Calibration Coefficient Installation for ICM TRL-CALIBRATION KITS Series TRL-300x on HP8720

PREFACE:
This procedure is valid for series TRL-300x calibration kits (3 Line Standards).
(This example uses the TRL-3004B 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 8720 with disk drive
ICM TRL-3004A P/N A0105088B
Standard Definitions for TRL-3004B for HP8720
5/16" Torque Wrench
ICM Application Note 111 "Mainframe/TRL Calibration Trouble
Shooting Guide"
For background information on the H P8720 Network Analyzer, please refer to
the HP operating manual.

START INSTALLATION:
Select **CAL** (located in RESPONSE area of front panel)
Select *CAL KIT* […]
Depress *MODIFY* […]
DEFINING THRU STANDARD:
Depress *DEFINE STANDARD* (screen will
display CALIBRATION STANDARD # x)
Enter **4** then **x1** (located in ENTRY area of front panel)
Depress *DELAY/THRU*
Depress *MODIFY STD. DEFINITION*
Depress *SPECIFY OFFSET*
Depress *OFFSET DELAY*
Enter **0** then **x1**
Depress *OFFSET LOSS*
Enter **0** then **x1**
Depress *OFFSET Z0* (should read 50 Ohms), otherwise enter 50 then x1
Depress *MINIMUM FREQUENCY*
Enter **0** then **x1**
Depress *MAXIMUM FREQUENCY*
Enter **2 6 . 51 G/n**
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)
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DEFINING SHORT STANDARD:
Depress *DEFINE STANDARD*
Enter **1** then **x1**
Depress *SHORT*
Depress *MODIFY STD. DEFINITION*
Depress *SPECIFY OFFSET*
Depress *OFFSET DELAY*
Enter - **0. 0 7 9 5 G/n** (Active area should read -79.5pS)
Depress *OFFSET LOSS* (should read 0), otherwise enter 0 then x1
Depress *OFFSET Z0* (should read 50 Ohms), otherwise enter 50 then x1
Depress *MINIMUM FREQUENCY* (should read 0), otherwise enter 0 then x1
Depress *MAXIMUM FREQUENCY*
Enter **2 6 . 5 G/n** (should read 26.5 GHz)
Depress *COAX*
Depress *STD OFFSET DONE*
Depress *LABEL STANDARD*
Depress *ERASE TITLE*
The label is created by the operator using the rotary knob and screen
(For this example, use **S H O R T)**
Depress *DONE*
Depress *STD DONE (DEFINED)*
DEFINING MATCH or LOAD STANDARD
Depress *DEFINE STANDARD*
Enter **5** then **x1**
Depress *LOAD*
Depress *MODIFY STD. DEFINITION*
Depress *FIXED*
menu keys
Depress *SPECIFY OFFSET*
Depress *OFFSET DELAY*
Enter **0. 0 0 1 G/n** (Active area should read 1 pS)
Depress *OFFSET LOSS* (should read 0), otherwise enter 0 then x1
Depress *OFFSET Z0* (should read 50 Ohms), otherwise enter 50 then x1
Depress *MINIMUM FREQUENCY* (should read 0), otherwise enter 0 then x1
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 LINE 1 STANDARD
Depress *DEFINE STANDARD*
Enter **6** then **x1**

Depress *DELAY/THRU*
Depress *MODIFY STD. DEFINITION*
Depress *SPECIFY OFFSET*
Depress *OFFSET DELAY*
Enter **0 . 1 1 3 5 G/n** (Active area should read 113.5 pS)
Depress *OFFSET LOSS* (should read 0), otherwise enter 0 then x1
Depress *OFFSET Z0* (should read 50 Ohms), otherwise enter 50 then x1
Depress *MINIMUM FREQUENCY*
Enter **0. 4 9 9** then **G/n** (Active area should read 499 MHz)
Depress *MAXIMUM FREQUENCY*
Enter **3 . 5** then **G/n** (Active area should read 3.5 GHz)
Depress *COAX*
Depress *STD OFFSET DONE*
Depress *LABEL STANDARD*
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)*
DEFINING LINE 2 STANDARD
Depress *DEFINE STANDARD*
Enter **7** then **x1**
Depress *DELAY/THRU*
Depress *MODIFY STD. DEFINITION*
Depress *SPECIFY OFFSET*
Depress *OFFSET DELAY*
Enter **0. 0 4 5 G/n** (Should read 45 pS)
Depress *OFFSET LOSS* (should read 0), otherwise enter 0 then x1
Depress *OFFSET Z0* (should read 50 Ohms), otherwise enter 50 then x1
Depress *MINIMUM FREQUENCY* Enter **1 . 9 9** then
G/n (Active area should read 1.99 GHz)
Depress *MAXIMUM FREQUENCY* Enter **1 6 . 1** then
G/n (Active area should read 16.1 GHz)
Depress *COAX*
Depress *STD OFFSET DONE*
Depress *LABEL STANDARD*
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 2)**
Depress *DONE*
Depress *STD DONE (defined)*
DEFINING LINE 3 STANDARD
Depress *DEFINE STANDARD*
Enter **8** then **x1**
Depress *DELAY/THRU*
Depress *MODIFY STD. DEFINITION*
Depress *SPECIFY OFFSET*
Depress *OFFSET DELAY*
Enter **0. 0 2 9 G/n** (Should read 29 pS)
Depress *OFFSET LOSS* (should read 0), otherwise enter 0 then x1
Depress *OFFSET Z0* (should read 50 Ohms), otherwise enter 50 then x1
Depress *MINIMUM FREQUENCY* Enter **5 . 9 9** then
G/n (Active area should read 5.99 GHz)
Depress *MAXIMUM FREQUENCY* Enter **2 6 . 5 1** then

G/n (Active area should read 26.51 GHz)

Depress *COAX*

Depress *STD OFFSET DONE*

Depress *LABEL STANDARD*

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 3)**

Depress *DONE*

Depress *STD DONE (defined)*

CLASS ASSIGNMENTS:

Depress *SPECIFY CLASS*

Depress *MORE*

Depress *MORE*

Depress *TRL THRU*

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

Depress *TRL REFLECT*

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

Depress *TRL LINE OR MATCH*

Enter **5** then **x1 6** then **x1 7** then **x1 8** then **x1**

Depress *SPECIFY CLASS DONE*

Depress *LABEL CLASS*

Depress *MORE*

Depress *MORE*

Depress *TRL THRU*

Depress *ERASE TITLE*

The label is created by the operator using the

(For this example, use **T H R U)**

Depress *DONE*

Depress *TRL REFLECT*

Depress *ERASE TITLE*

The label is created by the operator using the

(For this example, use **SHORT)**

Depress *DONE*

Depress *TRL LINE OR MATCH*

Depress *ERASE TITLE*

rotary knob and screen menu keys

rotary knob and screen menu keys

The label is created by the operator using the rotary knob and screen menu keys

(For this example, use **L123+MATCH)**

Depress *DONE*

Depress *LABEL CLASS DONE*

Depress *TRL/LRM OPTION* (Verify that LINE Z0 and SET REF. THRU are underlined, otherwise Depress LINE Z0 and THRU)

Depress *RETURN*

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 **TRL-3004B)**

Depress *DONE*

Depress *KIT DONE (MODIFIED)*

Depress *SAVE USER KIT,* (instrument will beep but no other menu will appear)

Depress *RETURN*

Depress *CAL KIT [TRL-3004B]*

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.
END OF PROCEDURE

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