



**Model CM-3 Calibration Verification  
INSTRUCTION MANUAL**

**CheckSum LLC**

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Specifications and operational characteristics of the System are subject to change.  
CheckSum LLC cannot take responsibility for any direct or consequential damages  
arising from use of this manual or the related product.

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## Limited Warranty

CheckSum, LLC products, exclusive of fixturing products, are covered by a one-year limited parts and labor warranty for defects in materials and workmanship from time of original product shipment. Fixturing products (TR-3, TR-5, TR-7, TR-9, and Analyst series) include a 90-day limited warranty. This warranty extends only to the original purchaser and excludes products or parts that have been subject to misuse, neglect, accident, or abnormal conditions of operations.

CheckSum, LLC reserves the right to replace the product in lieu of repair. If the failure has been caused, as determined by CheckSum, by misuse, neglect, accident, or abnormal conditions of operation, repairs will be invoiced at a nominal cost. In such case, an estimate will be submitted before the work is started, if requested.

**THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS, OR ADEQUACY FOR ANY PARTICULAR PURPOSE OR USE. CHECKSUM LLC SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN CONTRACT, TORT, OR OTHERWISE.**

In the event of a failure of a product during the warranty period:

1. Contact CheckSum for a returned material authorization number (RMA).
2. Pack the product in its original packing material or suitable equivalent and return it postage-paid to CheckSum LLC.
3. Mark the package clearly with the RMA number.
4. CheckSum will repair the product and return it postage-paid. Repairs are typically completed within two working days of receipt.

In the event that expedited repair is necessary, call CheckSum for information. In many cases a replacement module can be provided immediately.



# Chapter 1

## Overview

The Model CM-3 is designed to provide calibration and performance verification for CheckSum ICT/Manufacturing Defects Analyzers (ICT/MDA) such as the Models TR-4, TR-8, and Analyst series (TR-10). The CM-3 has three primary and distinct functions:

### ***Self-Tests***

The CM-3 has a built-in 50-pin shorting plug, on connector P1, which is used for example as part of the self-test and characterize the test points of Test System Multiplexers (MPX modules) and part of the self-test of the DIG-1 module.

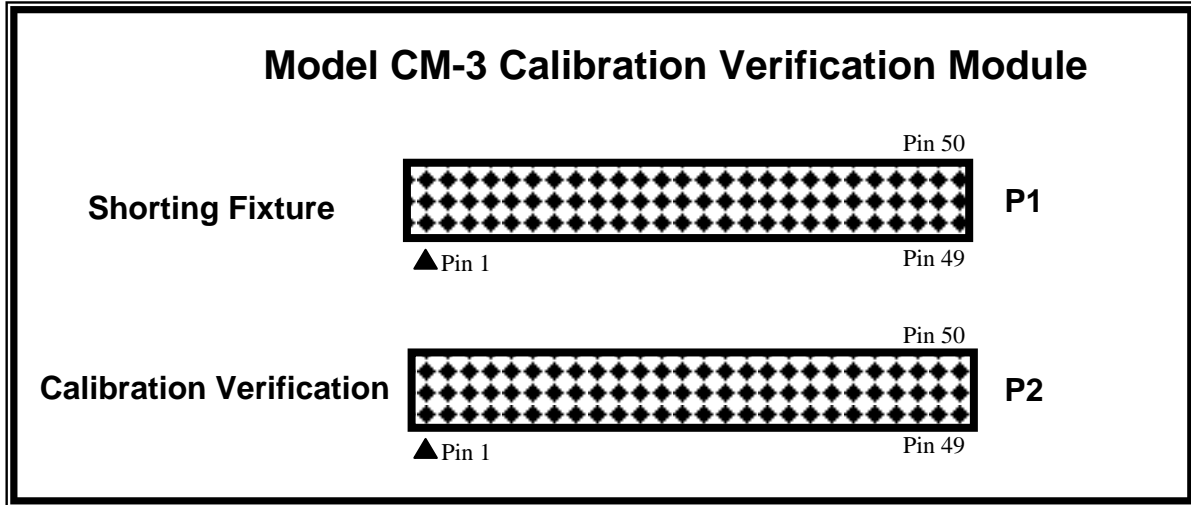
### ***ICT Calibration/Verification***

The CM-3 has an array of precision resistors, capacitors and inductors, on connector P2, that are used to calibrate and provide traceability for CheckSum impedance measurement functions of the ICT (In-Circuit Test system).

### ***SMT TestJet Calibration***

The CM-3 has the necessary resistors built-in to calibrate the sensitivity of the Model's SMT-2, TR-8-SMT, TR-8-SMT-CAP, and Analyst SMT TestJet modules.

