Safety

General

This equipment has been designed to meet the requirements of EN61010-1 'Safety requirements for electrical equipment for measurement, control & laboratory use' and has left the factory in a safe condition.
The following definitions in EN61010-1 are applicable:

OPERATOR	Person operating equipment for its intended purpose. **Note: The OPERATOR should have received training appropriate for this purpose.**
RESPONSIBLE BODY	Individual or group responsible for the use and maintenance of equipment and for ensuring that operators are adequately trained.

The RESPONSIBLE BODY must ensure that this equipment is only used in the manner specified. If it is not used in such a manner, the protection provided by the equipment may be impaired.
This product is not intended for use in atmospheres which are explosive, corrosive or adversely polluted (e.g. containing conductive or excessive dust). It is not intended for use in safety critical or medical applications.
The equipment can cause hazards if not used in accordance with these instructions. Read them carefully and follow them in all respects.
Do not use the equipment if it is damaged. In such circumstances the equipment must be made inoperative and secured against any unintentional operation.

MICROTEST CORP. and the associated sales organizations accept no responsibility for personal or material damage, or for any consequential damage that results from irresponsible or unspecified operation or misuse of this equipment.

Contents

CHAPTER 1. BEFORE USE

WARNING!

-This equipment is intended for use by suitably trained and competent person.

-This product is capable of having hazardous voltages of 6000V DC for testing, appropriate precautions should be taken for safety.

-This product can cause hazards if it is not used in accordance with these instructions.

Read them carefully and follow them in all respects. Double-check connections to the unit before use.

DO NOT USE THIS EQUIPMENT IF IT IS DAMAGED.

1.1 ELECTRIC SHOCK

To prevent any electric shock accident, please wear the wrist strap while using the equipment.

1.2 STATIC ELECTRICITY

The unit supplied uses static-sensitive devices.

1) The work surface should be a conductive grounded mat

2) Soldering irons must be grounded and tools must be in contact with a conductive surface to ground when not in use.

3) Any person handling static-sensitive parts must wear a wrist strap which provides a leaky path to ground impedance not greater than 1M.

4) Components or circuit board assemblies must be stored in or on conductive foam or mat while work is in progress.

1.3 GROUNDING

Disconnection of the protective ground terminal is likely to make the equipment dangerous. Check connections to the ground terminal on the back panel carefully.

1.4 AC POWER SUPPLY

Power cable and connector requirements vary between countries, always use a cable that conforms to local regulations, terminated in an IEC 320connector at the instrument end .If the plug is fused, a 3-amp fuse should be fitted .If the power cable electrical connection to AC power plug is through screw terminals, then adjusted the rear panel 115v\230v on or off button ensure that is set to voltage of the local AC power supply.

1.5 CONEECTING TEST LEADS TO HIGH VOLTAGE OUT PUT TERMINAL

Turn off the equipment before connecting the test leads to the high voltage output terminal. Ensure the wires and leads are in a safe condition.

1.6 WARM-UP

This equipment can begin work immediately after turned on, for more accurate results, please wait 15 minutes for the tester to warm-up.

1.7 EXTERNAL CONTROL

The tester can be controlled by external signals. Be sure that the operator can not reach the high-tension output terminal and the object during the external control.

1.8 MALFUNCTION

If find there are malfunctions with the tester (For Example: There is a great difference on value between the voltage displayed by the voltmeter and the voltage you set, or the signal lamp for high-tension output terminal steadily on while there is not high voltage outputting), please stop using it immediately, contact us for repairing.

1.9 SWITCHING THE UNIT OFF

When the tester is not in use, please switch it off.

1.10 PRESERVATION

The unit can work efficiently at temperature of $5\,^{\circ}C \sim 40\,^{\circ}C$, humidity of 80% RH, and can be stored in a place of $-20\,^{\circ}C \sim 70\,^{\circ}C$, 80% RH. Please do not put the tester at a dusty place or a place of high-temperature, high-humidity. Shaking frequently and isolation is also forbidden.

1.11 IN CASE EMERGENCY

If receiving an electric shock or the tester is causing fire, please turn off the tester and disconnect the power source.

CHAPTER 2. START TO USE

2.1 SETTING THE PROCEUDRE

```
                    START

              EQUIPMENT CONNECTING

                  6235TESTER

              7610/ 7721 TESTER & F7721
              FIXTURE CONNECTING

              6235 & F7721FIXTURE
              SETTING AND TESTING

              7610 & 7721Hi-Pot & LS
              TESTING ARTICLE SET UP

              COMPONENTS CHARACTERISTIC
              TESTING BY F7721 FIXTURE

              HI-POT & SURGE TESTING
              BY F7721 FIXTURE

                    FINISH
```
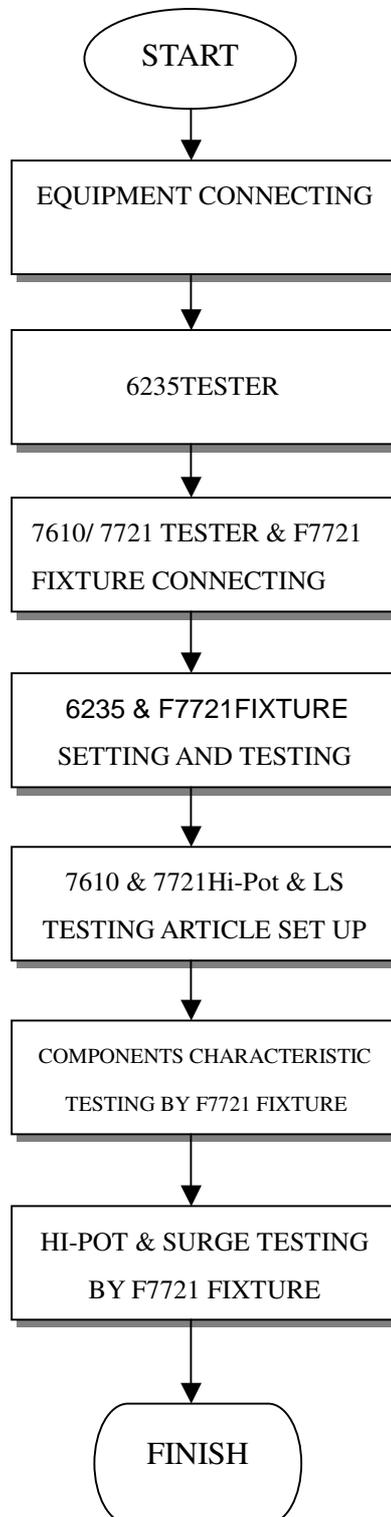
2.2 HARDWARE FRAMEWORK SETTING

