# SensorTag attribute table

TI Base UUID: F000**XXXX**-0451-4000-B000-000000000000. 128-but UUIDs are typed **'bold blue'**

| Handle (hex) | Handle (dec) | Type (hex) | Type (text) | Hex value | GATT Server Permissions | Description/Value (text) |
|---|---|---|---|---|---|---|
| 0x1 | 1 | 0x2800 | GATT Primary Service Declaration | 0x1800 | R | Generic Access Service |
| 0x2 | 2 | 0x2803 | GATT Characteristic Declaration | 02:03:00:00:2A | R | Device Name |
| 0x3 | 3 | 0x2A00 | Device Name | 54:49:20:42:4C:45:20:53:65:6E:73:6F:72:20:54:61:67 | R | TI BLE Sensor Tag |
| 0x4 | 4 | 0x2803 | GATT Characteristic Declaration | 02:05:00:01:2A | R | Appearance |
| 0x5 | 5 | 0x2A01 | Appearance | 00:00 | R | |
| 0x6 | 6 | 0x2803 | GATT Characteristic Declaration | 0A:07:00:02:2A | R | Peripheral Privacy Flag |
| 0x7 | 7 | 0x2A02 | Peripheral Privacy Flag | 00 | RW | |
| 0x8 | 8 | 0x2803 | GATT Characteristic Declaration | 08:09:00:03:2A | R | Reconnection Address |
| 0x9 | 9 | 0x2A03 | Reconnection Address | | W | |
| 0xA | 10 | 0x2803 | GATT Characteristic Declaration | 02:0B:00:04:2A | R | Peripheral Preferred Connection Parameters |
| 0xB | 11 | 0x2A04 | Peripheral Preferred Connection Parameters | 50:00:A0:00:00:00:E8:03 | R | P |
| 0xC | 12 | 0x2800 | GATT Primary Service Declaration | 0x1801 | R | Generic Attribute Service |
| 0xD | 13 | 0x2803 | GATT Characteristic Declaration | 20:0E:00:05:2A | R | Service Changed |
| 0xE | 14 | 0x2A05 | Service Changed | | I | |
| 0xF | 15 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | Write "01:00" to enable notifications, "00:00" to disable |

| 0x10 | 16 | 0x2800 | GATT Primary Service Declaration | 0x180A | R | Device Information Service |
|------|----|--------|----------------------------------|---------|---|---------------------------|
| 0x11 | 17 | 0x2803 | GATT Characteristic Declaration | 02:12:00:23:2A | R | System ID |
| 0x12 | 18 | 0x2A23 | System ID | 60:E2:B1:00:00:EB:D7:90 | R | ` |
| 0x13 | 19 | 0x2803 | GATT Characteristic Declaration | 02:14:00:24:2A | R | Model Number String |
| 0x14 | 20 | 0x2A24 | Model Number String | 4E:2E:41:2E:00 | R | N.A. |
| 0x15 | 21 | 0x2803 | GATT Characteristic Declaration | 02:16:00:25:2A | R | Serial Number String |
| 0x16 | 22 | 0x2A25 | Serial Number String | 4E:2E:41:2E:00 | R | N.A. |
| 0x17 | 23 | 0x2803 | GATT Characteristic Declaration | 02:18:00:26:2A | R | Firmware Revision String |
| 0x18 | 24 | 0x2A26 | Firmware Revision String | 31:2E:35:20:28:4F:63:74:20:32:33:20:32:30:31:33:29:00 | R | 1.5 (Oct 23 2013) |
| 0x19 | 25 | 0x2803 | GATT Characteristic Declaration | 02:1A:00:27:2A | R | Hardware Revision String |
| 0x1A | 26 | 0x2A27 | Hardware Revision String | 4E:2E:41:2E:00 | R | N.A. |
| 0x1B | 27 | 0x2803 | GATT Characteristic Declaration | 02:1C:00:28:2A | R | Software Revision String |
