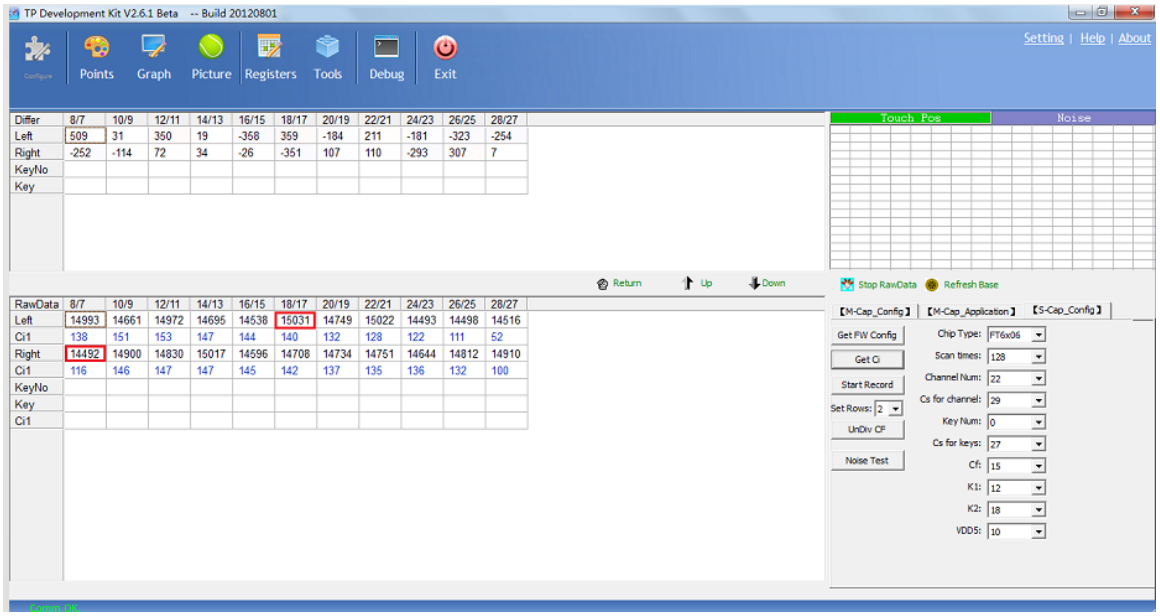
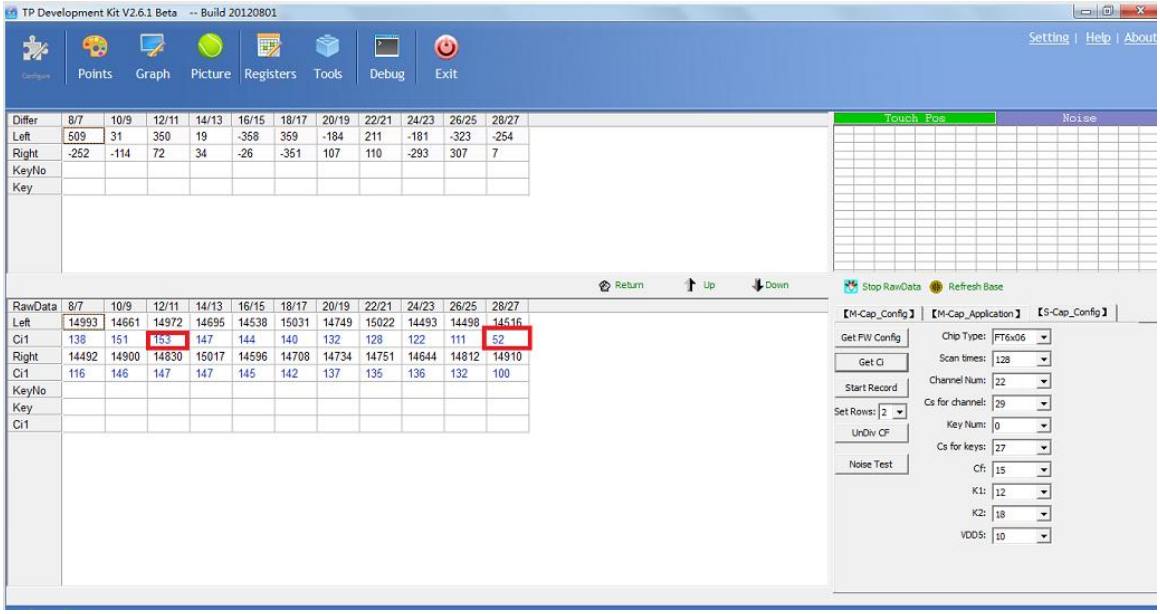
1. Touch Screen Adjusting Theory
   (1) First configure number of channels and the order
   (2) Then adjust AFE(Analog Front End) related parameters to make Raw Data and CI value meet the defined standard.
   (3) After Raw Data and CI adjustment, do filter function delicate adjustment.

