# **Gun Driver Assembly 0x8**

TM\_STATUS REGISTER (Can Rev 2)

|  |  |  |  |
| --- | --- | --- | --- |
| **Word 0 - Control Byte (bits 0:7)** | **Name** | **Description** | **Comment** |
| control\_0\_not\_ready | Modulator Not Ready | Trigger is not on because a fault, system not configured, or HV disable. | Is there a state machine for the gun driver? |
| control\_1\_can\_status | CAN Communication Lost | Communication timeout on the CAN bus | The Can module will clear this when the next SYNC is received. |
| control\_2\_fault\_not\_configured | Board waiting for Initial Configuration | Will Return 1 if the board is awaiting configuration |  |
| control\_3\_fault\_self\_check | Board Self Check Failed | Will Return 1 if the board has not passed self check |  |
| control\_4 |  |  |  |
| control\_5 | Reserved common status |  |  |
| control\_6 | Reserved common status |  |  |
| control\_7\_ecb\_can\_not\_active | Slave board communication loss | No Longer Used | No Longer Used |
| **Word 0 - Notice Byte ( bits 8:15)** | **Name** | **Description** | **Comment** |
| notice\_0 |  |  |  |
| notice\_1 |  |  |  |
| notice\_2 |  |  |  |
| notice\_3 |  |  |  |
| notice\_4 |  |  |  |
| notice\_5 |  |  |  |
| notice\_6 |  |  |  |
| notice\_7 |  |  |  |
| **Word 1 - Faults** |  |  |  |
| fault\_0 | Can Fault |  |  |
| fault\_1 | Bias Over Voltage Absolute |  | Cold Fault |
| fault\_2 | Bias Under Voltage Absolute |  | Cold Fault |
| fault\_3 | High Side Communication Loss |  | Cold Fault |
| fault\_4 | Over Voltage Top 1 Absolute |  | Warm Fault |
| fault\_5 | Under Voltage Top 1 Absolute |  | Warm Fault |
| fault\_6 | Over Voltage Top 2 Absolute |  | Warm Fault |
| fault\_7 | Under Voltage Top 2 Absolute |  | Warm Fault |
| fault\_8 | Heater over voltage |  |  |
| fault\_9 | Heater under voltage |  |  |
| fault\_A | Heater over current |  |  |
| fault\_B | Heater under current |  |  |
| fault\_C | Heater not ready |  |  |
| fault\_D |  |  |  |
| fault\_E |  |  |  |
| fault\_F |  |  |  |
|  |  |  |  |
| **Word 2 - Warning**  **Latched**  **Saved to Event Log** | This contains board Specific Information | **This is handled just like a fault with the exception that it does no inhibit operation.**  **It is logged the event log when set and logged when cleared** |  |
| warning\_0 |  |  |  |
| warning\_1 |  |  |  |
| warning\_2 |  |  |  |
| warning\_3 |  |  |  |
| warning\_4 |  |  |  |
| warning\_5 |  |  |  |
| warning\_6 |  |  |  |
| warning\_7 |  |  |  |
| warning\_8 |  |  |  |
| warning\_9 |  |  |  |
| warning\_A |  |  |  |
| warning\_B |  |  |  |
| warning\_C |  |  |  |
| warning\_D |  |  |  |
| warning\_E |  |  |  |
| warning\_F |  |  |  |
|  |  |  |  |
| **Word 3 - Status**  **Not Saved to Event Log** |  | **This is just used to display information on the GUI as Needed**  **Nothing is added to the event log** |  |
| status\_0 |  |  |  |
| status\_1 |  |  |  |
| status\_2 |  |  |  |
| status\_3 |  |  |  |
| status\_4 |  |  |  |
| status\_5 |  |  |  |
| status\_6 |  |  |  |
| status\_7 |  |  |  |
| status\_8 |  |  |  |
| status\_9 |  |  |  |
| status\_A |  |  |  |
| status\_B |  |  |  |
| status\_C |  |  |  |
| status\_D |  |  |  |
| status\_E |  |  |  |
| status\_F |  |  |  |

ETM\_CAN Registers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Address** | **Type** | **Description** | **Comment** |
| Grid Top Voltage Program Mode A/B Set Point | 0x8100 | SET\_1 | This sets the Pulse Top Voltage | Word 0 = Top 2 Top Voltage 1 bit = 10mV  Word 1 = Top 1 Top Voltage 1 bit = 10mV |
| Heater Voltage/Cathode Voltage Set Point | 0x8101 | SET\_1 | This sets the Heater Voltage and the Cathode Voltage | Word 0 = Heater Voltage, 1 bit = -1mV, 0 = 0V (0 V -> -65.535V) |
|  |  |  |  |  |

ETM\_CAN TX1/TX2 Transmit Registers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Address** | **Type** | **Description** | **Comment** |
| Status | N/A | Status | This is the status of the control Broad | TX1 |

Pulse by Pulse Logging Registers

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Packet ID** | **Refresh Rate** | **Word 3** | **Word 2** | **Word 1** | **Word 0** |
| 0x008 | N/A |  |  |  |  |
| 0x018 | N/A |  |  |  |  |
| 0x028 | N/A |  |  |  |  |
| 0x038 | N/A |  |  |  |  |

ETM\_LOG Slow Registers

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Packet ID** | **Refresh Rate** | **Word 3** | **Word 2** | **Word 1** | **Word 0** |
| 0x048 | 1Hz | Top1 Set Point | Top 1 Voltage Monitor | Top 1 Raw Voltage | Bias Set Point |
| 0x058 | 1Hz | Top2 Set Point | Top 2 Voltage Monitor | Top 2 Raw Voltage | Bias Vmon |
| 0x068 | 1Hz | Heater Voltage Set | Heater Vmon | Heater 1 Imon | Heater 2 Imon |
| 0x078 | 1Hz | 0x000 | 0x000 | 0x000 | 0x000 |
| 0x088 | 1Hz | 0x000 | 0x000 | 0x000 | 0x000 |
| 0x098 | 1Hz | 0x000 | 0x000 | 0x000 | 0x000 |

ECB Data Register

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Packet ID** | **Word 3** | **Word 2** | **Word 1** | **Word 0** |
| Log Data [0 -> 3] | Top1 Set Point | Top 1 Voltage Monitor | Top 1 Raw Voltage | Bias Set Point |
| Log Data [4 -> 7] | Top2 Set Point | Top 2 Voltage Monitor | Top 2 Raw Voltage | Bias Vmon |
| Log Data [8 -> 11] | Heater Voltage Set | Heater Vmon | Heater 1 Imon | Heater 2 Imon |
| Log Data [12 -> 15] | 0x000 | 0x000 | 0x000 | 0x000 |
| Log Data [16 -> 19] | 0x000 | 0x000 | 0x000 | 0x000 |
| Log Data [20 -> 23] | 0x000 | 0x000 | 0x000 | 0x000 |
|  |  |  |  |  |
| Local Data [0 -> 3] |  | Heater Voltage Set | Top2 Set Point | Top1 Set Point |
| Local Data [4 -> 7] | 0x0000 | 0x0000 | 0x0000 | 0x0000 |
| Local Data [8 -> 11] | 0x0000 | 0x0000 | 0x0000 | 0x0000 |
| Local Data [12 -> 15] | 0x0000 | 0x0000 | 0x0000 | 0x0000 |