| 0x1C | 28 | 0x2A28 | Software Revision String | 4E:2E:41:2E:00 | R | N.A. |
| 0x1D | 29 | 0x2803 | GATT Characteristic Declaration | 02:1E:00:29:2A | R | Manufacturer Name String |
| 0x1E | 30 | 0x2A29 | Manufacturer Name String | 54:65:78:61:73:20:49:6E:73:74:72:75:6D:65:6E:74:73:00 | R | Texas Instruments |
| 0x1F | 31 | 0x2803 | GATT Characteristic Declaration | 02:20:00:2A:2A | R | IEEE 11073-20601 Regulatory Certification Data List |
| 0x20 | 32 | 0x2A2A | IEEE 11073-20601 Regulatory | FE:00:65:78:70:65:72:69:6D:65:6E:74:61:6C | R | experimental |

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|---|---|---|---|---|---|---|---|
| | | | Certification Data List | | | | |
| 0x21 | 33 | 0x2803 | GATT Characteristic Declaration | 02:22:00:50:2A | R | | PnP ID |
| 0x22 | 34 | 0x2A50 | PnP ID | 01:0D:00:00:00:10:01 | R | | |
| 0x23 | 35 | 0x2800 | GATT Primary Service Declaration | F000AA00-0451-4000-B000-000000000000 | R | | IR Temperature Service |
| 0x24 | 36 | 0x2803 | GATT Characteristic Declaration | 12:25:00:00:00:00:00:00:00:00:B0:00:40:51:04:01:AA:00:F0 | R | | IR Temperature Data |
| 0x25 | 37 | **0xAA01** | IR Temperature Data | 00:00:00:00 | RN | | ObjectLSB:ObjectMSB:AmbientLSB:AmbientMSB |
| 0x26 | 38 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | | Write "01:00" to enable notifications, "00:00" to disable |
| 0x27 | 39 | 0x2901 | Characteristic User Description | 54:65:6D:70:2E:20:44:61:74:61 | R | | Temp. Data |
| 0x28 | 40 | 0x2803 | GATT Characteristic Declaration | 0A:29:00:00:00:00:00:00:00:00:B0:00:40:51:04:02:AA:00:F0 | R | | IR Temperature Config |
| 0x29 | 41 | **0xAA02** | IR Temperature Config | 00 | RW | | Write "01" to start Sensor and Measurements, "00" to put to sleep |
| 0x2A | 42 | 0x2901 | Characteristic User Description | 54:65:6D:70:2E:20:43:6F:6E:66:2E | R | | Temp. Conf. |
| 0x2B | 43 | 0x2803 | GATT Characteristic Declaration | 0A:2C:00:00:00:00:00:00:00:00:B0:00:40:51:04:03:AA:00:F0 | R | | IR Temperature Period |
| 0x2C | 44 | **0xAA03** | IR Temperature Period | 64 | RW | | Period = [Input*10] ms, (lower limit 300 ms), default 1000 ms |
| 0x2D | 45 | 0x2901 | Characteristic User Description | 54:65:6D:70:2E:20:50:65:72:69:6F:64 | R | | Temp. Period |
| 0x2E | 46 | 0x2800 | GATT Primary Service Declaration | F000AA10-0451-4000-B000-000000000000 | R | | Accelerometer Service |
| 0x2F | 47 | 0x2803 | GATT Characteristic Declaration | 12:30:00:00:00:00:00:00:00:00:B0:00:40:51:04:11:AA:00:F0 | R | | Accelerometer Data |
| 0x30 | 48 | **0xAA11** | Accelerometer Data | 00:00:00 | RN | | X : Y : Z Coordinates |
| 0x31 | 49 | 0x2902 | Client Characteristic | 00:00 | RW | | Write "01:00" to enable notifications, "00:00" to disable |

|  |  |  |  | Configuration |  |  |
|---|---|---|---|---|---|---|