● 3 In 1 TRANDFORMER TESTER MAIN FRAMEWORK

This product is combined by 3 equipments which are 6235, 7721, 7610 and F7721 Fixture
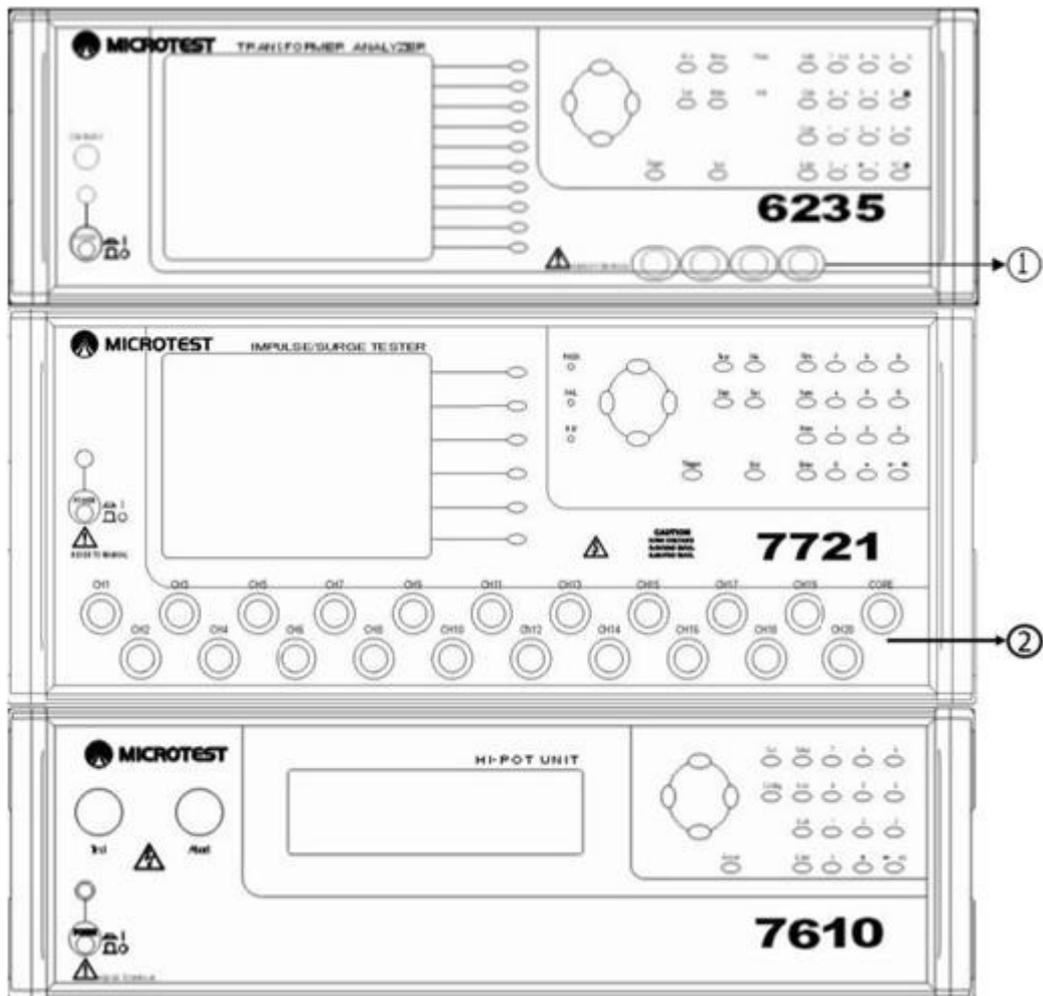
Figure 2-2-1   6235、7721、7610 Tester Front Panel

6235、7721、7610 Front Panel Connection Illustration (Figure 2-2-1)

1. Connect F7721 fixture test line in 6235 test terminal

2. Use high voltage cable to connect the high voltage terminal 7610 and 7721.

● 3 In 1 TRANSFORMER TESTER BACK PANEL
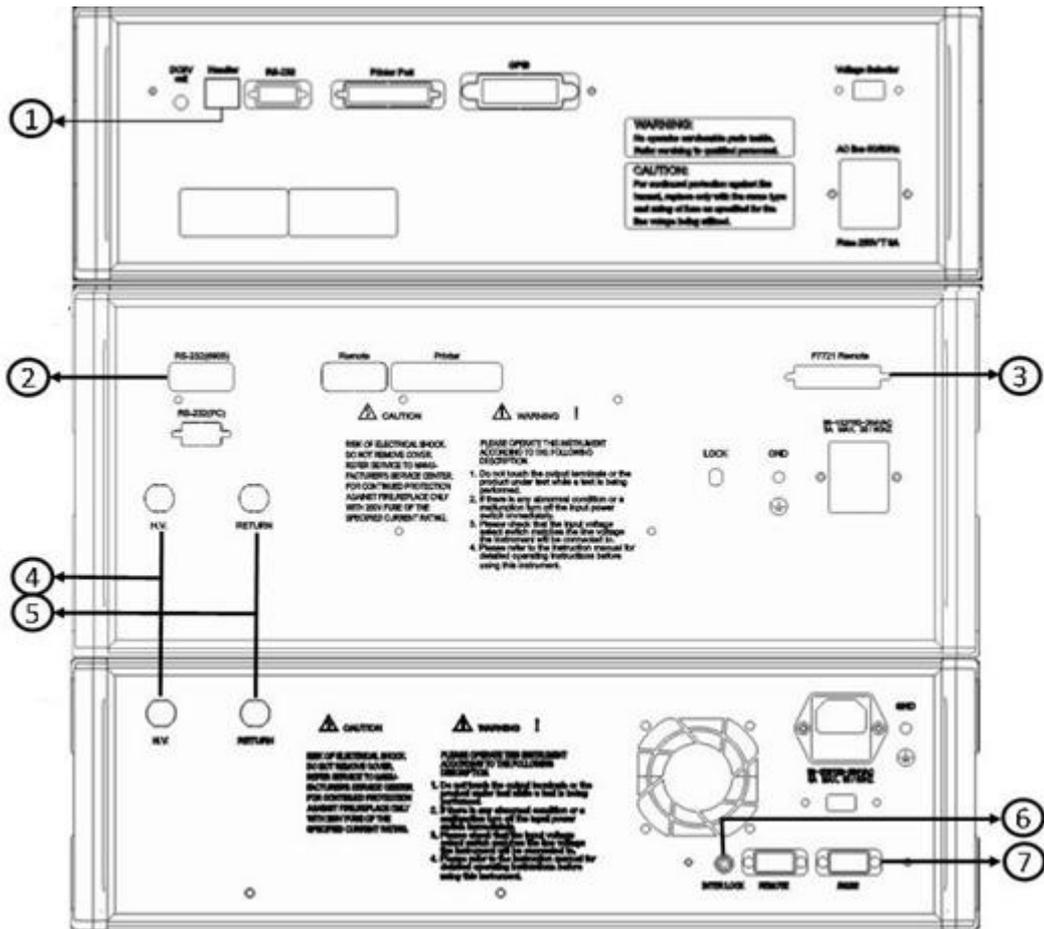
Figure 2-2-2　6235 · 7721 · 7610 Tester Back Panel

1. Handle: Use RJ-45 connects the Remote Control on the F7721 Fixture.
2. RS-232: Use RS-232 connects to RS-232 terminal of 7610
3. Remote: Use connecting line to connect 7721 and F7721 Impulse Remote terminal
4. H.V.: Use high voltage cable to connect 7721 input terminal with 7610 output terminal
5. Return:
6. Inter Lock: Use high voltage socket connects Inter Lock terminal
7. RS-232: Use RS-232 connecting line connects 7610 and RS-232 terminal of 7721