The Model CM-3 has connectors P1 and P2 on the front of the unit, see below:



### MPX Self-Test Using the CM-3 Shorting Fixture (P1)

After installation, and from time to time, it is necessary to verify the integrity of the Test Systems Multiplexer (MPX) modules and the cables. This is accomplished by executing the Configuration Self-Test on the MPX modules.

#### ***Standalone CM-3 Module***

During the self-test, the operator is instructed to connect each cable, one at a time, to a shorting fixture. Connector P1 on the CM-3 provides the shorting fixture capability.

#### ***Fixture Kit with an Enclosed CM-3 Module***

During the self-test, the operator is instructed to connect to a shorting fixture. Connector P1 on the CM-3 provides the shorting fixture capability. The top 50-pin connector at the back of the fixture connects to test points 1-50. When instructed to connect a shorting fixture to test points 1-50 (or 1-200) be sure to have the short cable on the top of the fixture connected between the back (Test Points 1 – 50) connector and the P1 connector during the self-test. For Self-Test All, the fixture has all of the other necessary pins shorted.

### ***Caution***

**The target blocks in the CM-3 Calibration Fixture are shorted for the system self-test. If any power supplies are connected to the interface of your fixture press, damage may result when the CM-3 fixture is installed. Contact CheckSum for further details.**



- 
- The CM-3-KIT600-QC has test points 51-400 shorted inside the fixture kit on the 200-pin blocks A & B.
  - The CM-3-KIT1000-QC has test points 51-800 shorted inside the fixture kit on the 200-pin blocks A, B, C & D.
  - The CM-3-KIT2KN has test points 51-1800 shorted inside the fixture kit on the 200-pin blocks A, B, C, D, F, G, H, J, & K.
  - The CM-3-KITILS has test points 51-2100 shorted inside the fixture kit on the 200-pin blocks J2 through J36 (including DIG-1 #1 & #2).

Depending on your test system configuration, the remaining test points will be either shorted or not. Be sure to check to be sure that any shorted pins will not cause a problem with the test system resources. Some of the CheckSum test system modules, such as the TR-6, cannot have their test points shorted together. If they are shorted together accidentally, replacement fuses for the unswitched, power supply outputs are available.

## Test System Impedance Measurement Calibration (P2)

The CheckSum ICT/Manufacturing Defects Analyzers utilize various impedance measuring techniques to verify the performance of loaded circuit boards and components under test.

**Self-Test:** To ensure that the ICT System is performing correctly, it is necessary to periodically exercise the internal self-test routines. These self-test routines check for correct functionality and also compensate for component variations by characterizing the System against built-in reference elements permanently installed in the measurement modules. CheckSum recommends that this procedure be carried out at six-month intervals.

The Model CM-3 Calibration Accessory allows you to periodically supplement the internal self-test described above by verification using external reference standards. This accessory contains a set of precision components that, when traceably calibrated and used to verify the Test System, provide the recommended performance verification. CheckSum recommends that this procedure be carried out at six-month intervals.

The Model CM-3 is checked for correct performance at the CheckSum factory. In addition, a traceable calibration certificate may be ordered by specifying Model CM-CAL.

## TestJet Calibration Using the Model CM-3

After installation, and from time to time, it is necessary to calibrate the sensitivity of the SMT and/or SMT-CAP Test System TestJet Modules. This is accomplished by executing the Configuration Self-test on each of the SMT and SMT-CAP modules. During the self-test, the operator is instructed to connect the System to the Model CM-3 connectors P1 and P2, where P1 is connected to Test Points 1-50 and P2 is connected to the appropriate SMT Module.

## ICT System Calibration Using the Model CM-3

After the self-test procedure described above has been completed, for Test System Calibration, connect test points 1-50 of the System into connector P2 of the CM-3. No other test point connections are used for the calibration. If you have a CM-3 enclosed in a fixture kit, the connector at the back of the fixture kit is connected to test points 1-50. Be sure to have the short cable on the top of the fixture connected between the back connector and the P2 connector during the calibration test.

The Model CM-3 calibration test files are provided on the CD shipped with this accessory. The appropriate file should be copied to the System's Test Program directory (normally C:\CHECKSUM\SPECFILE). The test files are named:

- MDACAL\_EMS for the Model TR-10 Analyst *ems*, Analyst *ems+ft*, Analyst *ils*
- MDACAL\_TR8 for any Model TR-8 system
- MDACAL\_ANFT for the Model TR-10 Analyst *ft*
- MDACAL\_ANMC for the Analyst *mc*
- MDACAL\_TR4 for any Model TR-4 system

Calibration of the test system is performed by executing the test program file. A listing of these test files is included at the end of this manual.