| 0x32 | 50 | 0x2901 | Characteristic User Description | 41:63:63:65:6C:2E:20:44:61:74:61 | R | Accel. Data |
| 0x33 | 51 | 0x2803 | GATT Characteristic Declaration | 0A:34:00:00:00:00:00:00:00:00:B0:00:40:51:04:12:AA:00:F0 | R | Accelerometer Config |
| 0x34 | 52 | **0xAA12** | Accelerometer Config | 00 | RW | Write "01" to select range 2G, "02" for 4G, "03" for 8G, "00" disable sensor |
| 0x35 | 53 | 0x2901 | Characteristic User Description | 41:63:63:65:6C:2E:20:43:6F:6E:66:2E | R | Accel. Conf. |
| 0x36 | 54 | 0x2803 | GATT Characteristic Declaration | 0A:37:00:00:00:00:00:00:00:00:B0:00:40:51:04:13:AA:00:F0 | R | Accelerometer Period |
| 0x37 | 55 | **0xAA13** | Accelerometer Period | 64 | RW | Period = [Input*10] ms, (lower limit 100ms), default 1000 ms |
| 0x38 | 56 | 0x2901 | Characteristic User Description | 41:63:63:65:6C:2E:20:50:65:72:69:6F:64 | R | Accel. Period |
| 0x39 | 57 | 0x2800 | GATT Primary Service Declaration | F000AA20-0451-4000-B000-000000000000 | R | Humidity Service |
| 0x3A | 58 | 0x2803 | GATT Characteristic Declaration | 12:3B:00:00:00:00:00:00:00:00:B0:00:40:51:04:21:AA:00:F0 | R | Humidity Data |
| 0x3B | 59 | **0xAA21** | Humidity Data | 00:00:00:00 | RN | TempLSB:TempMSB:HumidityLSB:HumidityMSB |
| 0x3C | 60 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | Write "01:00" to enable notifications, "00:00" to disable |
| 0x3D | 61 | 0x2901 | Characteristic User Description | 48:75:6D:69:64:2E:20:44:61:74:61 | R | Humid. Data |
| 0x3E | 62 | 0x2803 | GATT Characteristic Declaration | 0A:3F:00:00:00:00:00:00:00:00:B0:00:40:51:04:22:AA:00:F0 | R | Humidity Config |
| 0x3F | 63 | **0xAA22** | Humidity Config | 00 | RW | Write "01" to start measurements, "00" to stop |
| 0x40 | 64 | 0x2901 | Characteristic User Description | 48:75:6D:69:64:2E:20:43:6F:6E:66:2E | R | Humid. Conf. |
| 0x41 | 65 | 0x2803 | GATT Characteristic Declaration | 0A:42:00:00:00:00:00:00:00:00:B0:00:40:51:04:23:AA:00:F0 | R | Humidity Period |
| 0x42 | 66 | **0xAA23** | Humidity Period | 64 | RW | Period = [Input*10] ms, (lower limit 100 ms), default 1000 ms |

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|---|---|---|---|---|---|---|---|
| 0x43 | 67 | 0x2901 | Characteristic User Description | 48:75:6D:69:64:2E:20:50:65:72:69:6F:64 | R | Humid. Period |
| 0x44 | 68 | 0x2800 | GATT Primary Service Declaration | F000AA30-0451-4000-B000-000000000000 | R | Magnetometer Service |
| 0x45 | 69 | 0x2803 | GATT Characteristic Declaration | 12:46:00:00:00:00:00:00:00:00:B0:00:40:51:04:31:AA:00:F0 | R | Magnetometer Data |
| 0x46 | 70 | **0xAA31** | Magnetometer Data | 00:00:00:00:00:00 | RN | XLSB:XMSB:YLSB:YMSB: ZLSB:ZMSB Coordinates |
| 0x47 | 71 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | Write "01:00" to enable notifications, "00:00" to disable |
| 0x48 | 72 | 0x2901 | Characteristic User Description | 4D:61:67:6E:2E:20:44:61:74:61 | R | Magn. Data |
