

0578: 00 FA 00 40 00 4B 28 00
0580: 0E 74 00 64 1F 40 00 00
0588: 3C 0A 02 58 00 64 46 50
0590: 0A 00 00 19 43 80 01 0F
0598: 3C 00 64 28 14 FF FF FF
  
```

Figure 3. The Bottom of the Hex Dump File Reveals That the Final 32 Byte Row is at Address 0x4580

The user may write to the data memory in single bytes, words, or strings of any length up to 32. In order to write, append the desired bytes after the desired address. The entire data memory may be written as a simple loop of 32 byte rows. Individual parameters may then be overwritten without regard to the beginning row address. For example, in Figure 4 and Figure 5, the serial number for the pack is first being read, and found to be 0x0001.

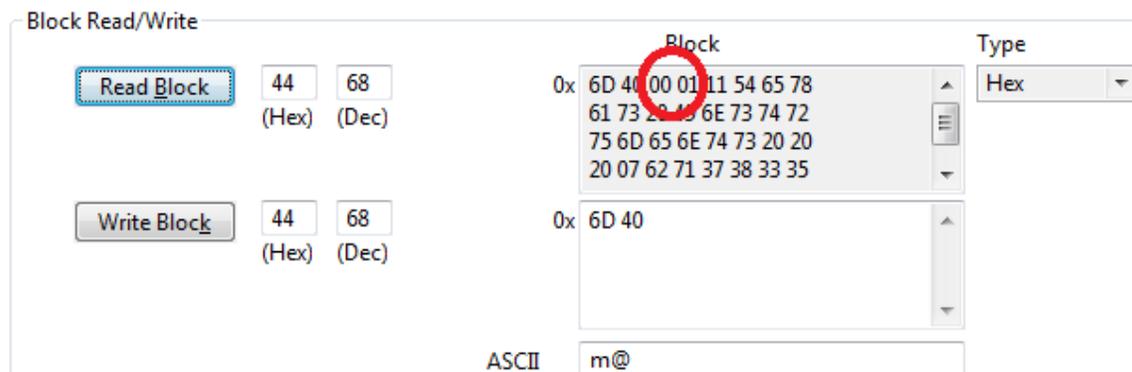


Figure 4. The Serial Number at Address 0x406D is Being Read

Then in [Figure 5](#), the serial number is changed from the default 0x0001 to 0x1234. Note the little endian ordering of bytes.

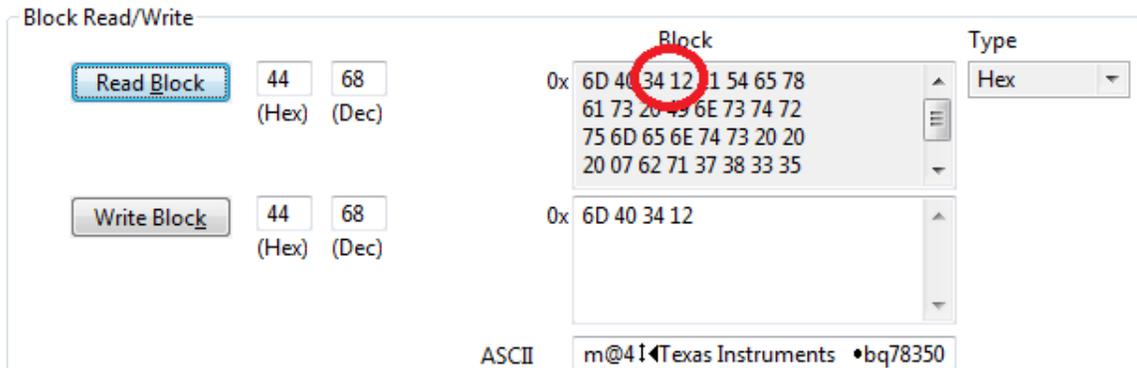


Figure 5. The Serial Number has Been Changed

3 Identifying Individual Addresses and Data Types

In order to understand the complete range of the data memory address, it is helpful to export the data memory from bqStudio using the advanced export feature. BqStudio exports the data memory in a column oriented .csv file where the user can examine the details of the data and have a reference address for each configuration setting. If the file is opened in Microsoft Office Excel, the address offset for each configuration parameter is found as a decimal offset to 0x4000 in column G. The data type and length are in columns E and F respectively.

From bqStudio, use the Window menu to bring up Preferences and then select Data Memory. As shown in [Figure 6](#), insure that the Export All Columns option is selected.

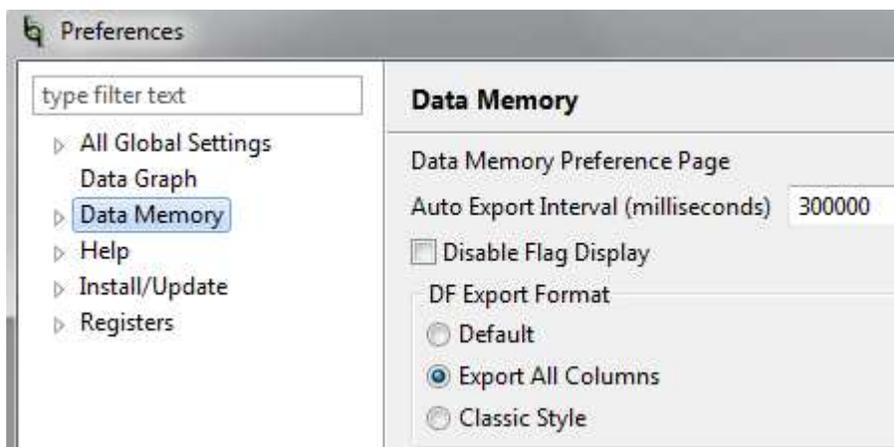


Figure 6. Insure all Data Memory Columns are Exported

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