- 3 in 1 Transformer Tester Appropriate Fixture Figure
  - ◆ F7721: Transformer Fixture
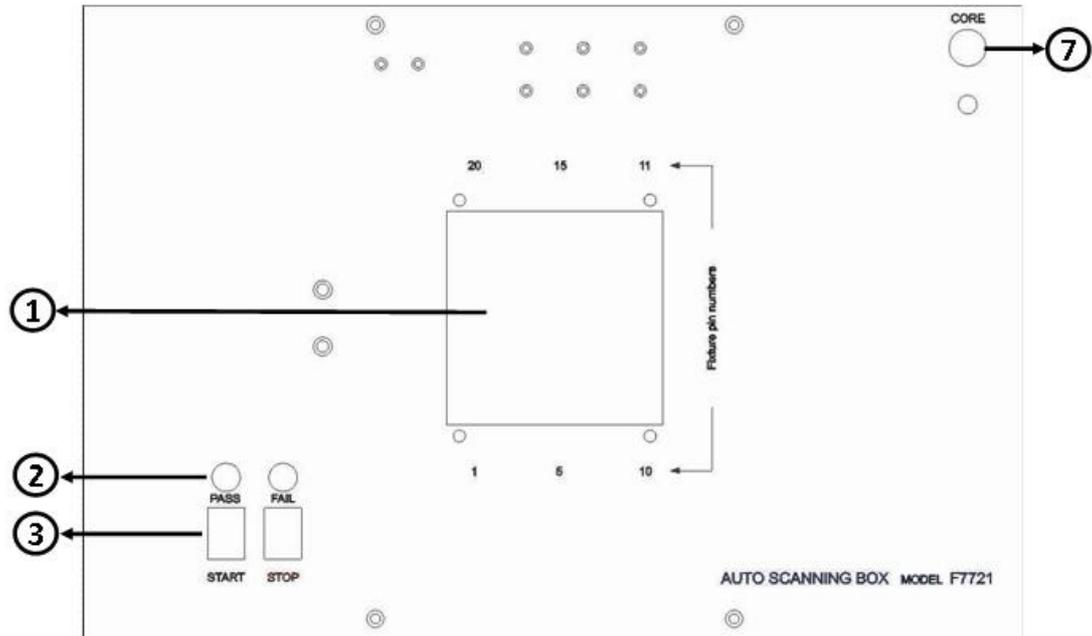
Figure 2-2-3   F7721 Transformer Tester Fixture Overlook
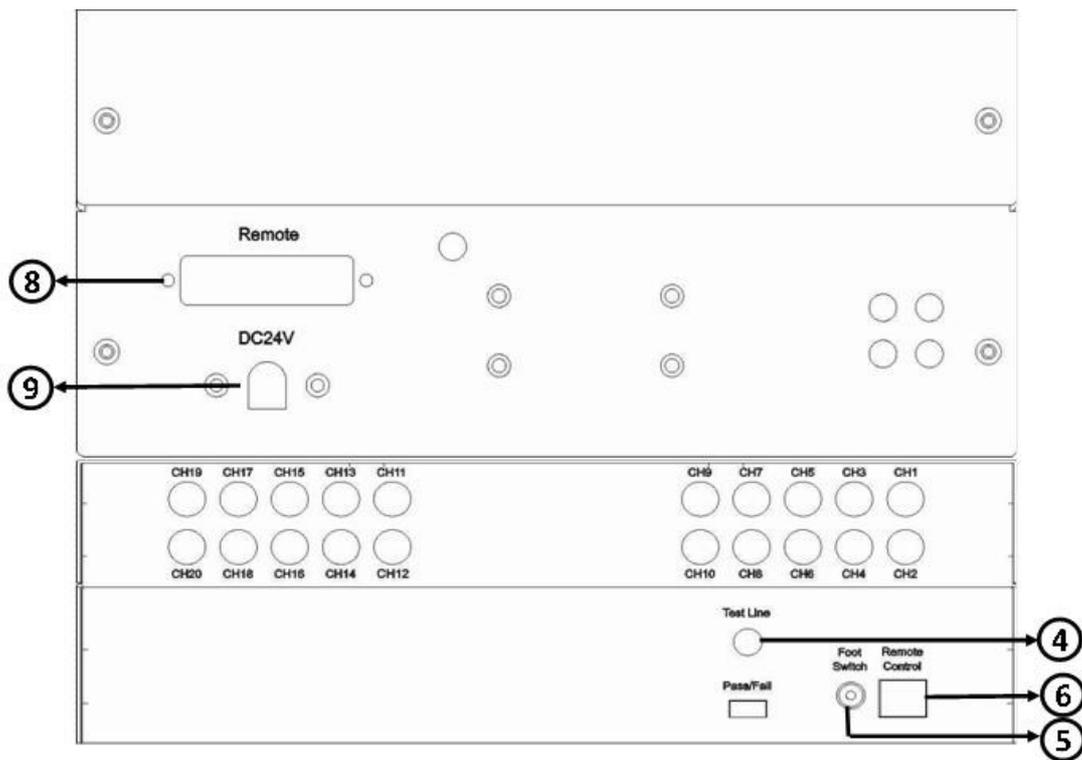
Figure 2-2-4   Transformer Tester Fixture Profile

F7721 Connecting Illustration (Compare with Figure2-2-3 & 2-2-4)

1. Transformer terminal starts with the below left hand side (PIN 1) to upper left hand side (PIN 20)

2. PASS、FAIL: PASS and FAIL flash light
3. START、STOP: Start & stop button
4. Test Line: Use F7721 Fixture terminal connects into 6235
5. Foot Switch: Foot Switch terminal
6. Remote Control: Use RJ-45 connects with 6235 back panel Handler
7. Core: Provide the Core with 7721 core terminal
8. Remote: Connect the cable with the remote terminal on 7721 back panel
9. DC24V: Connect the adapter with fixture

2.3 NOTICING BEFORE OPERATION

Before operation 3 in 1 transformer tester, please make sure there have enough and stable alternating current to provide each automatic testing system' equipment.

CHAPTER 3. OPERATION
3.1 6235 SYSTEM SET UP

Press MENU, menu display on the screen, press SYSTEM to enter system set up,
use ▲ ▼ to shift the items. Figure 3-1-1

```
       Transformer Analyzer 6235    Prog
            Ver 1.72 Sep 20 2007
Lock edit key    : No
Inverse LCD      : No        Set password
Beep             : OFF
Trigger mode     : Single

Trigger delay    : 20   mS
Display test data: All steps
Display font     : Large
Print test data  : No
Break test       : No
Fail lock        : No        Set RS232
Upload test data : No

                                    EXIT
```

Figure. 3-1-1

1. Lock Edit Key
Function key ON/OFF setting, Set password can lock key pad

2. Inverse LCD
LCD back light setting

3. Beep
Prompt sound for testing result, use PROG to select.
   a. Pass: Given a prompt sound when test result is success.
   b. Fail: Given a prompt sound when test result is fail.
   c. All: Given a prompt sound in every test result.
   d. Off: Turn off all prompt sound.

4. Trigger Mode
   a. Single: Single testing
   b. Repeat: Repeat testing

5. Trigger Delay
Trigger time delay setting

6. Display Test Date

   a. All Steps: Display all testing information.

   b. Fail Steps: Display only failure information

7. Display Font

Character size setting

8. Print Test Data

Printed automatically for test result, or press the PRINT key for printing.

