CR

COMMAND REFERENCE

TH86XX Series

SCPI Command Reference — TH8610 / TH8610A, TH8601 / TH8601A, TH8602-1 / TH8602B / TH8602C / TH8602-2 / TH8602-3 / TH8602-4, TH8603-4. Companion document to the TH86XX Series Operation Manual; covers the full remote-command set shared across the platform (≈120 commands).

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INTRODUCTION

Conventions & Scope

This reference documents the SCPI-style remote command set shared by all eleven TH86XX models (TH8610, TH8610A, TH8601, TH8601A, TH8602-1, TH8602B, TH8602C, TH8602-2, TH8602-3, TH8602-4, TH8603-4). It is a companion to the **TH86XX Series Operation Manual**, whose section numbers are cross-referenced throughout — read that manual's Chapter 4 first for what each setting actually does; this document covers only how to set/query it remotely.

Commands are colon-separated and hierarchical, shown with their full mnemonic (e.g. `:SETUP:MODE:TYPE`). Most accept a **set** form (mnemonic + a data value) and a **query** form (mnemonic + `?`), which returns the current value. Enumerated fields take a numeric code starting at 0, in the same order the options are listed in the Operation Manual. Select the active remote interface and, for bus-triggered testing, set Trigger mode to **Bus** — see Operation Manual §7.1.1 and §7.1.3.

Contents

Section	Subsystem	Commands
1	`:SETUP:MODE` — Mode settings	13
2	`:SETUP:OS` — Short/Open settings	15
3	`:SETUP:COND` — Conduction settings	14
4	`:SETUP:LCR` — Component settings	5
5	`:SETUP:HV` / `:SETUP:ITEM` — High-voltage & item settings	22
6	`:TRIG` / `:STOP` / `:LEARN` — Trigger & learn	3
7	`:FETCH` — Result readback	19
8	`:SYS:MEAS` — Test-tab system settings	14
9	`:SYS:ENVI` — Environment-tab settings	8
10	`:FILE` — File transfer	4
11	`:DISP` / `:STAT` — Display & statistics	2

SECTION 1

:SETUP:MODE — Mode Settings

See Operation Manual §4.1. Each command below accepts a set form (append the data) and a query form (append ?).

Command	Function	Data / range
:SETUP:MODE:LEARN	Learn-network mode	Enum: 0 Manual · 1 Type-C auto · 2–11 protocol-specific networks (AC2.0, AC3.0, CC3.1IC, CC2.0IC, CC3.0IC, CC3.1, CC2.0, CC3.0, AC2.0IC, CC both sides)
:SETUP:MODE:TYPE	Wire type	Enum: 0 Normal · 1 Single-ended · 2 Point test
:SETUP:MODE:PORT	Connector type	Enum: 0 Normal · 1 One end A/B · 2 Both ends A/B
:SETUP:MODE:PD	Chip type	Enum: 0 No chip · 1 PD2.0 · 2 PD3.0 · 3 PD ALL
:SETUP:MODE:ABEG / :AEND	A-end start / end pin	NR1, 0–32 (per slot)
:SETUP:MODE:BBEG / :BEND	B-end start / end pin	NR1, 0–32
:SETUP:MODE:CBEG / :CEND	C-end start / end pin	NR1, 0–32
:SETUP:MODE:DBEG / :DEND	D-end start / end pin	NR1, 0–32
:SETUP:MODE:ALL	Bulk-set — writes all 12 Mode fields above in one command, comma-separated, in the same order	12 comma-separated values

SECTION 2

:SETUP:OS — Short/Open Settings

See Operation Manual §4.2.

