3542 DC Low Resistance Tester

Communication Interface

Operation Manual

English version

Aug, 2018
Rev1.0.0

Changzhou Hopetech Electronic Technology Co., Ltd

6.1 SCPI instruction structure

At the very top of the tree-like command is the root command, or root for short. If you want to reach a low-level instruction, you must follow a specific path to reach it.

Command terminator: the terminator of the command input, such as NL (line break, ASCII code 10).
Colon (:): a colon is a hierarchy of commands that represents a level of entry into the command.
Semicolon (;): a semicolon indicates the start of multiple commands.
Question mark (**?**): a question mark indicates a query.
Comma (,): a comma is a delimiter for multiple arguments.
Space ( ): a space is a delimiter between a command and a parameter.

Figure 6.1 shows how to achieve low-level instructions by using colons and semicolons.

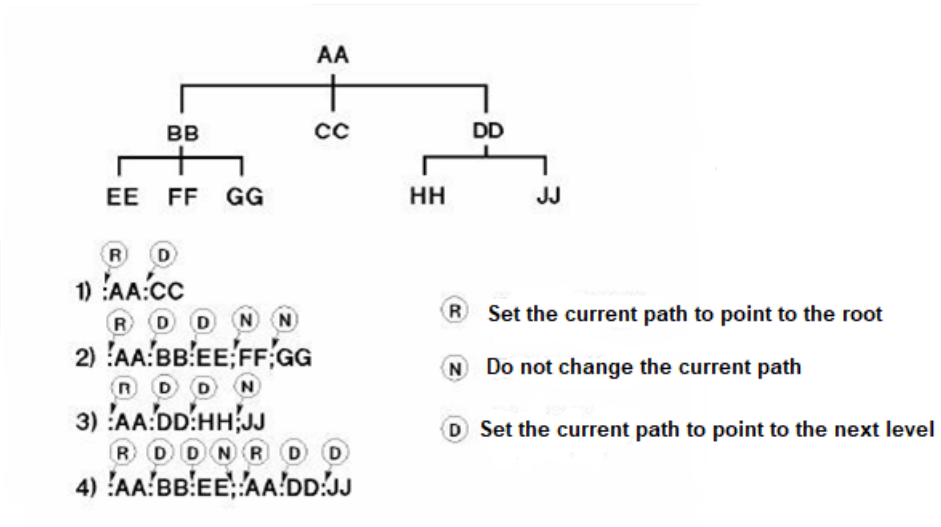

Figure 6.1 SCPI Instruction Tree Structure

6.2 SCPI sub-instruction system

1. *IDN?
Function: Query version number
Example:
Send *IDN?
Return Hopetech, HT3542, V1.0

2. *TRG
Function: Trigger the instrument test, and return the result, after sending the instrument automatically into the external trigger
Example:
Send *TRG
Returns 001.00000E-03

3. FETCh?
Function: Returns test results without changing the trigger mode of the instrument
Example:
Send FETCh?
Returns 001.00000E-03

4. SAMPle:RATE
Function: Set or query test speed
Example:
Send SAMPle:RATE 0
No return, set the current speed to send SAMPle:RATE?
Returns 0 (fast) 1 (medium) 2 (slow 1) 3 (slow 2).

5. RESsistance:RANGe
Function: Set or query the resistance range
Example:
Send RESsistance: RANGe 0
No return, set the current range to 20mΩ
send RESsistance:RANGe?
Returns 0(20m) 1(200m) 2(2000m) 3(20Ω) 4(200Ω) 5(2000Ω) 6(20k) 7(200k) 8(2000k) 9(10M)

6. RESsistance:RANGe:AUTO
Function: Set or query resistance range automatic example:
Send RESsistance:RANGe:AUTO 1
No return, set range as automatic
Send RESsistance:RANGe:AUTO?
Returns 0 (range automatic) 1 (manual range).

7. RESsistance:OVC
Function: Set or query OVC function
Example:
Send RESsistance: OVC 1
No return, set OVC on
Send RESsistance: OVC?
Returns 0 (closed) 1 (on).

8. TRIGger:SOURce
Function: Set or query trigger mode
Example:
Send TRIGger: SOURce 1
No return, set trigger mode as external
Send TRIGger:SOURce?
Returns 0 (auto trigger) 1 (external trigger).

9. TEMP?
Function: Query external measured temperature
Example:
Send TEMP?
Returns 25.1

10. MUX:Channel:ONOFF
Function: Turn on/off test channel
Format: MUX:Channel:ONOFF channel number, ON| OFF

11. MUX:Channel:ONOFF? Channel number
Function: Returns whether the channel is open

12. MUX:Channel:RANGe
Function: Set the channel range
Format: MUX:Channel:RANGe channel number, range number

13. MUX:Channel:RANGe? Channel number
Function: Returns the channel range

14. MUX:Channel:UPPer:ONOFF
Function: Sets whether channel upper limit is enabled
Format: MUX:Channel:UPPer:ONOFF channel number, ON| OFF

15. MUX:Channel:UPPer:ONOFF? Channel number
Function: Returns whether the channel upper limit is enabled

16. MUX:Channel:UPPer:VALue
Function: Set the channel upper limit value
Format: MUX:Channel:UPPer:VALue channel number, upper limit

17. MUX:Channel:UPPer:VALue? Channel number
Function: Returns the upper channel value

18. MUX:Channel:LOWer:ONOFF
Function: Sets whether the channel lower limit is enabled
Format: MUX:Channel:LOWer:ONOFF Channel Number, ON| OFF

19. MUX:Channel:LOWer:ONOFF? Channel number
Function: Returns whether the channel lower limit is enabled

20. MUX:Channel:LOWer:VALue
Function: Set the channel lower limit value
Format: MUX:Channel:LOWer:VALue channel number, lower limit value

21 MUX:Channel:LOWer:VALue? Channel number
Function: Returns the channel lower limit value

Measurement resistance value data format

		Normal test values	**Range on the super**	**Measurement failed**
0	20mΩ	±□□.□□□□E-03	+10.00000E+19	+10.00000E+29
1	200mΩ	±□□□.□□□E-03	+10.00000E+18	+10.00000E+28
2	2000mΩ	±□□□.□□□E-03	+10.00000E+17	+10.00000E+27
3	20Ω	±□□.□□□□E+00	+10.00000E+19	+10.00000E+29
4	200Ω	±□□□.□□□E+00	+10.00000E+18	+10.00000E+28
5	2000Ω	±□□□.□□□E+00	+10.00000E+17	+10.00000E+27
6	20kΩ	±□□.□□□□E+03	+10.00000E+19	+10.00000E+29
7	200kΩ	±□□□.□□□E+03	+10.00000E+18	+10.00000E+28
8	2000kΩ	±□□□.□□□E+03	+10.00000E+17	+10.00000E+27
9	10MΩ	±□□.□□□□E+06	+10.00000E+18	+10.00000E+28