9. Break Test

Choose On 1 NG、On 3 NG & On 5 NG will stop testing while meeting failure on 1、3、5 times.　If choose No, than it will not stop the testing.

10. Fail Lock

Fixture will not automatically withdraw only press the STOP key, it reminds that the testing items is defective products.

11. Upload Test Data

Set-up RS-232 in order to make the test result transferred to computer through RS-232.

12. Set RS-232

RS-232 information transmitted setting. Figure 3-1-2

  a. Tester ID number

  b. Baud Rate

  c. Character Length

  d. Stop Bits

  e. Parity

  f. Terminator

```
RS232 configuration

Tester ID number : 0
Baud rate        : 9600          Prog
Character length : 8 bits
Stop bits        : 1 bit
Parity           : Non-parity
Terminator       : 0xa (LF)




                                 EXIT
```

Figure 3-1-2

3.2 7610 SYSTEM SET UP

No need to edit model 7610 directly

All the items edit through model 7721

3.3 6235 TESTING ITEM SET UP

After set up all of the machines, you can start to edit the testing article, pls. find below
for system set up

3.3.1 ENTER MAIN MENU

Press SET on 7721, and then select L, Lk, Rdc, TR, C

```
Test Setting Menu      FIXTURE/SEQUENCE


Edited File:               INSULATION
 NONAME

                              HIPOT

                          SURGE(L/S)

                               WIRE

                        L,Lk,Rdc,TR,C
```

Press SET on Model 6235 to enter the system option manual (Figure. 3-2-2)

```
        SETTING        WINDING/FIXTURE


                       L/Lk/Q/Rac/Z/D/θ/X/Y

                                       Rdc

Active File: 05350             TURN RATIO

                                         C

                                   BALANCE

                                 PIN SHORT


                                CORRECTION
```

Figure. 3-2-2

3.3.2 WINDING / FIXTURE ILLUSTRATION

```
Transformer Fixture Setting  6.WINDING
File: NONAME
TF    Fixture    TF    Fixture
Pin   Channel    Pin   Channel    2.Mapping

 1 →  2          11 →  12
 2 →  3          12 →  13
 3 →  4          13 →  14         3.Clear
 4 →  5          14 →  15
 5 →  6          15 →  16
 6 →  7          16 →  17        4.Clear all
 7 →  8          17 →  18
 8 →  9          18 →  19
 9 →  10         19
10 →  11         20                5.EXIT
```

Figure 3-2-2-1

Transformer Fixture / Winding Setting Set Up Illustration:

1. Transformer Fixture Setting: Set-up the transformer Pin to corresponding fixture channel

   TF Pin: No need to set up

   Fixture Channel: Use number key to set up

2. Mapping: Use the Mapping to set channels automatically, it can also be set manually.

   Transformer Total Pin: Fill in total PINs of transformer

   Fixture Start Channel: Fill in PIN 1 location on the fixture

3. Clear: Clear current setting

4. Clear all: Clear all current settings

5. Exit: Return to main menu

6. Winding: Press ⌷WINDING⌷ key to enter transformer winding setting

Wind: Transformer winding name (N1~N20)

Pin+: Use number key to set up

Pin-: Use number key to set up

Swap: Pin+ & Pin-

```
Transformer Winding Setting    FIXTURE
File: NONAME

Wind Pin+ Pin-   Wind Pin+ Pin-    Swap
 N1   2    1     N11   -    -
 N2   3    4     N12   -    -
 N3   5    6     N13   -    -      Clear
 N4   7    8     N14   -    -
 N5   8    7     N15   -    -
 N6  10   11     N16   -    -    Clear all
 N7  12   13     N17   -    -
 N8  14   15     N18   -    -
 N9  15   14     N19   -    -
 N10  2    1     N20   -    -      EXIT
```

Figure 3-2-2-2

3.3.3 SEQUENCE / BIN ILLUSTRATION

Test Sequence Setting: Figure 3-3-3-1

```
Test Sequence Setting
File: ML                        Seq↑
                                Seq↓
Seq | Function            | Test
 1  | Rdc                 |  ✓
 2  | L/Lk/Q/Rac/Z/D/θ/X/Y|  ✓    ✓ ✗
 3  | C                   |  ✓
 4  | TURN RATIO          |  ✓
 5  | BALANCE             |  ✓    Reset
 6  | PIN SHORT           |  ✓
                                SET BIN
                                EXIT
```

Figure 3-3-3-1

Test Sequence Setting Illustration:

1. ᵁᵉq↑: Prior test item

2. ᵁᵉq↓: Next test item

3. ✓ ✗: To test or not to test this item
4. **RESET**：Back to original setting
5. **SET BIN**：Set BIN level
6. **EXIT**：Back to function setting menu

Bin Sort Setting: Selecting "Set Bin" to enter "Bin Sort Setting" page (Figure 3-3-3-2).
It has Equal, Sequential, Tolerance & Random 4 kinds of classification, the selection
may decide the elements advantages.


```
BIN Sort Setting                    Prog

BIN function: Ls
BIN number   : 4
BIN method   : Equal
Limit mode   : Abs

BIN 1  Limit: 1.0000 H
BIN 4  Limit: 5.0000 H




                                 SET SEQ
                                    EXIT
```
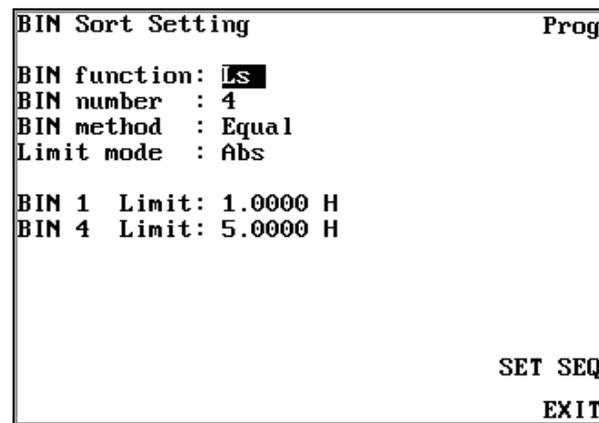
Figure 3-3-3-2

BIN Sort Setting Illustration:
1. BIN Function: BIN classification setting, includes Ls、Lk、Q、Rs and Rdc. If not
   used any classify functions, please turn the OFF button to close the function.
2. BIN Number: BIN range setting. Based on the difference setting on Bin method,
   classification limited is difference, Equal can be classified into 32 levels,
   Sequential、tolerance and random can be divided into 15 levels.
3. BIN Method: Classification set up, including Equal, Sequential, Tolerance and
   Random
● Equal: Equally classified BIN (Figure 3-3-3-3). User just need to set BIN 1 &
   BIN 4 limitation and system will classify equally.
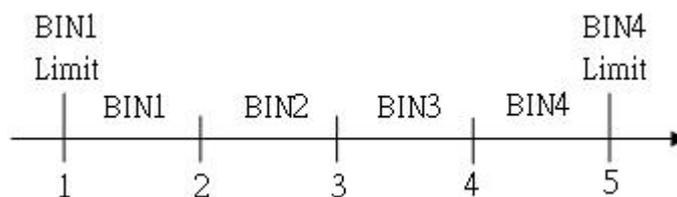
Figure 3-3-3-3

