Frequently Asked Questions

Title: MerlinPlus - Recorded Binary Dump File Format
Date: 09 Nov 15
Card/Board/Module: All 1553Px cards (also, older 1553EP cards)
Operating System: all

Question:

In the 1553Px products, Bus Monitor mode, what is the format of the MerlinPlus recorded file ?

Answer:

Here is sample C code that creates the records in the MerlinPlus dump file.

1. First we have a header record of size 100 bytes:

```
unsigned short output[100];
output[0] = 'M';
output[1] = 'E';
output[2] = 'R';
output[3] = 'L';
output[4] = 'I';
output[5] = 'N';
output[6] = '+';
for (int i=7; i<100; i++) output[i] = 1;
fwrite(output, 2, 100, out);
```

2. Then, for each message, the message is stored in the file as follows:

```
typedef struct MONMSG
{
 unsigned short msgstatus;
 unsigned short time_lo;
 unsigned short time_hi;
 unsigned short words[36];
};

struct MONMSG msg;
unsigned short size = msg.words[0] & 0x1F;

// mode code processing (SubAdress of 0 or 31)
if (((msg.words[0] & 0x3FF) >> 5) == 0) {
  if (size > 15)
    size = 1;
  else
    size = 0;
}
```

```
    if (size == 0) size = 32;

    // adding count+spare+status+timetag(2 bytes)
    size += 5;

    // adding CW and SW
    size += 2;

    // check if RT->RT; if yes increase size by adding CW2 and SW2
    if (msg.msgstatus & RT2RT_MSG) size += 2;

    dump[0] = size;
    dump[1] = 0x69;  // spare byte
    dump[2] = msg.msgstatus;
    dump[3] = msg.time_lo;
    dump[4] = msg.time_hi;
    for (int i=0; i<36; i++) dump[i + 5] = msg.words[i];
    fwrite(dump, size, 2, out);
```