These test files as shipped from CheckSum have nominal values entered for their precision components. The values may be modified to agree with a traceable calibration of the CM-3 by following the instructions included in the test file.

These test programs are executed in the same manner as any normal test program. After the test program is run, a printed copy of the results can be created as a permanent record.

The Model CM-3 can be purchased with the CAL option (Model CM-CAL), which provides a traceable calibration certificate. Alternatively, you may calibrate the CM-3 with your in-house standards and achieve traceability by that method.

Calibration of the CM-3 is facilitated by removing the 6 top cover screws and then connecting to each internal 2-pin connector adjacent to each precision component. Table 1 may be copied and used by your calibration facility for recording the characterized values. Table 2 shows the accuracy required of each calibrated component. Typically, the equipment used to calibrate the components should be at least 4 times more accurate than the required characterized value.

<b>Checksum Model CM-3 Calibration Verification Module</b>	
Serial Number: _____	
Date: _____	
Nominal Value	Characterized Value
10 ohm	
100 ohm	
1 Kohm	
10 Kohm	
100 Kohm	
1 Mohm	
1000 pF	
0.01 $\mu$ F	
0.1 $\mu$ F	
36 mH at 1 KHz	

**Table 1**

<b>Characterization Accuracy Requirements</b>		
<b>Component Designator</b>	<b>Component Value</b>	<b>Characterized Accuracy</b>
R1	10 ohm	2%
R2	100 ohm	0.1%
R3	1 Kohm	0.1%
R4	10 Kohm	0.1%
R5	100 Kohm	0.1%
R6	1 Mohm	1%
C1	1000 pF	2%
C2	0.01 $\mu$ F	1%
C3	0.1 $\mu$ F	1%
L1	36 mH	2% at 1KHz

**Table 2**

---

## What to do if a Test Fails

The best course of action depends on the failure.

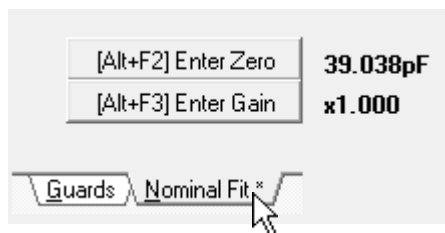
If every test step is failing, check the connections between the test system resources and the CM-3 connectors. Check the cable connections and if a Cal/Ver fixture is used, check the fixture interface to be sure the fixture is engaged and connected to the test fixture.

If the capacitance test for the 1000pF (0.001 $\mu$ F) test fails, for example, the capacitance test steps may need to be compensated for the system capacitance. The system capacitance is variable with each specific test system. The system cables are the major contributing factor. The solution is to automatically subtract this system capacitance from the measurement. The software provides this function and the test program must be modified/edited on-site to do this.

Follow these steps: First, insure the short 50-pin cable from Test Point 1-50 is not connected to P1 or to P2. From the software start-up window select **Edit Test** or press the **F2** function key. Select **Open** if a dialog box appears or use the menu item *File* and click on *Open*. In the Open File dialog box, select the appropriate test program, see ICT System Calibration Using the Model CM-3 on page 10. After the program is loaded, use the menu item *Tools > Measure Offsets > Capacitance* and select *All Steps* and click *OK*. This feature will measure the capacitance of the system and modify the capacitance test program steps. The modification will change all of the capacitance steps to store the measured value (system capacitance) and subtract this value from the readings in the future. The effect is to subtract the system capacitance from the capacitor component measurements.