- Sequential: Set up BIN between the continuous sequences (Figure 3-3-3-4). User not only need to set the BIN 1 、 BIN4 Limit but also need to select [Prog] to enter the self-setup

BIN1
Limit
BIN4
Limit

BIN1   BIN2   BIN3   BIN4

1   1.5   2.5   3.5   5

Figure 3-3-3-4

```
         1.0000 H
BIN 1    1.5000 H
BIN 2    2.5000 H
BIN 3    3.5000 H
BIN 4    5.0000 H




                              EXIT
```
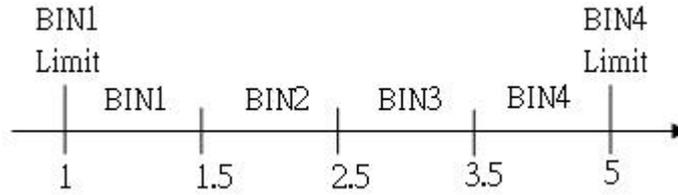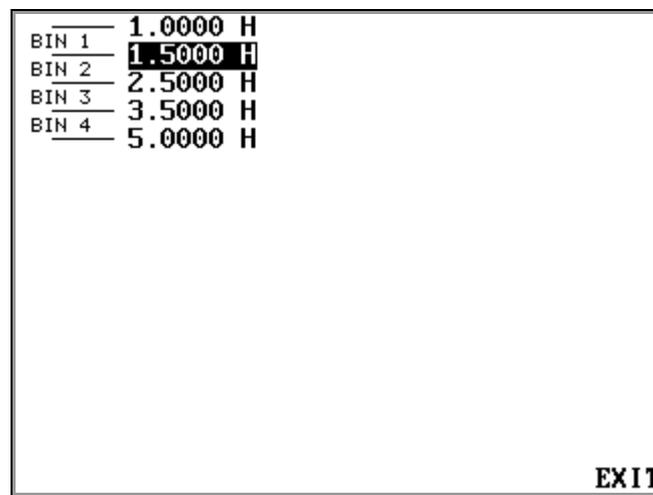
Figure 3-3-3-5

- Tolerance: Use tolerance to set up BIN (Figure 3-3-3-5).   Firstly, users need to set up the Nominal value and then select the [Porg] to enter each positive and negative tolerance (Figure 3-3-3-6).   Set up the tolerance range from minor to major and use Nominal value as a standard, use this standard extends outwards to positive and negative direction.

Nominal

0.8   0.9   1   1.1   1.2

BIN3 ►◄ BIN2 ►◄ — BIN1 — ►◄ BIN2 ►◄ BIN3
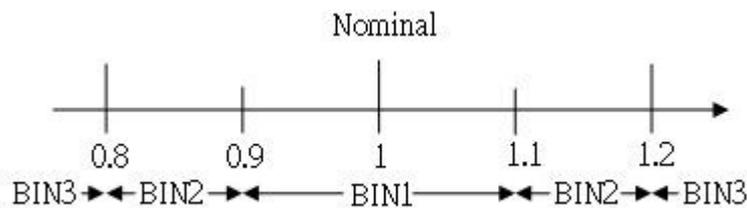
Figure 3-3-3-6

```
                                        nH
BIN 1   ±100.00mH
BIN 2   ±200.00mH
BIN 3   ±300.00mH
BIN 4   ±400.00mH                       μH

                                        mH

                                        H

                                        EXIT
```

Figure 3-3-3-7

● Random: User may randomly and irregularly to set up BIN (figure 3-3-3-8).
Firstly select Prog to enter the BIN range, user can randomly set the range of
BIN1 ~ BIN3 (3-3-3-9).
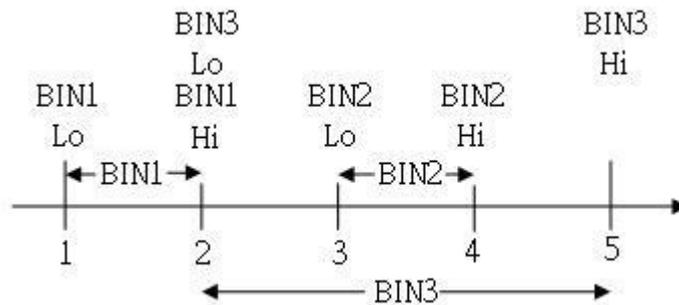
Figure 3-3-3-8

```
    HI          LO
 2.0000 H    1.0000 H        BIN 1
 4.0000 H    3.0000 H        BIN 2
 5.0000 H    2.0000 H        BIN 3
 10.000 H    9.0000 H        BIN 4




                             EXIT
```

Figure 3-3-3-9

4. Limit Mode: BIN maximum and minimum setting mode, including ABS and %.
   ABS: Absolute mode. Set by value.
   %: Percentage mode. Nominal column will appear after selected percentage mode
   (figure 3-3-3-10).   Bin Limit value will based on the Nominal as standard.

```
BIN Sort Setting                    Prog

BIN function: Ls
BIN number   : 4
BIN method   : Equal
Limit mode   : %
Nominal      : 1.0000 H
BIN 1  Limit: +1.000 %
BIN 4  Limit: +5.000 %




                                 SET SEQ
                                    EXIT
```
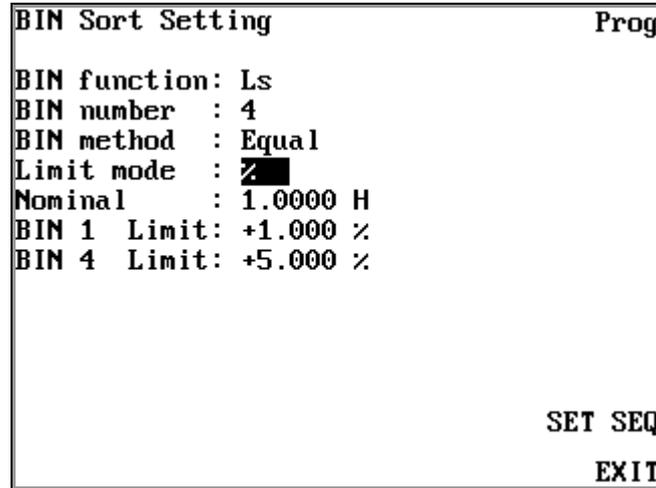
Figure 3-3-3-10

5. BIN Limit: BIN maximum range set-up. Set-up the minimum value for BIN 1
   Limit and maximum value for BIN Max Limit.   Maximum limit will changed by
   BIN number accordingly.