Command	Function	Data / range
:SETUP:OS:RSTD	Short/open threshold	NR2/NR3, 0.01 kΩ – 100 kΩ
:SETUP:OS:CSTD	Single-side sensitivity threshold	NR2/NR3, 0 pF – 9.999 nF
:SETUP:OS:SIDE	End-side judgement	Enum: 0 Off · 1 On · 2 Split · 3 %
:SETUP:OS:SPEED	Single-side test speed	Enum: 0 Slow · 1 Medium · 2 Fast
:SETUP:OS:OSTM	Transient short/open time	NR2, 0 – 999.9 s
:SETUP:OS:OPTM	Transient open time	NR2, 0 – 999.9 s
:SETUP:OS:HULL	Shell pin	NR1, 1–32 (A1–A32)
:SETUP:OS:CAP	Large-capacitance present	Enum: 0 No · 1 Yes
:SETUP:OS:DELAY	Short/open delay	NR2/NR3, 1 µs – 60.00 ms
:SETUP:OS:METH	Scan method	Enum: 0 Binary search · 1 One-to-others
:SETUP:OS:FIO	Fast transient	Enum: 0 Off · 1 On
:SETUP:OS:FAILT	Fail count	NR1
:SETUP:OS:AFAIL	Stop-after-fail action	Enum: 0 Empty stop · 1 Short stop · 2 Open stop · 3 Repeat stop
:SETUP:OS:RIGID	Precision short/open	Off, or a resistance value (Ω) enabling it
:SETUP:OS:ALL	Bulk-set — writes all 14 Short/Open fields above in one command	14 comma-separated values

SECTION 3

:SETUP:COND — Conduction Settings

See Operation Manual §4.3.

Command	Function	Data / range
:SETUP:COND:UPPER	Conduction upper limit	NR2/NR3, 0.001 Ω – 950 Ω
:SETUP:COND:LOWER	Conduction lower limit	NR2/NR3, 0.001 Ω – 949.99 Ω
:SETUP:COND:SPEC	Transient-conduction upper limit	NR2/NR3
:SETUP:COND:TIME	Transient-conduction test time	NR2, 0.1 – 999.9 s
:SETUP:COND:SPEED	Conduction test speed	Enum: 0 Slow · 1 Medium · 2 Fast
:SETUP:COND:IFAIL	Transient-conduction fail action	Enum: 0 Stop test · 1 Complete all
:SETUP:COND:NFAIL	Error loop	Enum: 0 Off · 1 On
:SETUP:COND:CURR	Test current	NR1, 0–20 (mA; standard = 20)
:SETUP:COND:PIN1 / :PIN2	Common pin 1 / 2	NR1, test pin number
:SETUP:COND:ITEM	Test options	Enum: 0 All tests · 1 Normal conduction · 2 Point-test conduction
:SETUP:COND:ZERO	Conduction offset (base)	NR2, 0 – 10 Ω
:SETUP:COND:NET	Conduction network mode	Enum: 0 Normal · 1 Common point · 2 A-to-B · 3 Composite
:SETUP:COND:BAL	Conduction balance	Off, or a Δ value 0 – 9.999 Ω
:SETUP:COND:RETES	Conduction re-test count	NR1
:SETUP:COND:ALL	Bulk-set — writes the Conduction fields above in one command	comma-separated values

SECTION 4

:SETUP:LCR — Component Settings

See Operation Manual §4.4. Component rows are addressed by serial number <sn>.

Command	Function	Data / range
:SETUP:LCR:TEST	Retest-on-fail (per component row)	Enum: 0 Off · 1 On
:SETUP:LCR:TYPE	Component type	Enum: 1 Inductance · 2 Capacitance · 3 Resistance · … (see Operation Manual §4.4 for the full type list — diode, capacitor polarity, voltage drop, reverse-diode, resistance-sum, resistance-balance, voltage-sum)
:SETUP:LCR:PIN1 / :PIN2	Component + / – pin	NR1, test pin number
:SETUP:LCR:SPEC	Component spec (nominal value)	NR2/NR3, with unit
:SETUP:LCR:OFFS	Component tolerance	NR2/NR3
:SETUP:LCR:ADDI	Additional parameter (diode current, charge/working current or voltage — valid only for the component types that use it)	NR2/NR3
:SETUP:LCR:ALL:<sn>	Bulk-set — writes all 6 fields of component row <sn> in one command	6 comma-separated values

SECTION 5

:SETUP:HV / :SETUP:ITEM — High-Voltage & Item Settings

See Operation Manual §4.5–§4.6. The HV fields below are shared field names — precede a set/query with the active HV tab (ACW, DCW or IR) as selected on the instrument, or use the bulk-set commands which name the tab explicitly.