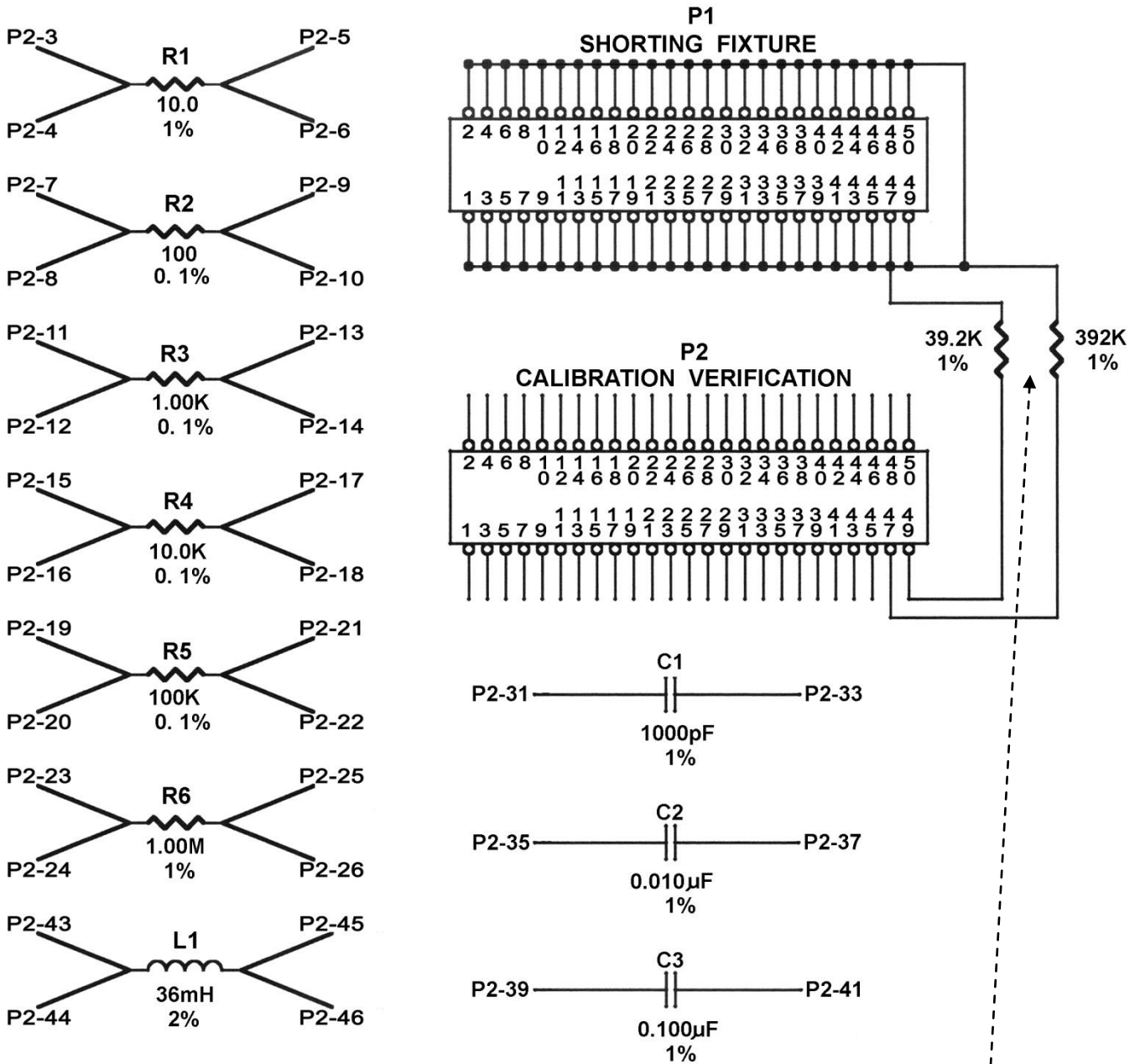
Be sure to save this modified version of the Cal/Ver test program.

To see the system capacitance measurement, click on any **Cap** test step and press the **F6** function key. This will open the *Measurement Analysis* window. Click on the tab at the bottom labeled **Nominal Fit**. You should see the system capacitance measurement “**Zero**” value, such as:



The asterisk after **Nominal Fit \*** indicates some zero, gain or other factor is used for this measurement.

## CM-3 Internal Components and Pin Connections



Note: These two SMT resistors are wired internally to the SMT #1 fixture interface position, to the SMT pins with the same numbers as P2.

## Test Program Listings





Test Program Listing

Testing Facility: CheckSum LLC  
 Assembly Name: TR-10 CALIBRATION with CM-3  
 File Name: MDACAL\_EMS.SPEC  
 File Date: Feb 5, 2013  
 Time: 11:25  
 Test System: CheckSum Analyst ems