3.3.4 L/LK/Q/Rac/Z/D/Ø/X/Y MEASUREMENT PARAMETERS

Press L/LK/Q/Rac/Z/D/Ø/X/Y on the main menu to enter setup menu

```
L/Lk/Q/Rac/Z/D/θ/X/Y Setting       Wind
File: 05350               1/4      Meas

Wind  N1    C
      ( 1-2 )
                                   Copy
Para    Ls
Freq 100.00k                       PARALL
Volt  1.00 V                       Delete
Std  51.365mH                      SHORT
Max  56.501mH
Min  46.228mH                        %
Rate   Max                         Devia
                                    EXIT
```
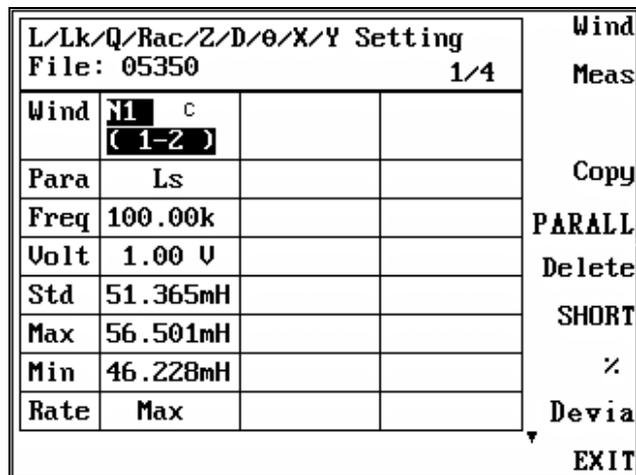
Figure 3-3-4-1

L/Lk/Q/Rac/Z/D/Ø/X/Y Setting

1. Set Wind：

   Wind：to set winding to be tested

   Meas： start measurement

   Copy：copy previous setting

   Delete：delete current settings

   PIN SHORT：fixture relay short setting，press Short key to set up

   ％：Set the maximum and minimum values

   Exit：return to main menu

2. Para: Select the parameters, press Para to select parameters which include Ls、Lp、Lk、Q、Rs、Z、D、θ、Rp、X、Y test items

3. Freq: Set-up the measurement frequency, measurement range 20Hz~200KHz

4. Volt: Volt: Set-up voltage, voltage range: 10mV~2V

5. Std: Set-up standard values, press Meas to start measurement and get the standards, press Accept to save the value, press Quit without saving

Figure 3-3-4-2

6. Max: Set-up the maximum value, press ％ to setup

7. Min: Set-up the minimum value, press ％ to setup

```
L/Lk/Q/Rac/Z/D/θ/X/Y Setting          Prog
File: AAA                    1/1      Meas

Wind  N10                              Para
      ( 2-1 )
                                      ─ Ls
Para    Ls
Freq  1.0000k                         ─ Lp
Volt   1.00 V
Std   8.5100mH                        ─ Lk
Max   9.3610mH
Min   7.6590mH                          Q
Rate    Med
                                      ─ Rs
                              ▾
                                      ─ Z
                                      EXIT
```

Figure 3-3-4-3

8. Rate: Set-up the speed rate, use Prog to adjust

3.3.5 Rdc TESTING ILLUSTRATION

RDC Test Setting: DC Testing Set-up (Figure 3-3-5-1)

```
DCR Test Setting                      Wind
File: AAA                    1/2      Meas

Wind  N4        N6
      ( 7-8 )   (10-11)
Std   25.164 Ω  -14.70mΩ              Copy
Max   27.680 Ω  -16.17mΩ
Min   22.648 Ω  -13.23mΩ              Delete
Rate    Max       Max
Dly   100   mS  0     mS
                                        %

                                      EXIT
```

Figure 3-3-5-1

Rdc Test Setting Illustration:
1. Wind：Press Wind and select the winding which is going to test
2. Meas：Measurement button
3. Copy：Copy previous setting
4. Delete：Delete the setting
5. %：Set the maximum and minimum values
6. Exit：Return to main menu
7. Std：Set-up standard values, press Meas to start measurement and get the standards, press Accept to save the value, press Quit without saving
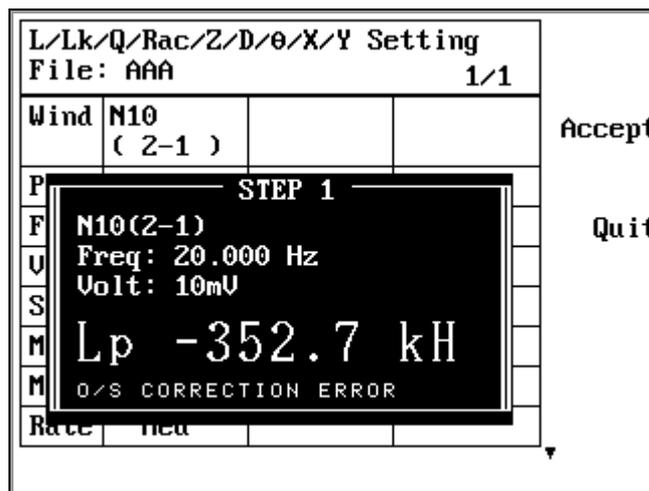
8. Max：Set-up the maximum value, press %% to setup
9. Min：Set-up the minimum value, press %% to setup
10. Rate: Set-up the speed rate, use $\boxed{\text{Prog}}$ to adjust
11. Dly：Set continuous testing time

3.3.6 TURN RATION TESTING ILLUSTRATION

Turn Ration Setting:

Figure 3-3-6-1

Turn Ration Setting Illustration:

1. Wind: Press $\boxed{\text{Wind}}$ and select the winding which is going to test
2. Meas: Measurement button
3. Copy: Copy previous setting
4. Delete: Delete the setting
5. %: Set the maximum and minimum values
6. Exit: Return to main menu
7. Pri: Set-up the primary winding, press $\boxed{\text{Wind}}$ to select
8. Sec: Set-up the secondary winding, press $\boxed{\text{Wind}}$ to select
9. Freq: Set-up the measurement frequency, measurement range 20Hz~200KHz
10. Volt: Set-up voltage, voltage range: 10mV~2V
11. Std: Set-up standard values, press $\boxed{\text{Meas}}$ to start measurement and get the standards, press $\boxed{\text{Accept}}$ to save the value, press $\boxed{\text{Quit}}$ without saving
12. Max: Set-up the maximum value, press %% to setup
13. Min: Set-up the minimum value, press %% to setup

3.3.7 CAPACITANCE SETTING

Capacitance Testing Setting (Figure 3-3-7-1)

```
┌─────────────────────────────────────────┐
│ Capacitance Test Setting                 │       Meas
│ File: AAA                    1/1         │
│ ┌─────┬─────────┬────────┬────────┐      │
│ │Pin+ │  1      │        │        │      │
│ ├─────┼─────────┼────────┼────────┤      │       Copy
│ │Pin- │  2      │        │        │      │
│ ├─────┼─────────┼────────┼────────┤      │
│ │Freq │10.000k  │        │        │      │
│ ├─────┼─────────┼────────┼────────┤      │
│ │Volt │ 1.00 V  │        │        │      │
│ ├─────┼─────────┼────────┼────────┤      │     Delete
│ │Std  │0.0000 F │        │        │      │
│ ├─────┼─────────┼────────┼────────┤      │
│ │Max  │0.0000 F │        │        │      │
│ ├─────┼─────────┼────────┼────────┤      │
│ │Min  │0.0000 F │        │        │      │
│ ├─────┼─────────┼────────┼────────┤      │        %
│ │Rate │  Max    │        │        │      │
│ ├─────┼─────────┼────────┼────────┤      │
│ │Dly  │ 0    mS │        │        │      │
│ └─────┴─────────┴────────┴────────┘      │       EXIT
└─────────────────────────────────────────┘
```

Figure 3-3-7-1

Capacitance Test Setting Illustration:

*Others function will display only after insert "Pin+"