| 0x49 | 73 | 0x2803 | GATT Characteristic Declaration | 0A:4A:00:00:00:00:00:00:00:00:B0:00:40:51:04:32:AA:00:F0 | R | Magnetometer Config |
| 0x4A | 74 | **0xAA32** | Magnetometer Config | 00 | RW | Write "01" to start Sensor and Measurements, "00" to put to sleep |
| 0x4B | 75 | 0x2901 | Characteristic User Description | 4D:61:67:6E:2E:20:43:6F:6E:66:2E | R | Magn. Conf. |
| 0x4C | 76 | 0x2803 | GATT Characteristic Declaration | 0A:4D:00:00:00:00:00:00:00:00:B0:00:40:51:04:33:AA:00:F0 | R | Magnetometer Period |
| 0x4D | 77 | **0xAA33** | Magnetometer Period | C8 | RW | Period = [Input*10]ms (lower limit 100ms), default 2000ms |
| 0x4E | 78 | 0x2901 | Characteristic User Description | 4D:61:67:6E:2E:20:50:65:72:69:6F:64 | R | Magn. Period |
| 0x4F | 79 | 0x2800 | GATT Primary Service Declaration | F000AA40-0451-4000-B000-000000000000 | R | Barometer Service |
| 0x50 | 80 | 0x2803 | GATT Characteristic Declaration | 12:51:00:00:00:00:00:00:00:00:B0:00:40:51:04:41:AA:00:F0 | R | Barometer Data |
| 0x51 | 81 | **0xAA41** | Barometer Data | 00:00:00:00 | RN | TempLSB:TempMSB:PressureLSB:PressureMSB |
| 0x52 | 82 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | Write "01:00" to enable notifications, "00:00" to disable |
| 0x53 | 83 | 0x2901 | Characteristic User | 42:61:72:6F:6D:2E:20:44:61:74:61 | R | Barom. Data |

| | | | Description | | | |
|---|---|---|---|---|---|---|
| 0x54 | 84 | 0x2803 | GATT Characteristic Declaration | 0A:55:00:00:00:00:00:00:00:00:B0:00:40:51:04:42:AA:00:F0 | R | Barometer Configuration |
| 0x55 | 85 | **0xAA42** | Barometer Configuration | 00 | RW | Write "01" to start Sensor and Measurements, "00" to put to sleep, "02" to read calibration values from sensor |
| 0x56 | 86 | 0x2901 | Characteristic User Description | 42:61:72:6F:6D:2E:20:43:6F:6E:66:2E | R | Barom. Conf. |
| 0x57 | 87 | 0x2803 | GATT Characteristic Declaration | 0A:58:00:00:00:00:00:00:00:00:B0:00:40:51:04:44:AA:00:F0 | R | Barometer Period |
| 0x58 | 88 | **0xAA44** | Barometer Period | 64 | RW | Period = [Input*10] ms, (lower limit 100 ms), default 1000 ms |
| 0x59 | 89 | 0x2901 | Characteristic User Description | 42:61:72:6F:6D:2E:20:50:65:72:69:6F:64 | R | Barom. Period |
| 0x5A | 90 | 0x2803 | GATT Characteristic Declaration | 02:5B:00:00:00:00:00:00:00:00:B0:00:40:51:04:43:AA:00:F0 | R | Barometer Calibration |
| 0x5B | 91 | **0xAA43** | Barometer Calibration | 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00 | R | When write "02" to Barometer conf. has been issued, the calibration values is found here. |
| 0x5C | 92 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | Write "01:00" to enable notifications, "00:00" to disable |
| 0x5D | 93 | 0x2901 | Characteristic User Description | 42:61:72:6F:6D:2E:20:43:61:6C:69:62:72:2E | R | Barom. Calibr. |