---From---	----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Point	Name	Point	Name	Type	Range	Title	Low	High		Nom
				ResRg	11		1.0000	10.000		
				ResRg	12		1.0000	10.000		
				Jmp		start				
				Label		measurements				
				DispE	0					
3	R1-SO-	5	R1-SO+	Res	524	DC 10 OHM	9.5707	10.429		10.000
4	R1-SE-	6	R1-SE+	External sense						
7	R2-SO-	9	R2-SO+	Res	513	DC 100 OHM	98.099	101.90		100.00
8	R2-SE-	10	R2-SE+	External sense						
7	R2-SO-	9	R2-SO+	Res	560	AC 100 OHM	98.499	101.50		100.00
8	R2-SE-	10	R2-SE+	External sense						
11	R3-SO-	13	R3-SO+	Res	514	DC 1K OHM	981.00	1.0190K		1.0000K
12	R3-SE-	14	R3-SE+	External sense						
11	R3-SO-	13	R3-SO+	Res	560	AC 1K OHM	989.41	1.0105K		1.0000K
12	R3-SE-	14	R3-SE+	External sense						
15	R4-SO-	17	R4-SO+	Res	515	DC 10K OHM	9.8100K	10.190K		10.000K
16	R4-SE-	18	R4-SE+	External sense						
15	R4-SO-	17	R4-SO+	Res	1584	AC 10K OHM	9.8994K	10.100K		10.000K
16	R4-SE-	18	R4-SE+	External sense						
19	R5-SO-	21	R5-SO+	Res	516	DC 100K OHM	98.099K	101.90K		100.00K
20	R5-SE-	22	R5-SE+	External sense						
19	R5-SO-	21	R5-SO+	Res	2608	AC 100K OHM	97.995K	102.00K		100.00K
20	R5-SE-	22	R5-SE+	External sense						
23	R6-SO-	25	R6-SO+	Res	517	DC 1M OHM	960.73K	1.0393M		1.0000M
24	R6-SE-	26	R6-SE+	External sense						
23	R6-SO-	25	R6-SO+	Res	3616	AC 1M OHM	958.77K	1.0412M		1.0000M
24	R6-SE-	26	R6-SE+	External sense						
31	C1-	33	C1+	Cap	3120	.001uF	937.00p	1063.0p		1000.0p
				Zero:		39.038pF				
35	C2-	37	C2+	Cap	49	.01uF	9491.0p	0.0105u		0.0100u
				Zero:		38.117pF				
39	C3-	41	C3+	Cap	49	.1uF	0.0949u	0.1051u		0.1000u
				Zero:		36.151pF				
43	L1-SO-	45	L1-SO+	Induc	560	36mH	34.063m	37.940m		36.000m
44	L1-SE-	46	L1-SE+	External sense						
				Jmp		end				

```

Label      start
  Rem      Rev 20130205
  Rem      CAL TYPE
MemS      43 GET SYSTEM      0.000  0.000
MemS      15 SWAP MEMS/C    0.000  0.000
MemS      1  Analyst ems    0.000  0.000
MemS      20 Analyst ems    0.000  0.000
MemS      1  Analyst ems+ft 0.000  0.000
MemS      20 Analyst ems+ft 0.000  0.000
DispE     0
  Disp    19 Wrong system
  Disp    16
WaitK     0
  Jmp     finish
Label     Analyst ems+ft
  Safe    OFF
Label     Analyst ems
1         2
FixCt     9 Connect DM-1    0.0000 0.0000
  Disp    17
  MemS    3 31.000 5.0000
  MemS    13 0.000 0.000
  MemI    1 0.000 0.000
  Disp    11
  Disp    12
Label     waitforkey
  JmpK    78 measurements
  JmpK    89 entry
  Jmp     waitforkey
Label     entry
  MemI    1 1.0000 0.000
DispE     0
  Disp    1
  Rem     10 ohm
  Disp    18
  MemR    3 58.000 5.0000
  MemR    23 Set 10 8.0000 12.000
  Jmp     J1
Label     Set 10
  MemR    1 10.000 0.000
Label     J1
  MemR    19 7.0000 7.0000
  MemR    11 1.0429 0.000
  MemR    19 5.0000 5.0000
  MemR    11 917.70m 0.000
  MemR    19 4.0000 4.0000
  Rem     100 ohm
  Disp    2
  MemR    3 58.000 5.0000
  MemR    23 Set 100 90.000 110.00
  Jmp     J2
Label     Set 100
  MemR    1 100.00 0.000
Label     J2
  MemR    19 7.0000 7.0000
  MemR    19 7.0000 7.0000
  MemR    11 1.0190 0.000
  MemR    19 5.0000 5.0000
  MemR    11 962.70m 0.000
  MemR    19 4.0000 4.0000

