TGC-Charge Monitoring System

Status UART CPLD

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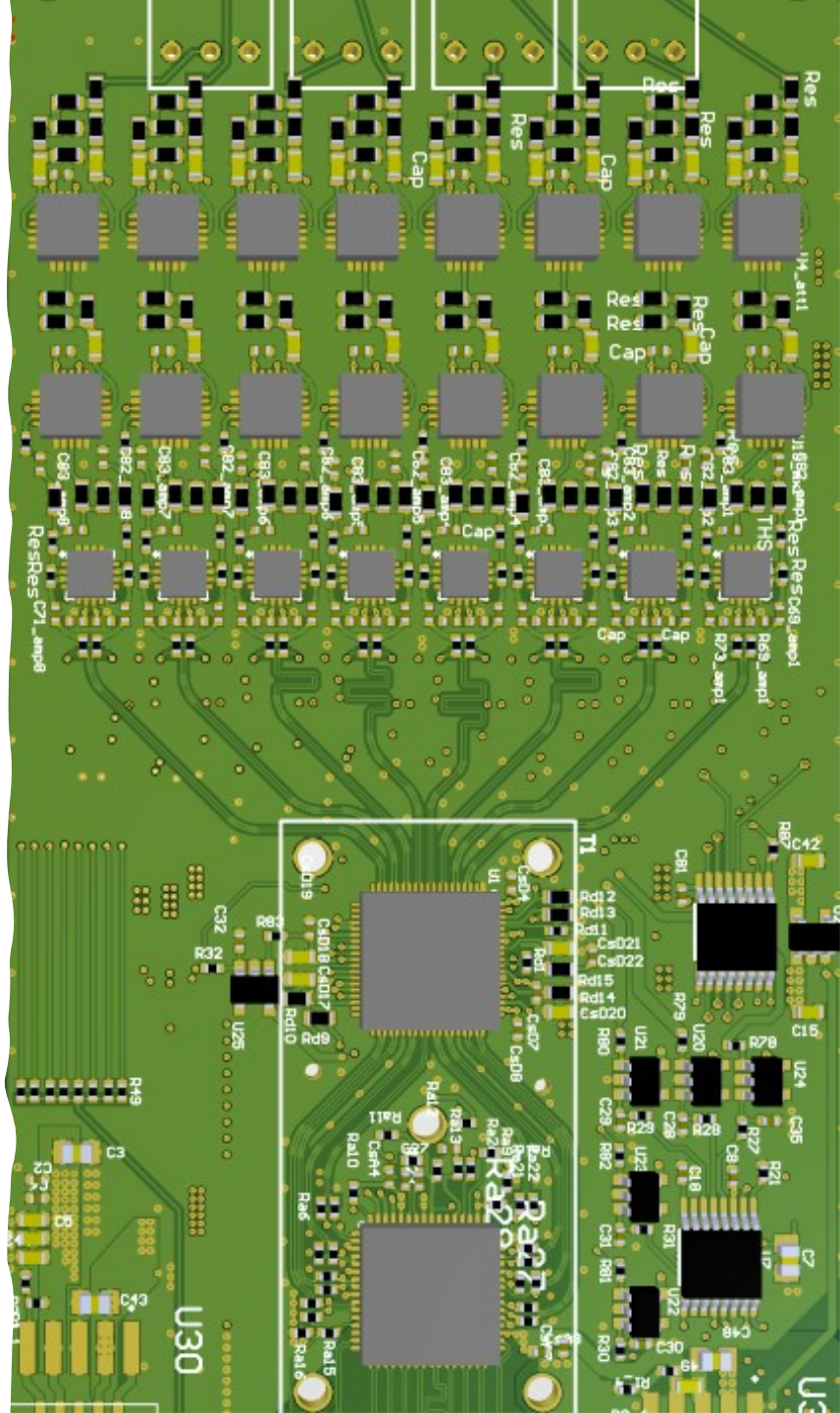
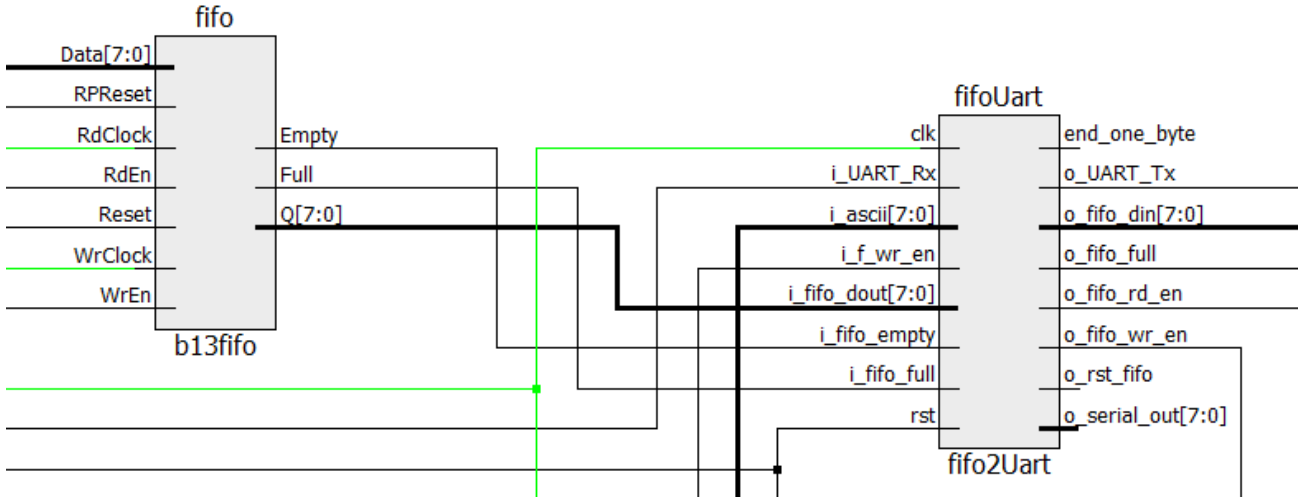
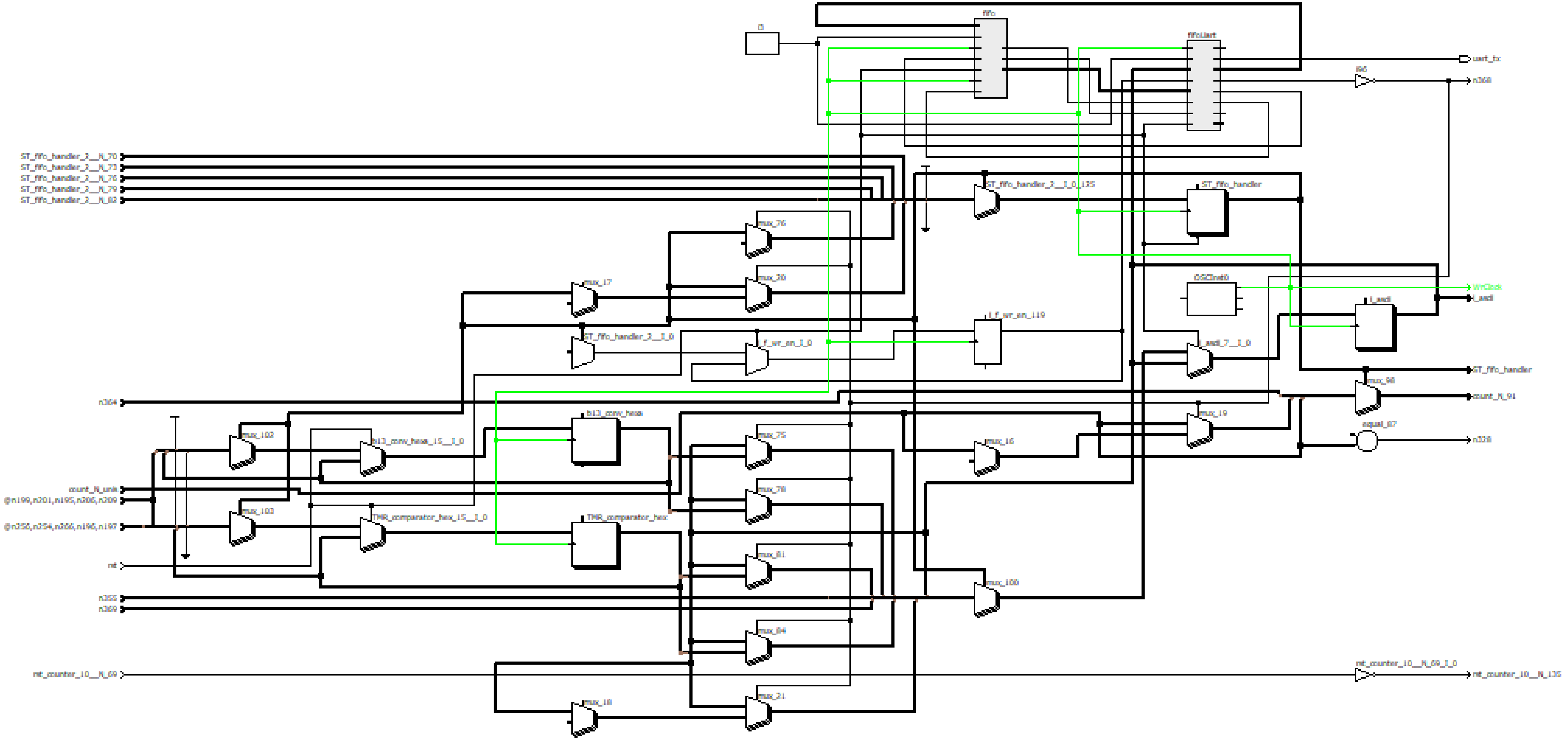