| 0x5E | 94 | 0x2800 | GATT Primary Service Declaration | F000AA50-0451-4000-B000-000000000000 | R | Gyroscope Service |
| 0x5F | 95 | 0x2803 | GATT Characteristic Declaration | 12:60:00:00:00:00:00:00:00:00:B0:00:40:51:04:51:AA:00:F0 | R | Gyroscope Data |
| 0x60 | 96 | **0xAA51** | Gyroscope Data | 00:00:00:00:00:00 | RN | XLSB:XMSB:YLSB:YMSB: ZLSB:ZMSB |
| 0x61 | 97 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | Write "01:00" to enable notifications, "00:00" to disable |
| 0x62 | 98 | 0x2901 | Characteristic User Description | 47:79:72:6F:20:44:61:74:61 | R | Gyro Data |
| 0x63 | 99 | 0x2803 | GATT Characteristic Declaration | 0A:64:00:00:00:00:00:00:00:00:B0:00:40:51:04:52:AA:00:F0 | R | Gyroscope Config |
| 0x64 | 100 | **0xAA52** | Gyroscope Config | 00 | RW | Write 0 to turn off gyroscope, 1 to enable X axis only, 2 to enable Y axis only, 3 = X and Y, 4 = Z only, 5 = X and Z, 6 = Y |

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|---|---|---|---|---|---|---|---|
| | | | | | | | and Z, 7 = X, Y and Z |
| 0x65 | 101 | 0x2901 | Characteristic User Description | 47:79:72:6F:20:43:6F:6E:66:2E | | R | Gyro Conf. |
| 0x66 | 102 | 0x2803 | GATT Characteristic Declaration | 0A:67:00:00:00:00:00:00:00:B0:00:40:51:04:53:AA:00:F0 | | R | Gyroscope Period |
| 0x67 | 103 | **0xAA53** | Gyroscope Period | 64 | | RW | Period = [Input*10]ms (lower limit 100ms), default 1000ms |
| 0x68 | 104 | 0x2901 | Characteristic User Description | 47:79:72:6F:20:50:65:72:69:6F:64 | | R | Gyro Period |
| 0x69 | 105 | 0x2800 | GATT Primary Service Declaration | 0xFFE0 | | R | Simple Keys Service |
| 0x6A | 106 | 0x2803 | GATT Characteristic Declaration | 10:6B:00:E1:FF | | R | Key press state |
| 0x6B | 107 | 0xFFE1 | Key press state | | | N | |
| 0x6C | 108 | 0x2902 | Client Characteristic Configuration | 00:00 | | RW | Write "01:00" to enable notifications, "00:00" to disable |
| 0x6D | 109 | 0x2901 | Characteristic User Description | 4B:65:79:20:50:72:65:73:73:20:53:74:61:74:65 | | R | Key Press State |
| 0x6E | 110 | 0x2800 | GATT Primary Service Declaration | F000AA60-0451-4000-B000-000000000000 | | R | Test Service |
| 0x6F | 111 | 0x2803 | GATT Characteristic Declaration | 02:70:00:00:00:00:00:00:00:B0:00:40:51:04:61:AA:00:F0 | | R | Test Data |
| 0x70 | 112 | **0xAA61** | Test Data | 3F:00 | | R | Self-test results (high bit indicates PASSED): Bit 0:IR temp, 1:Humidity, 2:Magnetometer, 3:accelerometer, 4:Barometer, 5:Gyroscope |
| 0x71 | 113 | 0x2901 | Characteristic User Description | 54:65:73:74:20:44:61:74:61 | | R | Test Data |
| 0x72 | 114 | 0x2803 | GATT Characteristic Declaration | 0A:73:00:00:00:00:00:00:00:B0:00:40:51:04:62:AA:00:F0 | | R | Test Config |
| 0x73 | 115 | **0xAA62** | Test Config | 00 | | RW | bit 7: enable test mode; bit 0-1 LED bit mask |