1. Wind: Press Wind and select the winding which is going to test
2. Meas: Measurement button
3. Copy: Copy previous setting
4. Delete: Delete the setting
5. %: Set the maximum and minimum values
6. Exit: Return to main menu
7. Pin+: Use number key to set up
8. Pin-: Use number key to set up
9. Freq: Set-up the measurement frequency, measurement range 20Hz~200KHz
10. Volt: Set-up voltage, voltage range: 10mV~2V
11. Std: Set-up standard values, press Meas to start measurement and get the standards, press Accept to save the value, press Quit without saving
12. Max: Set-up the maximum value, press % to setup
13. Min: Set-up the minimum value, press % to setup
14. Rate: Set-Up the speed rate
15. Dly: Set continuous testing time

3.3.8 BALANCE TESTING ILLUSTRATION

Balance Test Setting: Winding Balance Test Setting (Figure 3-3-8-1)

```
┌─────────────────────────────────────┐
│ Balance Test Setting                │
│ File: AAA                    1/1     │
├──────┬──────────┬─────────┬─────────┤
│ RefA │ N1       │         │         │
│      │ ( 1-2 )  │         │         │
├──────┼──────────┼─────────┼─────────┤      Copy
│ RefB │ N2       │         │         │
│      │ ( 3-4 )  │         │         │
├──────┼──────────┼─────────┼─────────┤
│ Para │   DCR    │         │         │      Delete
├──────┼──────────┼─────────┼─────────┤
│ Freq │          │         │         │
├──────┼──────────┼─────────┼─────────┤
│ Volt │          │         │         │
├──────┼──────────┼─────────┼─────────┤
│ Max  │ 105.00 Ω │         │         │
├──────┼──────────┼─────────┼─────────┤
│ Min  │ 0.0000 Ω │         │         │
└──────┴──────────┴─────────┴─────────┘      EXIT
```

Figure 3-3-8-1

Balance Test Setting Illustration:

1. RefA: Use Wind to set-up reference winding A

2. RefB: Use Wind to set-up reference winding B

3. Para: Use Prog to select Ls、Lp、Lk、Rs、Z、DCR

4. Freq: Set-up the measurement frequency, measurement range 20Hz~200KHz

5. Volt: Set-up voltage, voltage range: 10mV~2V

6. Max: Set-up the maximum value

7. Min: Set-up the minimum value

3.3.9 PIN SHORT TESTING ILLUSTRATION

Pin Short Test Setting: Figure 3-3-9-1

```
┌─────────────────────────────────────┐
│ Pin Short Test Setting              │
│ File: AAA                           │
│ Step Pin+ Pin─                      │
│ ───────────────────────────────     │
│ 1      ■                            │
│ 2                                   │
│ 3                                   │
│ 4                             Clear │
│ 5                                   │
│ 6                                   │
│ 7                                   │
│ 8                                   │
│ 9                                   │
│ 10                                  │
│ 11                                  │
│ 12                            EXIT  │
└─────────────────────────────────────┘
```

Figure 3-3-9-1

Pin Short Test Setting Illustration:

1. Pin+: Use number key to set up

2. Pin-: Use number key to set up

3.3.10 FIXTURE CORRECTION

The purpose of correction is to eliminate the effects of stray capacitance or series impedance in the connecting leads or fixtures (Figure 3-3-10-1).   The correction values are held in non-volatile memory within the instrument, and will not be lost even after switching the instrument off.   To ensure accuracy of measurement, frequent correction is recommended. While drive level or test frequency changed, a correction is a must. (Please remove the transformer from the fixture before performing of correction).

```
CORRECTION


                                    OPEN + SHORT

                                         OPEN

                                        SHORT


                                          EXIT
```
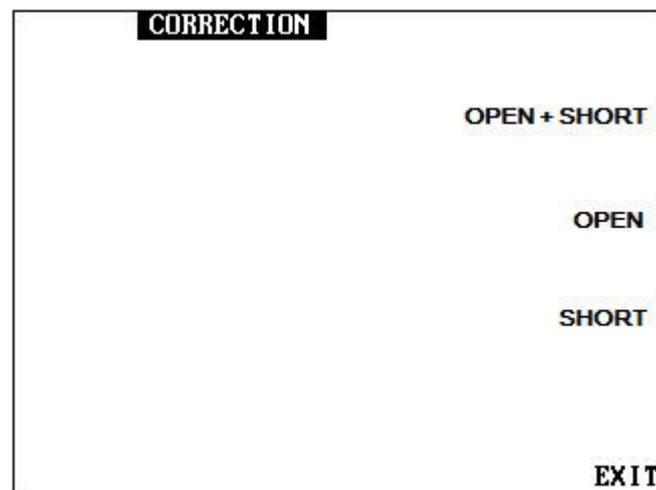
Figure 3-3-10-1

Correction Setting Illustration:
1. Open+Short: Correct the open and short circuit error
2. Open: Only correct the open circuit
3. Short: Only correct the short circuit

3.3.11 DEVIATION SETUP ILLUSTRATION

Complete Deviation: Use Golden Sample as standards to set up the tolerance balance (Figure 3-3-11-1).

Figure 3-3-11-1

Complete Deviation Setting Illustration

*This setting has to put Golden Sample into F7721 fixture.

1. Function: Display the deviation items

2. Accepted Range: Deviation maximum and minimum limit setting.

3. Start: Start testing and calculate the balance value. If balance value appears "Reject" it means the balance over the maximum and minimum limit, on the other hands if it shows "Accept", it means the balance is within the range. Choose Save to save the data or choose Exit without saving.

3.4 7610、7721 TESTING SET-UP

3.4.1 Impulse and Hi-Pot Tester Set-up

Before setting, please make sure 7721, 7610 tester & F7610 fixture are all connected.

Figure 3-3-4-1

7721 Setting Illustration:

Please ensure the safety inter lock is plug in before testing. The unit will not out put high voltage and will display "HI – POT LOCK" if safety inter lock is not in its place. When idling, press [Set] key to enter option menu (Figure 3-4-1-1), use left and right arrow to shift the items, and use up and down arrow or numeric keyboard to change.

```
┌──────────────────────────────┬──────┐
│ Test Sequence Setting        │ ON∕  │
│ File: NONAME                 │ OFF  │
├─────┬──────────────────┬─────┼──────┤
│ Seq │ Function         │ Test│      │
├─────┼──────────────────┼─────┤      │
│  1  │ INSULATION       │  ✓  │ For- │
├─────┼──────────────────┼─────┤ ward │
│  2  │ HIPOT            │  ✓  │      │
├─────┼──────────────────┼─────┤ Back │
│  3  │ SURGE(L∕S)       │  ✓  │ ward │
├─────┼──────────────────┼─────┤      │
│  4  │ WIRE             │  ✓  │      │
├─────┼──────────────────┼─────┤      │
│  5  │ LCR,TR           │  ✓  │      │
└─────┴──────────────────┴─────┤      │
                               │ EXIT │
                               └──────┘
```

```
┌──────────────────────────────┬──────┐
│ Transforme(TF Pin) Fixture Cha(Channel) │
│                                         │
│ TF   Fixture    TF   Fixture            │
│ Pin  Channel    Pin  Channel   │ Mapp │
│ ─────────────────────────────  │ ing  │
│  1 → 1          11 → 11         │      │
│  2 → 2          12 → 12         │      │
│  3 → 3          13 → 13         │      │
│  4 → 4          14 → 14         │      │
│  5 → 5          15 → 15         │ Clr. │
│  6 → 6          16 → 16         │      │
│  7 → 7          17 → 17         │ Clr. │
│  8 → 8          18 → 18         │ All  │
│  9 → 9          19 → 19         │      │
│ 10 → 10         20 → 20         │ EXIT │
└────────────────────────────────┴──────┘
```