   Raw Data:



   CI value:



2. Screen parameters
   1) IC model number
      FT6206. It supports 28 channels at the most

```
/*================================================================================
 * Step No. 1
 * Select the IC type
 * 6206 or 6306
 *================================================================================*/
#define FT6206
//#define FT6306
```

2) Communication protocol

I2C communication protocol. It supports 400k bit/s at the most

```
/*=============================================================================
 * 6x06 can only support IIC protocal now
 *============================================================================*/
/* Config the Host Interface */
#define IICEN
```

3) Factory ID and project information

Factory ID ranges from 0x01 to 0xFE.

Project information:

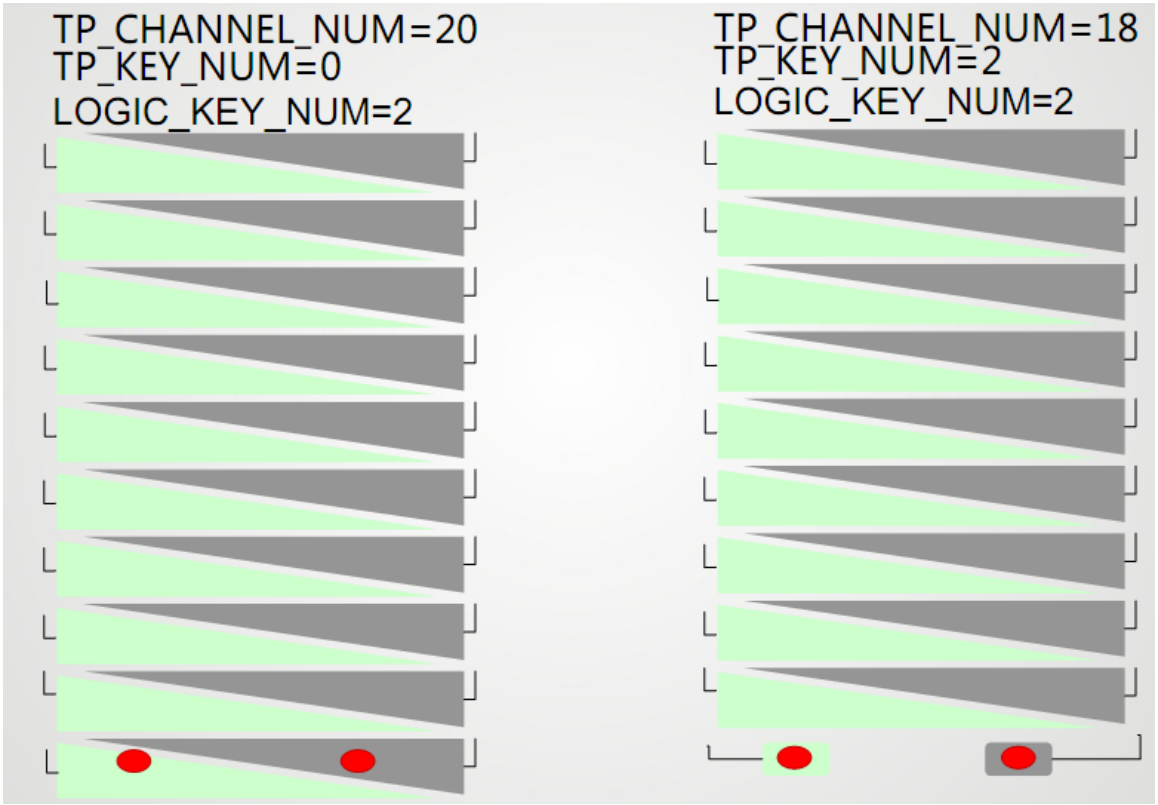
– CFG_PROJECT_CODE: Supports 31 characters at the most (‘\0’ is not included)