Block Diagram

- i_ascii controlled by logic from benchmark b13. The control will adjust depending on the size of the benchmark and works for 8



Schematic



Message description

- Message example : “#LABCD,1234,…*\n”
- # start of message
- L : LFSR TMR error status
- AB : Hexadecimal status of 16 b13 units
- CD : Hexadecimal status of TMR error comparator
- , : Next arrange of b13

Results

```
constant test_b13_out : std_logic_vector(N_UNITS-1 downto 0):=X"12345678";
constant test_comp_out : std_logic_vector(N_UNITS-1 downto 0):=X"9ABCDEF1";
----
type Fifo_handler_ST is (idle, start_msg, seq_1ch, seq_2ch, seq_3ch,seq_4ch,seq_next,seq_fin);
signal ST_fifo_handler : Fifo_handler_ST:= idle;
signal b13_conv_hexa: std_logic_vector (15 downto 0);
signal TMR_comparator_hex : std_logic_vector(15 downto 0);
signal count_N_unis : integer range 0 to N_UNITS/8;
SIGNAL flag_finish_b13 : STD_LOGIC := '1';
```

Important Note: this was test on the commercial breakout board

Message received in monitor serial:

```
15:49:34.320 -> #78F1,56DE,34BC,129A*
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15:49:34.320 -> #78F1,56DE,34BC,129A*
15:49:34.320 -> #78F1,56DE,34BC,129A*
15:49:34.646 -> #78F1,56DE,34BC,129A*
```