

## TRL Calibration Coefficient Installation for ICM CALIBRATION KIT Series TRL-300x on HP8753 Series

### PREFACE:

This procedure is valid for series TRL-300x calibration kits.

(This example uses the TRL-3004A calibration kit)

### INSTRUCTION CRITERIA:

- Comments and suggestions are contained in parenthesis
- Screen menu keys are in *ITALICS*
- Data or hard keys are in **BOLDFACE**

### EQUIPMENT:

**HP 8753ES with disk drive**

**ICM TF-3001-B P/N A0107124**

**ICM TRL-3004A P/N A0105088A**

**Standard Definitions for TRL-3004A FOR HP8753 Series**

**5/16" Torque Wrench**

**ICM Application Note 111 "Mainframe/TRL Calibration Trouble  
Shooting Guide"**

For background information on the HP8753 Network Analyzer, please refer to the HP operating manual.

## **START INSTALLATION:**

Select **CAL** (located in RESPONSE area of front panel)

Select *CAL KIT* [...] (could be any internal coaxial cal kit)

Depress *MODIFY* [...]

## **DEFINING SHORT STANDARD:**

- Depress *DEFINE STANDARD* (screen will display CALIBRATION STANDARD # x)

Enter **1** then **x1**

- Depress *SHORT*
- Depress *MODIFY STD. DEFINITION*
- Depress *SPECIFY OFFSET*
- Depress *OFFSET DELAY*

Enter **- 0 . 0 7 7** then **G/n** (Active area should read -77ps)

- Depress *OFFSET LOSS*

Enter **0** then **x1** (Active area should read 0 Ohms/s)

- Depress *OFFSET Z0*

Enter **5 0** then **x1** (Active area should read 50 Ohms)

- Depress *MINIMUM FREQUENCY* (should read 0), otherwise enter 0 then x1
- Depress *MAXIMUM FREQUENCY*

Enter **6 . 1** then **G/n** (Active area should read 6.1 GHz)

- Depress *COAX*
- Depress *STD OFFSET DONE*
- Depress *LABEL STD*
- Depress *ERASE TITLE*
- The label is created by the operator using the rotary knob and screen menu keys (For this example, use **S H O R T**)
- Depress *DONE*
- Depress *STD DONE (DEFINED)*

### **DEFINING MATCH STANDARD:**

- Depress *DEFINE STANDARD* (screen will display CALIBRATION STANDARD # x)

Enter **5** then **x1**

- Depress *LOAD*
- Depress *MODIFY STD. DEFINITION*
- Depress *FIXED*
- Depress *SPECIFY OFFSET*
- Depress *OFFSET DELAY*

Enter **0 . 0 0 1** then **G/n** (Active area should read 1ps)

- Depress *OFFSET LOSS*

Enter **0** then **x1** (Active area should read 0 Ohms/s)

- Depress *OFFSET Z0*

Enter **5 0** then **x1** (Active area should read 50 Ohms)

- Depress *MINIMUM FREQUENCY*

Enter **0** then **G/n** (Active area should read 0 Hz)

- Depress *MAXIMUM FREQUENCY*

Enter **0 . 5 0 1** then **G/n** (Active area should read 501 MHz)

- Depress *COAX*
- Depress *STD OFFSET DONE*
- Depress *LABEL STD*
- Depress *ERASE TITLE*
- The label is created by the operator using the rotary knob and screen menu keys (For this example, use **M A T C H**)
- Depress *DONE*
- Depress *STD DONE (DEFINED)*

### **DEFINING THRU / LINE STANDARD**

- Depress *DEFINE STANDARD* (screen will display CALIBRATION STANDARD # x)

Enter **4** then **x1**

- Depress *DELAY/THRU*
- Depress *MODIFY STD. DEFINITION*
- Depress *SPECIFY OFFSET*
- Depress *OFFSET DELAY*

Enter **0** then **x1** (Active area should read 0 s)

- Depress *OFFSET LOSS*

Enter **0** then **x1** (Active area should read 0 Ohms/s)