Command	Function	Data / range
`:SETUP:HV:VOLT`	Test voltage	NR2/NR3, AC 50 V–1000 V · DC 50 V–1500 V
`:SETUP:HV:SPEC`	Test spec (pass/fail threshold)	ACW/DCW: 1 µA–10 mA · IR: 0.1 MΩ–10 GΩ
`:SETUP:HV:TIME`	Test time	NR2, 0.01 s – 500.0 s
`:SETUP:HV:RISE`	Rise time	NR2
`:SETUP:HV:ARC`	Arc detection	Off, or level 1–8
`:SETUP:HV:METH`	Test method	Enum: 0 Binary search · 1 One-to-others · 2 Automatic · 3 All-to-ground · 4 Product group · 5 Odd-vs-even · 6 Odd/even upper-lower
`:SETUP:HV:EMPT`	Empty-point test	Enum: 0 Off · 1 On
`:SETUP:HV:GND`	Ground pin (All-to-ground method)	NR1, 1–32 (A1–A32)
`:SETUP:HV:GVOLT`	Ground test voltage	NR2/NR3, AC 50 V–1000 V · DC 50 V–1500 V
`:SETUP:HV:GSPEC`	Ground test spec	ACW/DCW: 1 µA–10 mA · IR: 0.1 MΩ–10 GΩ
`:SETUP:HV:GTIME`	Ground test time	NR2, 0.01 s – 500.0 s
`:SETUP:HV:ACW`	Bulk-set — writes all 9 ACW-tab fields in one command, in this order: test voltage, test time, test spec, test method, arc detection, rise time, ground pin, empty-point test, AC frequency	9 comma-separated values, e.g. `:SETUP:HV:ACW 500,1,0.001,1,0,0,0,0,0` for 500 V / 1 s / 1 mA spec / One-to-others / arc off / 0 s rise / no ground pin / empty-point off / 50 Hz. Returns `1` on success.
`:SETUP:ITEM:OS`	Short/open test — item on/off	Enum: 0 Off · 1 On
`:SETUP:ITEM:IOS`	Transient short/open — item on/off	Enum: 0 Off · 1 On
`:SETUP:ITEM:IOPEN`	Transient open — item on/off	Enum: 0 Off · 1 On
`:SETUP:ITEM:COND`	Conduction — item on/off	Enum: 0 Off · 1 On
`:SETUP:ITEM:ICOND`	Transient conduction — item on/off	Enum: 0 Off · 1 On
`:SETUP:ITEM:LCR`	Component test — item on/off	Enum: 0 Off · 1 On
`:SETUP:ITEM:ACW`	AC withstand voltage — item on/off	Enum: 0 Off · 1 On
`:SETUP:ITEM:DCW`	DC withstand voltage — item on/off	Enum: 0 Off · 1 On
`:SETUP:ITEM:IR`	Insulation resistance — item on/off	Enum: 0 Off · 1 On
`:SETUP:ITEM:ALL`	Bulk-set — writes all 9 item on/off flags in one command	9 comma-separated values

NOTE
To configure the DCW or insulation-resistance (IR) tab, use the individual field commands above (`:SETUP:HV:VOLT`, `:SETUP:HV:SPEC`, `:SETUP:HV:TIME`, etc.) with that tab selected on the instrument.

SECTION 6

:TRIG / :STOP / :LEARN — Trigger & Learn

Command	Function	Notes
`:TRIG or :START`	Starts a test	Requires Trigger mode = Bus (Operation Manual §7.1.1).
`:STOP`	Stops the current test	—
`:LEARN`	Runs a learn cycle	Requires Trigger mode = Bus; the learned network is returned once the scan completes.

SECTION 7

:FETCH — Result Readback

See Operation Manual Chapter 6. Typical sequence: set Trigger mode to Bus, send `:TRIG`, then one or more `:FETCH` queries.

