



B6141617

**INSTRUCTIONS FOR CALIBRATION KIT**  
**TRL-3004A, ICM P/N: A0105088A, Rev. 1.0**  
25 mil alumina microstrip, 660 mil THRU length

**This Calibration Kit contains all the necessary standards for:**

- A) TRL - Calibration on HP8510, DC - 26.5 GHz.
- B) TRL - Calibration on HP8720/22, DC - 26.5 GHz.
- C) TRL - Calibration on HP8753, DC - 6 GHz.

**For TRL Calibration use the standards in the following sequence:**

SHORT Standard  
MATCH Standard  
LINE 1 Standard  
LINE 2 Standard  
THRU Standard

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**TRL - STANDARD COEFFICIENT**  
**TRL-3004A, ICM P/N: A0105088A, Rev. 1.0**  
**FOR HP 8510**

Filename: 05088A

STANDARD		C0	C1	C2	C3	FIXED OR	TERMINAL	OFFSET			FREQUENCY (GHz)		COAX OR	STANDARD
No.	Type	$\times 10^{-15} F$	$\times 10^{-27} F/Hz$	$\times 10^{-36} F/Hz^2$	$\times 10^{-45} F/Hz^3$	SLIDING	IMPEDANCE	DELAY	Z <sub>0</sub>	LOSS	LOWER	UPPER	WAVEGUIDE	LABEL
							$\Omega$	ps	$\Omega$	$G\Omega/s$				
13														
14	DELAY					FIXED		0	50	0	0	26.51	COAX	THRU
15	DELAY					FIXED		1	50	0	0	2.01	COAX	MATCH
16	DELAY					FIXED		26	50	0	1.99	15.9	COAX	LINE 1
17	DELAY					FIXED		18	50	0	5.99	26.51	COAX	LINE 2
18	SHORT					FIXED		-77	50	0	0	26.51	COAX	SHORT
19														
20														
TRL-Option:		Cal Zo: Line Zo												
		Set Ref: THRU												

**TRL STANDARD CLASS ASSIGNMENTS**  
**TRL-3004A, ICM P/N: A0105088A, Rev. 1.0**  
**FOR HP 8510**

	A	B	C	D	E	F	G	Standard Class Label
S <sub>11</sub> A								
S <sub>11</sub> B								
S <sub>11</sub> C								
S <sub>22</sub> A								
S <sub>22</sub> B								
S <sub>22</sub> C								
Forward Transmission								
Reverse Transmission								
Forward Match								
Reverse Match								
Forward Isolation <sup>1</sup>								
Reverse Isolation								
Frequency Response								
TRL Thru	14							TRL Thru
TRL Reflect	18							TRL Short
TRL Line	15	16	17					TRL LINE/MATCH
Adapter								
TRL-Option	CAL Z <sub>0</sub> :	LINE Z <sub>0</sub> :						
	Set Ref:	THRU						

1. Forward Isolation Standard is also used for Isolation part of Response and Isolation calibration

**TRL\* - STANDARD COEFFICIENT**  
**TRL-3004A, ICM P/N: A0105088A, Rev. 1.0**  
**for HP8720 with TRL\***

	A	B	C	D	E	F	G	Standard Class Label
TRL THRU	4							TRL THRU
TRL REFLECT	1							TRL SHORT
TRL LINE/MATCH	5	6	7					TRL LINE/MATCH

**TRL\* STANDARD CLASS ASSIGNMENTS**  
**AND STANDARD DEFINITIONS TABLE**

STANDARD		C0 x10 <sup>-15</sup> F	C1 x10 <sup>-27</sup> F/Hz	C2 x10 <sup>-36</sup> F/Hz <sup>2</sup>	C3 x10 <sup>-45</sup> F/Hz <sup>3</sup>	FIXED OR SLIDING	TERMINAL IMPEDANCE	OFFSET			FREQUENCY (GHz)		COAX OR WAVEGUIDE	STANDARD LABEL
No.	Type							DELAY	Z <sub>0</sub>	LOSS	LOWER	UPPER		
						Ω	ps	Ω	GΩ/s					
1	SHORT					FIXED		-77	50	0	0	26.51	COAX	SHORT
2														
3														
4	THRU					FIXED		0	50	0	0	26.51	COAX	THRU
5	DELAY					FIXED		1	50	0	0	2.01	COAX	LOAD
6	DELAY					FIXED		26	50	0	1.99	15.9	COAX	LINE 1
7	DELAY					FIXED		18	50	0	5.99	26.51	COAX	LINE 2
TRL-Option:		Cal Zo: Line Zo												
		Set Ref: THRU												

Note: For installation of the calibration coefficients on HP8720 please use : "**Calibration Coefficient Installation for ICM TRL-Calibration Kits on HP8720.**"

For TRL\*-Calibration on HP8720 please use: "**ICM TRL-Calibration Procedure for HP8720D**".

These procedures can be found on our website: [www.icmicrowave.com](http://www.icmicrowave.com) under "Application Notes".

**TRL\* - STANDARD COEFFICIENT**  
**TRL-3004A, ICM P/N: A0105088A, Rev. 1.0**  
**for HP8753 with TRL**

	A	B	C	D	E	F	G	Standard Class Label
TRL THRU	4							TRL THRU
TRL REFLECT	1							TRL SHORT
TRL LINE/MATCH	5	6						TRL LINE/MATCH

**TRL\* STANDARD CLASS ASSIGNMENTS**  
**AND STANDARD DEFINITIONS TABLE**

STANDARD		C0 x10 <sup>-15</sup> F	C1 x10 <sup>-27</sup> F/Hz	C2 x10 <sup>-36</sup> F/Hz <sup>2</sup>	C3 x10 <sup>-45</sup> F/Hz <sup>3</sup>	FIXED OR SLIDING	TERMINAL IMPEDANCE $\Omega$	OFFSET			FREQUENCY (GHz)		COAX OR WAVEGUIDE	STANDARD LABEL
No.	Type							DELAY ps	Z <sub>0</sub> $\Omega$	LOSS G $\Omega$ /s	LOWER	UPPER		
1	SHORT					FIXED		-77	50	0	0	6.1	COAX	SHORT
2														
3														
4	THRU					FIXED		0	50	0	0	6.1	COAX	THRU
5	DELAY					FIXED		1	50	0	0	2.01	COAX	LOAD
6	DELAY					FIXED		26	50	0	1.99	6.1	COAX	LINE 1
7	DELAY					FIXED								LINE 2
TRL-Option:		Cal Zo: Line Zo												
		Set Ref: THRU												

<- Not Used

Note: For installation of the calibration coefficients on HP8753 please use : "**Calibration Coefficient Installation for ICM TRL-Calibration Kits on HP8753.**"

These procedures can be found on our website: [www.icmicrowave.com](http://www.icmicrowave.com) under "Application Notes".

File Name: B6141617 for TRL-3004A, A0105088A, Updated 3/14/2008