Digital

**gain\_DSP**

This function change X, Y, Z1, Z2 gain on PC's command.

PC command = channel (MSB 1~4) + d0 (LSB 2) + d1 (LSB 1)

**digitalScan\_DSP**

This function set up digital outputs for scan or tip approach on PC's command. Scan mode and Tip approach mode are distinguished by the last bit of PC’s command.

### *Lastdigital variable*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Function** | **Available value** | **Scan init\_val** | **Tip appr init\_val** |
| lastdigital[0] | dither0  (bias dither) | ON (1), OFF (0) | OFF | OFF |
| lastdigital[1] | dither1  (z dither) | ON (1), OFF (0) | OFF | OFF |
| lastdigital[2] | feedback | ON (1), OFF (0) | ON | ON |
| lastdigital[3] | retract | ON (1), OFF (0) | OFF | OFF |
| lastdigital[4] | coarse | Coarse (1), Fine (0) | fine mode  (Pin 5/10/15 = 0) | coarse mode  (Pin 5/10/15 = 10 \* ZOUTER) |
| lastdigital[5] | translation | Translation (1), Rotation (0) | Translation | Rotation |
| lastdigital[6] | xgain0 | 10.0 (0), 1.0 (1), 0.1 (3) | 1 | 10.0 |
| lastdigital[7] | xgain1 |  | 1 | 1 |
| lastdigital[8] | ygain0 | 10.0 (0), 1.0 (1), 0.1 (3) | 1 | 10.0 |
| lastdigital[9] | ygain1 |  | 1 | 1 |
| lastdigital[10] | zgain0 | 10.0 (3), 1.0 (1), 0.1 (0) | 1 | 0.1 |
| lastdigital[11] | zgain1 |  | 1 | 1 |
| lastdigital[12] | zgain2 | 10.0 (0), 1.0 (1), 0.1 (3) | 1 | 10.0 |
| lastdigital[13] | zgain3 |  | 1 | 1 |