```

---

MemR	11	1.0347	0.000	
MemR	19	5.0000	5.0000	
MemR	11	970.40m	0.000	
MemR	19	4.0000	4.0000	
Rem		1000 ohm		
Disp	3			
MemR	3	58.000	5.0000	
MemR	23	Set 1000	900.00	1.1000K
Jmp		J3		
Label		Set 1000		
MemR	1	1.0000K	0.000	
Label		J3		
MemR	19	7.0000	7.0000	
MemR	19	7.0000	7.0000	
MemR	11	1.0190	0.000	
MemR	19	5.0000	5.0000	
MemR	11	962.71m	0.000	
MemR	19	4.0000	4.0000	
MemR	11	1.0301	0.000	
MemR	19	5.0000	5.0000	
MemR	11	979.10m	0.000	
MemR	19	4.0000	4.0000	
Rem		10k ohm		
Disp	4			
MemR	3	58.000	5.0000	
MemR	23	Set 10K	9.0000	11.000
Jmp		J4		
Label		Set 10K		
MemR	1	10.000	0.000	
Label		J4		
MemR	11	1.0000K	0.000	
MemR	19	7.0000	7.0000	
MemR	19	7.0000	7.0000	
MemR	11	1.0190	0.000	
MemR	19	5.0000	5.0000	
MemR	11	962.71m	0.000	
MemR	19	4.0000	4.0000	
MemR	11	1.0296	0.000	
MemR	19	5.0000	5.0000	
MemR	11	980.10m	0.000	
MemR	19	4.0000	4.0000	
Rem		100k ohm		
Disp	5			
MemR	3	58.000	5.0000	
MemR	23	Set 100K	90.000	110.00
Jmp		J5		
Label		Set 100K		
MemR	1	100.00	0.000	
Label		J5		
MemR	11	1.0000K	0.000	
MemR	19	7.0000	7.0000	
MemR	19	7.0000	7.0000	
MemR	11	1.0190	0.000	
MemR	19	5.0000	5.0000	
MemR	11	962.70m	0.000	
MemR	19	4.0000	4.0000	
MemR	11	1.0398	0.000	
MemR	19	5.0000	5.0000	
MemR	11	960.70m	0.000	

---

---

MemR	19	4.0000	4.0000	
Rem		1M ohm		
Disp	6			
MemR	3	58.000	5.0000	
MemR	23	Set 1M	900.00m	1.1000
Jmp		J6		
Label		Set 1M		
MemR	1	1.0000	0.000	
Label		J6		
MemR	11	1.0000M	0.000	
MemR	19	7.0000	7.0000	
MemR	19	7.0000	7.0000	
MemR	11	1.0393	0.000	
MemR	19	5.0000	5.0000	
MemR	11	924.40m	0.000	
MemR	19	4.0000	4.0000	
MemR	11	1.0838	0.000	
MemR	19	5.0000	5.0000	
MemR	11	920.80m	0.000	
MemR	19	4.0000	4.0000	
Rem		1000pF		
Disp	7			
MemR	3	58.000	5.0000	
MemR	23	Set 1000pf	800.00	1.2000K
Jmp		J7		
Label		Set 1000pf		
MemR	1	1.0000K	0.000	
Label		J7		
MemR	11	1.0000p	0.000	
MemR	19	7.0000	7.0000	
MemR	11	1.0632	0.000	
MemR	19	5.0000	5.0000	
MemR	11	881.00m	0.000	
MemR	19	4.0000	4.0000	
Rem		.01uF		
Disp	8			
MemR	3	58.000	5.0000	
MemR	23	Set .01uF	8.0000m	12.000m
Jmp		J8		
Label		Set .01uF		
MemR	1	10.000m	0.000	
Label		J8		
MemR	11	1000.0n	0.000	
MemR	19	7.0000	7.0000	
MemR	11	1.0510	0.000	
MemR	19	5.0000	5.0000	
MemR	11	903.00m	0.000	
MemR	19	4.0000	4.0000	
Rem		.1uF		
Disp	9			
MemR	3	58.000	5.0000	
MemR	23	Set .1u	80.000m	120.00m
Jmp		J9		
Label		Set .1u		
MemR	1	100.00m	0.000	
Label		J9		
MemR	11	1000.0n	0.000	
MemR	19	7.0000	7.0000	
MemR	11	1.0510	0.000	

---

```

MemR      19 5.0000  5.0000
MemR      11 903.00m  0.000
MemR      19 4.0000  4.0000
Rem       36mH
Disp      10
MemR       3 58.000  5.0000
MemR     23 Set 36 25.000 45.000
Jmp       J10
Label     Set 36
MemR       1 36.000  0.000
Label     J10
MemR     11 1000.0u  0.000
MemR     19 7.0000  7.0000
MemR     11 1.0539  0.000
MemR     19 5.0000  5.0000
MemR     11 897.80m  0.000
MemR     19 4.0000  4.0000
Jmp       measurements
Label     end
MemI     21 finish  0.000 500.00m
Disp      13
Disp      14
Disp      15
Disp      20
Disp      16
WaitK     0
Label     finish
1          2      FixCt      8 Disconnect DM-1 0.0000  0.0000
    
```

Displays:

No	Col	Row	Display
1,	4,	5,	Enter the Characterized Value for
2,	38,	5,	R2 in Ohms (100.0)
3,	38,	5,	R3 in Ohms (1000)
4,	38,	5,	R4 in KOhms (10.00)
5,	38,	5,	R5 in KOhms (100.0)
6,	38,	5,	R6 in MOhms (1.000)
7,	38,	5,	C1 in pF (1000)
8,	38,	5,	C2 in uF (.01000)
9,	38,	5,	C3 in uF (.1000)
10,	38,	5,	L1 in mH (36.00)
11,	4,	5,	Do you wish to enter the characterized
12,	4,	6,	values for the CM-3 Calibration Accessory [Y/N] ?
13,	4,	2,	You have changed the Nominal Values for this test file.
14,	4,	3,	If you wish to save them, you will have to access the
15,	4,	4,	"Edit Test" feature
16,	28,	7,	Press any key to continue
17,	6,	5,	Enter CM-3 Serial Number
18,	38,	5,	R1 in Ohms (10.00)
19,	13,	5,	This program should be run on an Analyst ems System Only
20,	24,	4,	and SAVE this modified file.

End of Data

Test Program Listing

Testing Facility: CheckSum, Inc.
Assembly Name: TR-8 CALIBRATION with CM-3
File Name: MDACAL\_TR8
File Date: Jan 16, 2001
Time: 10:30
Test System: CheckSum Model TR-8 MDA

Table with columns: Point, Name, Point, Name, Type, Range, Title, Low, High, Nom. Rows include test points 3-41 for resistors (R1-R6) and capacitors (C1-C3) with various ranges and limits.

```

43  L1-SO  45  L1-SO Induc  560          36mH 34.063m 37.940m 36.000mH
44  L1-SE  46  L1-SE  External sense
      Jmp          end
      Label        start
      Rem          CAL TYPE
      Rem          Version 3.1
      MemS         1          TR-8  0.000  0.000
      MemS        15  SWAP MEMS/C  0.000  0.000
      MemS         1          TR-8  0.000  0.000
      MemS        43  GET SYSTEM  0.000  0.000
      MemS        20          TR-8  0.000  0.000
      DispE        0
      Disp        19  Its not TR-8
      Disp        16
      WaitK        0
      Jmp          finish
      Label        TR-8
      Disp        17
      MemS         3          31.000  5.0000
      MemS        13          0.000  0.000
      MemI         1          0.000  0.000
      Disp        11
      Disp        12
      Label        waitforkey
      JmpK        78  measurements
      JmpK        89          entry
      Jmp          waitforkey
      Label        entry
      MemI         1          1.0000  0.000
      DispE        0
      Disp        1
      Rem          10 ohm
      Disp        18
      MemR         3          58.000  5.0000
      MemR        19          6.0000  7.0000
      MemR        11          1.0429  0.000
      MemR        19          6.0000  5.0000
      MemR        11          917.70m  0.000
      MemR        19          6.0000  4.0000
      Rem          100 ohm
      Disp        2
      MemR         3          58.000  5.0000
      MemR        19          7.0000  7.0000
      MemR        19          8.0000  7.0000
      MemR        11          1.0190  0.000
      MemR        19          7.0000  5.0000
      MemR        11          962.70m  0.000
      MemR        19          7.0000  4.0000
      MemR        11          1.0347  0.000
      MemR        19          8.0000  5.0000
      MemR        11          970.40m  0.000
      MemR        19          8.0000  4.0000
      Rem          1000 ohm
      Disp        3