● Test sequence / Pin setting: Test sequence displays the test process which is using now. Pin setting is the pin of DUT correspond to the channels of fixture

```
Insulation Test Setting
File: NONAME                1/1
┌─────────┬──────────┬───┐
│ H/V PIN+│  1...    │   │   ┌─────┐
├─────────┼──────────┤   │   │PSC→ │
│ H/V PIN-│  11...   │   │   └─────┘
├─────────┼──────────┤   │
│ Name    │ P→S      │   │
├─────────┼──────────┤   │
│ Voltage │  1.00 kV │   │
├─────────┼──────────┤   │   ┌─────┐
│ Dwell   │  1.0 Sec │   │   │Copy │
├─────────┼──────────┤   │   └─────┘
│ Maximum │  0.1 Sec │   │
├─────────┼──────────┤   │   ┌─────┐
│ Minimum │ 9999 MΩ  │   │   │Del. │
├─────────┼──────────┤   │   └─────┘
│ Arc Sen.│  100 MΩ  │   │
├─────────┼──────────┤   │   ┌─────┐
│         │    0     │   │   │EXIT │
└─────────┴──────────┴───┘   └─────┘
```

- Insulation:
- Voltage: Use numeric key to edit voltage setting. Max voltage is DC 1.0kV, min voltage is DC 0.1kV
- Dwell: Dwell is voltage output time. Use numeric key to edit, setting value should between 99.9 sec to 0.1 sec
- Maximum / Minimum value: Use numeric key to edit he value. If the value over the setting range the result is fail, if the value is in the setting range, the result will pass. The max value is 9999MΩ, the min value is 0 MΩ
- Arc Sen: Use numeric key to edit, the value is smaller the sensitivity is higher. If the value is 0, then the function will be closed.

```
Hipot Test Setting                     ┌─────┐
File: NONAME                1/0        │ ON  │
┌─────────┬──────────┬───┐             └─────┘
│ H/V PIN+│    █     │   │             ┌─────┐
├─────────┼──────────┤   │             │ OK  │
│ H/V PIN-│          │   │             └─────┘
├─────────┴──────────┴───┘
 ┌───────────────────────────────────┐
 │  H/V+ PIN                          │
 │ ┌──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┐ │
 │ │ 1│ 2│ 3│ 4│ 5│ 6│ 7│ 8│ 9│10│  │ │
 │ ├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┤ │
 │ │ ✓│ ✓│ ✓│ █│  │  │  │  │  │  │  │ │
 │ ├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┤ │
 │ │11│12│13│14│15│16│17│18│19│20│ C│ │
 │ ├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┤ │
 │ │  │  │  │  │  │  │  │  │  │  │  │ │
 │ └──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┘ │
 └───────────────────────────────────┘
┌─────────┬──────────┬───┐
│ Arc Sen.│          │   │             ┌─────┐
├─────────┼──────────┤   │             │QUIT │
│ Offset  │          │   │             └─────┘
└─────────┴──────────┴───┘
```

- Hi-Pot Test Setting:
- Volt: Use numeric key to edit voltage setting. Max voltage is AC 3.0kV / DC

3.0kV, min voltage is 0.1kV. After the voltage setting, use navigation key to move the cursor to frequency part, use select key to select the frequency.

- Dwell: Dwell is voltage output time. Use numeric key to edit, setting value should between 99.9 sec to 0.1 sec
- Ramp: Voltage rising time, from 0 to the value which you setting. Setting value should between 9.9 sec to 0.1 sec
- Maximum / Minimum value: Use numeric key to edit he value. If the value over the setting range the result is fail, if the value is in the setting range, the result will pass. The max AC setting value is 10mA, DC setting value is 5mA, the minimum setting value of AC and DC is 0
- Arc Sen: Use numeric key to edit, the value is smaller the sensitivity is higher. If the value is 0, then the function will be closed.
- ZERO: Deduct the leakage current from the tester or fixture.
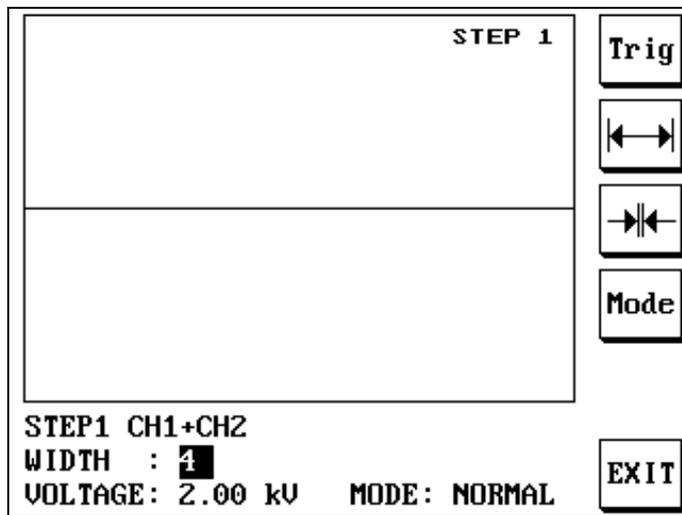
- Surge: Layer short. Voltage setting, waveform learning setting.
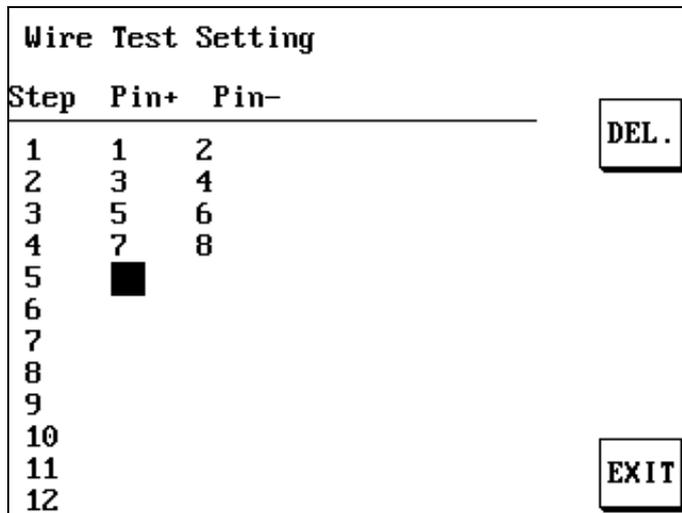
- Wire: Check if wind are broken or misconnected
- LCR, TR: Enter the edit function of model 6235

3.5 PROGRAM AND STATISTIC INFORMATION SAVING MANAGEMENT

Based on the different tester and different testing article, the information will be saved in 6235、7721 separately yet 7610 do not have any testing information and statistic function.

- 6235 testing information save route: Press the Menu button on the front panel and select STSTISTICS function key to enter the testing information statistic screen.
- 7721 testing information save route: Press the Stat button on the front panel to enter the testing information statistic screen.