– CFG_CUSTOMER_CODE: Supports 7 characters at the most (‘\0’ is not included)

```
/*=============================================================================
 * Step No. 2
 * Set the panel vendor ID and customer project info
 *============================================================================*/
#define CFG_PANEL_VENDOR_ID      0x11
#define CFG_PROJECT_CODE         "FTS0000P000"
#define CFG_CUSTOMER_CODE        "000"
```

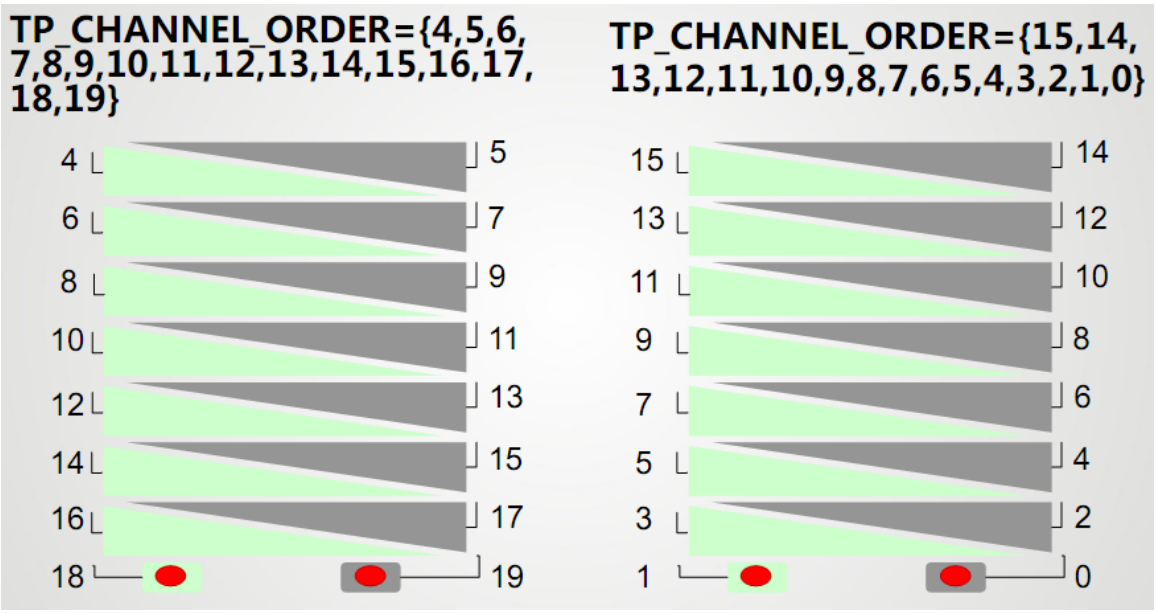
4) I2C address: 0x01~0xFE (IC address: 0X70 0X72)

5) Number of Channels



6) TP channel scan order

```
/*
 * IC Channel Order
 *
 * The total member number in this array should be equal with
 * "TP_CHANNEL_NUM + TP_KEY_NUM".
 * The index in this array is the real IC channel index, and the valid index range is from 0 to 27
 *
 * It shows the scan order for all the used channels.
 *
 * VA area:
 * For triangle pattern, there are two channels in one row for VA Area.
 * They are left channel and right channel, we defined them as "Channel Pair"
 * The order rule for TP_CHANNEL_ORDER is "Chanels Pair order is from defined top to
 * defined bottom. Channel order in the pair is from defined left to defined right"
 * Virtual key area: (In the case that the virtual key channel is seperated with VA area channels)
 * The virtual key channels should be in the end of the array because we expect
 * they should be scaned at last and the order should be from left to right.
 */
#define TP_CHANNEL_ORDER        {7,6,9,8,11,10,13,12,15,14,17,16,19,18,21,20,23,22,25,24,27,26}
```