Command	Function
`:FETCH:COND?`	Conduction-resistance test result
`:FETCH:ICOND?`	Transient-conduction-resistance test result
`:FETCH:ICMAX?`	Maximum conduction resistance recorded per net during the transient-conduction test
`:FETCH:ICMIN?`	Minimum conduction resistance recorded per net during the transient-conduction test
`:FETCH:ACW?`	AC withstand-voltage test result
`:FETCH:DCW?`	DC withstand-voltage test result
`:FETCH:IR?`	Insulation-resistance test result
`:FETCH:AUTO`	Sets whether the instrument automatically returns the end-of-measurement (EOM) signal
`:FETCH:ALL<step>?`	Every test item's data and result for the given step
`:FETCH:NCOND?`	Conduction-resistance data and result (network form)
`:FETCH:OS?`	Short/open test data and result
`:FETCH:CROSS?`	Mismatched/cross-wired pin report
`:FETCH:STAT?`	Statistics data (Operation Manual §6.2)
`:FETCH:FILE?`	List of test files stored in the instrument
`:FETCH:USB?`	List of test files on the connected USB drive
`:FETCH:ITEM?`	The current item selection (Operation Manual §4.6)
`:FETCH:NET:COND?`	Conduction test network table
`:FETCH:NET:HV?`	High-voltage test network table

`:FETCH:NET:LCR?`	Component test network table

SECTION 8

:SYS:MEAS — Test-Tab System Settings

See Operation Manual §7.1.1.

Command	Function	Data / range
:SYS:MEAS:TRIGM	Trigger mode	Enum: 0 Manual · 1 External · 2 Bus · 3 Automatic
:SYS:MEAS:DELAY	Trigger delay	NR2, 0 – 99.9 s
:SYS:MEAS:MEASM	Test mode	Enum: 0 Normal · 1 Repeat · 2 Sequential
:SYS:MEAS:RPT	Repeat count	NR1, 0 – 999
:SYS:MEAS:INTV	Test interval	NR2, 0 – 99.9 s
:SYS:MEAS:FAIL	Fail-after action	Enum: 0 Complete all · 1 Stop test · 2 Skip HV
:SYS:MEAS:DISPM	Display mode	Enum: 0 Show all · 1 Show fails only · 2 Auto
:SYS:MEAS:PROGM	Sequence trigger mode	Enum: 0 Key-triggered · 1 Continuous · 2 Automatic
:SYS:MEAS:PIN	Point-test fail action	Enum: 0 Repeat · 1 Next step
:SYS:MEAS:TYPEC	Type-C dual-station mode	Enum: 0 Off · 1 On
:SYS:MEAS:EARLY	Early-removal detection	Enum: 0 Off · 1 On
:SYS:MEAS:PULL	Removal check	Enum: 0 Off · 1 On
:SYS:MEAS:PINS	Start-point count	NR1 (0 = point-test / no minimum)
:SYS:MEAS:EMARK	Chip (EMARK) delay	NR2

SECTION 9

:SYS:ENVI — Environment-Tab Settings

See Operation Manual §7.1.2.

Command	Function	Data / range
:SYS:ENVI:KEYV	Key sound	Enum: 0 Off · 1 On
:SYS:ENVI:VOLM	Buzzer volume	Enum: 0 Off · 1 Low · 2 Medium · 3 High
:SYS:ENVI:KLOCK	Key-lock mode	Enum: 0 Manual · 1 Bus
:SYS:ENVI:PASSV	Pass sound	Enum: 0 Off · 1 On
:SYS:ENVI:FAILV	Fail sound	Enum: 0 Off · 1 On
:SYS:ENVI:BRI	Screen brightness	NR1, 0–10
:SYS:ENVI:DATE	System date	Year, month, day
:SYS:ENVI:TIME	System time	Hour, minute, second

SECTION 10

:FILE — File Transfer

See Operation Manual §6.3.

Command	Function
`:FILE:SAVE`	Saves the current test file
`:FILE:LOAD`	Loads a stored test file
`:FILE:SEND`	Sends a setup file (≈6 kB) from the controlling PC to the instrument
`:FILE:RECE`	Retrieves a setup file from the instrument to the controlling PC

SECTION 11

:DISP / :STAT — Display & Statistics

Command	Function
`:DISP`	Display-page control command set — selects which page (MEAS, LEARN, STAT, FILE, SYS, UTILI, or a SETUP tab) is shown on screen
`:STAT:CLEAR`	Clears the accumulated pass/fail statistics (Operation Manual §6.2)