Status

Functions in “Status.c” are designed to handle all the variables of STM system. This variables are created and stored within the code. They are to remember the latest values in registers of DSP and only used in one boot. Every time you restart the DSP code, they are to be reinitialized. With these variables, the software can easily acquire the all kinds of status on demand. Therefore you’d better not forget to refresh the variables after you edit some DSP register.

### *List of status global variables*

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| **Name** | **Size** | **Type** | **Note** |
| dacrange | 4 | Uint16 | DAC range status |
| lastdac | 16 | Uint16 | The last output data of all DAC channels |
| offset | 16 | Uint16 | Offset status of different range of bias output and I set |
| adcrange | 8 | Char | ADC range status |
| last20bit | 1 | Uint32 | The last output data of 20bit DAC |
| lastdigital | 14 | Char | Last digital output status  (Order: dither0, dither1, feedback, retract, coarse, rot,  xgain0, xgain1, ygain0, ygain1, zgain0, zgain1, zgain2, zgain3) |

### *Init value of status global variables*

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| **Variable** | **Initial value** | **Note** |
| dacrange | | |
| dacrange[0] | 0xAA9E | Bias range (+/- 5V), Bias offset range (+/- 2.5V) |
| dacrange[1] | 0xAAAA | Initial DAC range to +/- 10V |
| dacrange[2] | 0xAAAA | Initial DAC range to +/- 10V |
| dacrange[3] | 0xAEAA | Z offset fine range (+/- 2.5V) |
| lastdac | | |
| lastdac (all) | 0x8000 | Initial all DAC last output to mid-scale |
| offset | | |
| offset[0] | 0x803e | Bias 0 - 5V offset is 0x803e (≈2.5V) |
| offset[1] | 0x8042 | Bias 0 - 10V offset is 0x8042 (≈5V) |
| offset[2] | 0x804f | Bias 0 - 20V offset is 0x804f (≈10V) |
| offset[3] | 0x8000 | Initial offset to mid-scale (0V) |
| offset[4] | 0x8066 | Bias 0 - 40V offset is 0x8066 (≈20V) |
| offset[5] | 0x8000 | Initial offset to mid-scale (0V) |
| offset[6] | 0x8000 | Initial offset to mid-scale (0V) |
| offset[7] | 0x8000 | Initial offset to mid-scale (0V) |
| offset[8] | 0x8000 | Initial offset to mid-scale (0V) |
| offset[9] | 0x802e | Bias +/-5V offset is 0x802e (≈0V) |
| offset[10] | 0x802d | Bias +/-10V offset is 0x802d (≈0V) |
| offset[11] | 0x8000 | Initial offset to mid-scale (0V) |
| offset[12] | 0x804e | Bias +/-20V offset is 0x804e (≈0V) |
| offset[13] | 0x8000 | Initial offset to mid-scale (0V) |
| offset[14] | 0x8026 | Bias +/-2.5V offset is 0x8026 (≈0V) |
| offset[15] | 0x8167 | Iset offset is 0x8167 (≈0V) |

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| **Variable** | **Init value** | **Note** |
| last20bit | | |
| last20bit | 0x00080000 | Initial to mid-scale |
| lastdigital | | |
| lastdigital[0] | 0x00 | Dither0 is off |
| lastdigital[1] | 0x00 | Dither1 is off |
| lastdigital[3] | 0x00 | Retract is off |
| lastdigital[5] | 0x00 | Translation mode |