### CRV FEB FPGA Register Map (word addresses)

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There are four FPGAs on the FEB (part number xc7s50fgga484-2). The address space for each FPGA is offset by 0x400 from its neighbor. The region 0x300 to 0x3FF broadcasts to all FPFAs simultaneously.

0x000..0x2FF – FPGA1. CMB Inputs 1..4 *connected to HDMI inputs* 1..4

0x400..0x6FF – FPGA2. CMB Inputs 1..4 *connected to HDMI inputs* 5..8

0x800..0xAFF – FPGA3. CMB Inputs 1..4 *connected to HDMI inputs* 9..12

0xC00..0xEFF – FPGA4. CMB Inputs 1..4 *connected to HDMI inputs13*..16

### **0x022: Read/Write test Counter Bits 31...16**

A write to this address defines the upper 16 bits of the 32 bit test counter.   
A read returns the present value of the upper bits.

### **0x023: Read/Write test Counter Bits 15...0**

A write to this address defines the lower 16 bits of the 32 bit test counter.   
A read to this address displays the value of the lower bits and increments all 32 bits of the counter after the read.

### **0x024: One wire command register**

Bits 0..7: If an individual write transaction is requested, the lower eight bits of this register are sent to the one wire interface.

Bit 8: Start the read temperature sequencer. A complete read temperature sequence will execute when this bit is set. The read value of this bit will return a 0 until the sequence is complete.

Bit 9: Start the read ROM sequencer. A complete ROM read sequence will execute when this bit is set. The read value of this bit will return a 0 until the sequence is complete.

|  |  |  |  |
| --- | --- | --- | --- |
| 15..10 | 9 | 8 | 7..0 |
| Not Used | Read ROM | Read Temperature | Command Byte |

### **0x025: One wire control register**

Bit 0..3: Selects which CMB read data is stored in the register file

Bit 4: Request a write transaction

Bit 5: Request a read transaction

Bit 6: Request a reset transaction

Bit 7: Transaction status. Returns a ‘1’ when transaction is in progress

Bit 15..8: Transaction bitcount (N-1). For a write set to seven. For a 72 bit read set to 71.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 15..8 | 7 | 6 | 5 | 4 | 3..0 |
| Transaction bit count | Busy | Rst | Read | Write | CMB Sel |

**0x026..0x2A: One wire returned data register file**

The contents depend on the specifics of the one wire transaction