| 0x74 | 116 | 0x2901 | Characteristic User Description | 54:65:73:74:20:43:6F:6E:66:69:67 | | R | Test Config |
| | | | | | | | |

| 0x75 | 117 | 0x2800 | GATT Primary Service Declaration | F000CCC0-0451-4000-B000-000000000000 | R | Connection Control Service |
|------|-----|--------|----------------------------------|--------------------------------------|---|----------------------------|
| 0x76 | 118 | 0x2803 | GATT Characteristic Declaration | 12:77:00:00:00:00:00:00:00:00:B0:00:40:51:04:C1:CC:00:F0 | R | Connection Parameters |
| 0x77 | 119 | 0xCCC1 | Connection Parameters | 10:00:00:00:32:00 | RN | ConnInterval,SlaveLatency,SupervisionTimeout (2 bytes each) |
| 0x78 | 120 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | Write "01:00" to enable notifications, "00:00" to disable |
| 0x79 | 121 | 0x2901 | Characteristic User Description | 43:6F:6E:6E:2E:20:50:61:72:61:6D:73 | R | Conn. Params |
| 0x7A | 122 | 0x2803 | GATT Characteristic Declaration | 08:7B:00:00:00:00:00:00:00:00:B0:00:40:51:04:C2:CC:00:F0 | R | Request Connection Parameters |
| 0x7B | 123 | 0xCCC2 | Request Connection Parameters | | W | MinConnInterval,MaxConnInterval,SlaveLatency,SupervisionTimeout (2 bytes each) |
| 0x7C | 124 | 0x2901 | Characteristic User Description | 43:6F:6E:6E:2E:20:50:61:72:61:6D:73:20:52:65:71 | R | Conn. Params Req |
| 0x7D | 125 | 0x2803 | GATT Characteristic Declaration | 08:7E:00:00:00:00:00:00:00:00:B0:00:40:51:04:C3:CC:00:F0 | R | Disconnect request |
| 0x7E | 126 | 0xCCC3 | Disconnect request | | W | Change the value to disconnect |
| 0x7F | 127 | 0x2901 | Characteristic User Description | 44:69:73:63:6F:6E:6E:65:63:74:20:52:65:71 | R | Disconnect Req |
| 0x80 | 128 | 0x2800 | GATT Primary Service Declaration | F000FFC0-0451-4000-B000-000000000000 | R | OAD Service |
| 0x81 | 129 | 0x2803 | GATT Characteristic Declaration | 1C:82:00:00:00:00:00:00:00:00:B0:00:40:51:04:C1:FF:00:F0 | R | OAD Image Identify |
| 0x82 | 130 | 0xFFC1 | OAD Image Identify | | WN | Write '0' to identify image type 'A', '1' to identify 'B'. Data in notfication 8 bytes: image type (2), size/4 (2), user data (4). |
| 0x83 | 131 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | Write "01:00" to enable notifications, "00:00" to disable |
| 0x84 | 132 | 0x2901 | Characteristic User Description | 49:6D:67:20:49:64:65:6E:74:69:66:79 | R | Img Identify |

| 0x85 | 133 | 0x2803 | GATT Characteristic Declaration | 1C:86:00:00:00:00:00:00:00:B0:00:40:51:04:C2:FF:00:F0 | R | OAD Image Block |
| 0x86 | 134 | **0xFFC2** | OAD Image Block | | WN | Image block (18 bytes). Block no. (2 bytes), OAD image block (16 bytes) |
| 0x87 | 135 | 0x2902 | Client Characteristic Configuration | 00:00 | RW | Write "01:00" to enable notifications, "00:00" to disable |
| 0x88 | 136 | 0x2901 | Characteristic User Description | 49:6D:67:20:42:6C:6F:63:6B | R | Img Block |