- Depress *OFFSET Z0*

Enter **5 0** then **x1** (Active area should read 50 Ohms)

- Depress *MINIMUM FREQUENCY* (should read 0), otherwise enter 0 then x1
- Depress *MAXIMUM FREQUENCY*

Enter **6 . 1** then **G/n** (Active area should read 6.1 GHz)

- Depress *COAX*
- Depress *STD OFFSET DONE*
- Depress *LABEL STD*
- Depress *ERASE TITLE*
- The label is created by the operator using the rotary knob and screen menu keys (For this example, use **T H R U**)
- Depress *DONE*
- Depress *STD DONE (defined)*

### **DEFINING LINE / MATCH STANDARD**

- Depress *DEFINE STANDARD* (screen will display CALIBRATION STANDARD # x)

Enter **6** then **x1**

- Depress *DELAY / THRU*
- Depress *MODIFY STD. DEFINITION*

- Depress *SPECIFY OFFSET*
- Depress *OFFSET DELAY*

Enter **0 . 0 2 6** then **G/n** (Active area should read 26 ps)

- Depress *OFFSET LOSS*

Enter **0** then **x1** (Active area should read 0 Ohms/s)

- Depress *OFFSET Z0*

Enter **5 0** then **x1** (Active area should read 50 Ohms)

- Depress *MINIMUM FREQUENCY*

Enter **0 . 4 9 9** then **G/n** (Active area should read 499 MHz)

- Depress *MAXIMUM FREQUENCY*

Enter **1 9** then **G/n** (Active area should read 19 GHz)

- Depress *COAX*
- Depress *STD OFFSET DONE*
- Depress *LABEL STD*
- Depress *ERASE TITLE*

The label is created by the operator using the rotary knob and screen menu keys  
(For this example, use **L I N E 1**)

- Depress *DONE*
- Depress *STD DONE* (defined)

### **CLASS ASSIGNMENTS:**

- Depress *SPECIFY CLASS*
- Depress *MORE*
- Depress *MORE*
- Depress *TRL REFLECT*

Enter **1** then **x1**

- Depress *TRL THRU*

Enter **4** then **x1**

- Depress *TRL LINE* or *MATCH*

Enter **5** then **x1** **6** then **x1**

- Depress *SPECIFY CLASS DONE*
- Depress *LABEL CLASS*
- Depress *MORE*
- Depress *MORE*
- Depress *TRL REFLECT*
- Depress *ERASE TITLE*
- The label is created by the operator using the rotary knob and screen menu keys (For this example, use **TRLSHORT**)
- Depress *DONE*
- Depress *TRL THRU*
- Depress *ERASE TITLE*
- The label is created by the operator using the rotary knob and screen menu keys (For this example, use **TRLTHRU**)
- Depress *DONE*
- Depress *TRL LINE* or *MATCH*
- Depress *ERASE TITLE*
- The label is created by the operator using the rotary knob and screen menu keys (For this example, use **TRLLINE**)
- Depress *DONE*
- Depress *LABEL CLASS DONE*
- Depress *LABEL KIT*
- Depress *ERASE TITLE*
- The label is created by the operator using the rotary knob and screen menu keys (For this example, use **TRL3004A**)
- Depress *DONE*
- Depress *KIT DONE (MODIFIED)*

- Depress *SAVE USER KIT*, (instrument will beep but no other menu will appear)
- Depress *RETURN*
- Depress *CAL KIT [TRL3004A]*
- Depress *SELECT CAL KIT*
- Depress *USER KIT*
- Depress *RETURN*
- Depress *RETURN*

**IT IS SUGGESTED THAT THE OPERATOR SAVES THIS CAL KIT TO DISK**

- Push **SAVE/RECALL** (located in INSTRUMENT STATE area of front panel)
- Depress *SELECT DISK*
- Insert a Floppy disk (must be double sided and formatted)
- Depress *INTERNAL DISK*
- Depress *RETURN*
- Depress *SAVE STATE* (display will show SAVING: INSTRUMENT STATE, then SAVING: CAL KIT, then a file name is assigned that will be used for recall later)
- END OF PROCEDURE

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