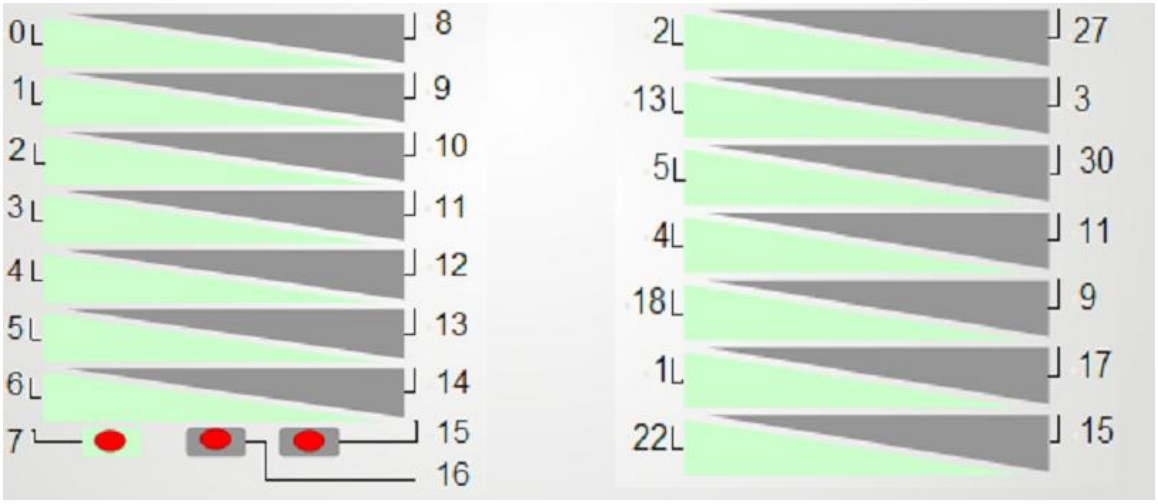
Single side:

TP_CHANNEL_ORDER={0,8,1,9,2,10,3,1
1,4,12,5,13,6,14,7,16,15}

TP_CHANNEL_ORDER={2,27,13,3,5,30
,4,11,18,9,1,17,22,15}

Double side:

TP_CHANNEL_ORDER={0,8,1,9,2,10,3,1
1,4,12,5,13,6,14,7,16,15,17(Add an unused channel)}



7) Scan Method

```
/*
 * AFE Scan single/double mode
 * 0: Single mode
 * 1: Double mode(Scan two channels at one time)
 * "Double mode" will improve the anti power noise ability
 * Usually use 1(Double mode) as default
 */
#define AFE_SCAN_MODE           1
```

8) Scan Times

```
/*
 * Seleted sensor scan times for every channel, we will get the ACC value of
 * all times for the raw data
 * 3 -> 64 times scan, 4 -> 128 times scan; 5 -> 256 times scan
 * More scan times will get more accuracy, but lower report rate.
 * Usually use 3 as default for Single mode and 4 as default for double mode
 */
#define AFE_SAMPLE_CYCLE        4
```

9) Water-proof

```
/*
 * AFE water proof scan mode
 * 0: Disable water proof scan mode
 * 1: Enable water proof scan mode
 * Usually use 1(Enable) as default
 */
#define AFE_WATERPROOF_EN       1

#if (1 == AFE_WATERPROOF_EN)
/*
 * AFE water proof level selection
 * 0: No Water proof;
 * 1: Level 1;
 * 2: Level 2;
 * 3: Level 3;
 * Usually use 3(Level 3) as default
 */
#define AFE_WATERPROOF_LVL      3
#endif
```

10) VDD5 voltage

```
/*
 * VDD5 voltage selection
 * 0~12 -> 3.25V~5.65V (0.2V every step)
 * Usually use 10(5.25V) as default
 */
#define VDD5_VOL_SEL                10
```

11) Touch threshold

```
/*
 * Touch threshold
 * We will report point if the differ value of (LEFT_CH + RIGHT+CH)
 * is larger than RV_G_THGROUP
 * The range is from 0 to 16320.
 */
#define RV_G_THGROUP                3000
```

12) CS value

```
/*
 * CS value for channels
 * Modified this value to make the smallest CI value for VA area channels
 * is around 50 after auto calibration
 */
#define CHANNEL_BASE_VAL_SET    27

/*
 * CS value for virtual key channel
 * Modified this value to make the smallest CI value for key channels is
 * around 50 after auto calibration
 */
#define KEY_BASE_VAL_SET        27
```