

Binary Descriptor Page

Local Station Application

Fri, Jul 25, 2003

Introduction

The Binary Descriptor Page provides for general binary bit and byte database and I/O manipulation. One can enter the 16-character descriptions of each bit, the alarm flags for each bit, set or clear individual bits, set binary bytes, and monitor the current state of bits and associated trip counts. It can also output a listing of a range of bits in a target node.

Display layout

```
0   B BINARY DESCRIPT 07/25/03 1040
1   BIT<0613:0108>-<:03FF>      LIST  -->node/bit, range
2   0100 00 06 00 00 00 00 50 80  -->32 raw data bytes
3   0140 00 00 00 00 00 00 00 00
4   0180 00 00 02 7F 50 FF 01 00
5   01C0 00 00 00 00 00 00 00 00 #T
6   010F<RF3 PERM INHIBIT>0<9080> 0  -->bit titles,
7   010E<RF3 PA DC OV   >0<9080> 0   bit data,
8   010D<RF3 PA FIL OC  >0<9080> 0   alarm flags,
9   010C<RF3 DRIVER PA OL>0<9080> 0   trip count
10  010B<RF3 OV RESET RDY>0<9080> 0
11  010A<RF3 FREQ CW LMT >1<C080> 0
12  0109<RF3 FREQ CCW LMT>1<C080> 0
13  0108<                               >0<0000> 0
14  07/25/03 0707 ANI-BB-BSD--TTTT  -->clear trips
```

Displayed data

There are several areas of interest. Select a node and bit# on line 1 and interrupt to select a byte that contains that bit and show the text for all bits in that byte. The ending bit# gives a range of bits that are used for generating a listing (by interrupting under LIST) and causes a wrap when using the raise/lower buttons to advance the selected byte. The three characters just after the ending bit# are the data request status code for the three relevant requests that provide the data for the page. The character just before the word LIST is used for a blinking "*" while a listing is active. Interrupt again to terminate an active listing.

The four lines starting at line 2 show 32 bytes of binary data. The first bit# for the data on that line is shown at the left. Enter a new bit# at the start of line 2 to change the set of 32 bytes displayed, or use the raise/lower buttons with the cursor on any of these 4 lines to move through successive 32-byte chunks of binary data. The range given in line 1 determines when this logic wraps. If the current byte whose bits are displayed is in the range of the 32 bytes shown, the current byte value is shown in inverse video.

The 16-character bit titles are shown on lines 6–13. The bit# is at the start of the line. To the right of the text is the present bit value. To the right of the bit value is the 16-bit alarm flags word for that bit, where the significance of the bits displayed is shown on line 14, abbreviated as ANI-BB-BSD--TTTT.

The meaning of the individual bits are, listed from ms to ls bit, as follows:

- A Active=1 (not bypassed)
- N Nominal ("good" state)
- I Inhibit beam=1 (if in "bad" state)
- B Beam=1 (only scan on beam pulses, when Bit# 009F = 0)
- B Bypass control= 1 (sequence to inactive, bypassed state)
- B Bad=1 (good=0)
- S Silent=1 (do not report alarm, but maintain trip count)
- D Data invalid=1 (set when no response from SRM, for example)

TTTT Tries-needed, where 0–F means 1–16 tries for good/bad change

The last value shown on a beam title line is the trip count. If the trip count for a bit is > 999, the count is set to 999. In any case, the largest value of good-bad transitions is 2047, as the counter is a 12-bit count of transitions in either direction.

Control actions

Interrupt under the LIST word to start/stop a listing of the range of bits indicated on line 1. The format produced is as follows:

```

NODE=0613  BINARY DESCRIPT 07/25/03 1040
BIT<0613:0108>-<:0127>
BIT TITLE          V  AFLGS #T      BIT TITLE          V  AFLGS #T
010F<RF3 PERM INHIBIT>0<9080> 0      0117<RF3 HVPS          >0<9080> 0
010E<RF3 PA DC OV      >0<9080> 0      0116<RF3 SYSTEM HV     >0<9080> 0
010D<RF3 PA FIL OC     >0<9080> 0      0115<RF3 PA CROWBAR    >0<9080> 0
010C<RF3 DRIVER PA OL  >0<9080> 0      0114<RF3 PA CATH OV    >0<9080> 0
010B<RF3 OV RESET RDY  >0<9080> 0      0113<RF3 PA HV XFMR    >0<9080> 0
010A<RF3 FREQ CW LMT   >1<C080> 0      0112<RF3 MOD READY     >0<9080> 0
0109<RF3 FREQ CCW LMT  >1<C080> 0      0111<RF3 IPA ANOD OL   >0<9080> 0
0108<                >0<0000> 0      0110<RF3 DRVR ANOD OL  >0<9080> 0

011F<RF3 DRVR CROWBAR>0<9080> 0
011E<RF3 DRVR SCRN OV  >0<9080> 0
011D<RF3 PA WATER     >0<9080> 0
011C<RF3 MOD WATER    >0<9080> 0
011B<RF3 DRVR WATER    >0<9080> 0
011A<RF3 DRVR NOT RDY  >0<9080> 0
0119<RF3 DT WATER FLO >0<9080> 0
0118<RF3 QPS INTERLCK >0<9080> 0

```

Enter a new binary byte value over the displayed value on lines 2–5 and interrupt to cause that *byte* to be set.

Enter a new title and interrupt to set the new title for that bit.

Change the alarm flags and interrupt to establish new alarm flags.

Bit control

Interrupt in the area where the bit value is displayed to control the bit in several ways:

1. Interrupt with the cursor under the bit value (0 or 1) to toggle the bit value to the other state.
2. Type a new bit value (0 or 1) and interrupt with the cursor just after the character to set the new value.
3. Type a new value (2–9, A–Z, which implies 2–35) to pulse the bit hi for that number of 15 Hz cycles.
4. Type a period (".") to issue a short (20 μ sec) pulse.