```

MemR	3	58.000	5.0000
MemR	19	9.0000	7.0000
MemR	19	10.000	7.0000
MemR	11	1.0190	0.000
MemR	19	9.0000	5.0000
MemR	11	962.71m	0.000
MemR	19	9.0000	4.0000
MemR	11	1.0301	0.000
MemR	19	10.000	5.0000
MemR	11	979.10m	0.000
MemR	19	10.000	4.0000
Rem		10k ohm	
Disp	4		
MemR	3	58.000	5.0000
MemR	11	1.0000K	0.000
MemR	19	11.000	7.0000
MemR	19	12.000	7.0000
MemR	11	1.0190	0.000
MemR	19	11.000	5.0000
MemR	11	962.71m	0.000
MemR	19	11.000	4.0000
MemR	11	1.0296	0.000
MemR	19	12.000	5.0000
MemR	11	980.10m	0.000
MemR	19	12.000	4.0000
Rem		100k ohm	
Disp	5		
MemR	3	58.000	5.0000
MemR	11	1.0000K	0.000
MemR	19	13.000	7.0000
MemR	19	14.000	7.0000
MemR	11	1.0190	0.000
MemR	19	13.000	5.0000
MemR	11	962.70m	0.000
MemR	19	13.000	4.0000
MemR	11	1.0398	0.000
MemR	19	14.000	5.0000
MemR	11	960.70m	0.000
MemR	19	14.000	4.0000
Rem		1M ohm	
Disp	6		
MemR	3	58.000	5.0000
MemR	11	1.0000M	0.000
MemR	19	15.000	7.0000
MemR	19	16.000	7.0000
MemR	11	1.0393	0.000
MemR	19	15.000	5.0000
MemR	11	924.40m	0.000
MemR	19	15.000	4.0000
MemR	11	1.0838	0.000
MemR	19	16.000	5.0000
MemR	11	920.80m	0.000
MemR	19	16.000	4.0000
Rem		1000pF	



```

Disp      7
MemR      3          58.000  5.0000
MemR     11          1.0000p  0.000
MemR     19          17.000  7.0000
MemR     11          1.0632  0.000
MemR     19          17.000  5.0000
MemR     11          881.00m  0.000
MemR     19          17.000  4.0000
Rem
Rem      .01uF
Disp      8
MemR      3          58.000  5.0000
MemR     11          1000.0n  0.000
MemR     19          18.000  7.0000
MemR     11          1.0510  0.000
MemR     19          18.000  5.0000
MemR     11          903.00m  0.000
MemR     19          18.000  4.0000
Rem
Rem      .1uF
Disp      9
MemR      3          58.000  5.0000
MemR     11          1000.0n  0.000
MemR     19          19.000  7.0000
MemR     11          1.0510  0.000
MemR     19          19.000  5.0000
MemR     11          903.00m  0.000
MemR     19          19.000  4.0000
Rem
Rem      36mH
Disp     10
MemR      3          58.000  5.0000
MemR     11          1000.0u  0.000
MemR     19          20.000  7.0000
MemR     11          1.0539  0.000
MemR     19          20.000  5.0000
MemR     11          897.80m  0.000
MemR     19          20.000  4.0000
Jump      measurements
Label     end
MemI     21          finish  0.000  500.00m
Disp     13
Disp     14
Disp     15
Disp     20
Disp     16
WaitK    0
Label     finish
    
```

Displays:

No	Col	Row	Display
1,	4,	5,	Enter the Characterized Value for
2,	38,	5,	R2 in Ohms (100.0)
3,	38,	5,	R3 in Ohms (1000)
4,	38,	5,	R4 in KOhms (10.00)
5,	38,	5,	R5 in KOhms (100.0)

6, 38, 5, R6 in MOhms (1.000)  
7, 38, 5, C1 in pF (1000)  
8, 38, 5, C2 in uF (.01000)  
9, 38, 5, C3 in uF (.1000)  
10, 38, 5, L1 in mH (36.00)  
11, 4, 5, Do you wish to enter the characterized  
12, 4, 6, values for the CM-3 Calibration Accessory [Y/N] ?  
13, 4, 2, You have changed the Nominal Values for this test file.  
14, 4, 3, If you wish to save them you will have to access the  
15, 4, 4, "Learn an Assembly (DOS) / Edit Test (Visual MDA)" feature  
16, 28, 7, Press any key to continue  
17, 4, 5, Enter Serial Number of UUT  
18, 38, 5, R1 in Ohms (10.00)  
19, 17, 5, This program should be run on a TR-8 System Only  
20, 4, 5, and save the file to disk.

End of Data



Test Specification Report

Testing Facility: CheckSum, Inc.  
 Assembly Name: TR-4 CALIBRATION with CM-3  
 File Name: MDACAL\_TR4  
 Report Date: Jul 17, 2003  
 Time: 9:56  
 Test System: CheckSum Model TR-4 MDA

Port	From Name	Port	To Name	Type	Range	Title	Low	High	Nom
				ResRg	11		1.0000	10.000	
				ResRg	12		1.0000	10.000	
				Jump		start			
				Label		measurements			
				DispE	0				
3	R1-SO	5	R1-SO	Res	513	DC 10 OHM	8.1000	11.900	10.000
	4	R1-SE	6	R1-SE	External sense				
7	R2-SO	9	R2-SO	Res	513	DC 100 OHM	98.100	101.90	100.00
	8	R2-SE	10	R2-SE	External sense				
7	R2-SO	9	R2-SO	Res	560	AC 100 OHM	98.500	101.50	100.00
	8	R2-SE	10	R2-SE	External sense				
11	R3-SO	13	R3-SO	Res	514	DC 1K OHM	981.00	1.0190K	1.0000K
	12	R3-SE	14	R3-SE	External sense				
11	R3-SO	13	R3-SO	Res	560	AC 1K OHM	989.40	1.0105K	1.0000K
	12	R3-SE	14	R3-SE	External sense				
15	R4-SO	17	R4-SO	Res	515	DC 10K OHM	9.8099K	10.190K	10.000K
	16	R4-SE	18	R4-SE	External sense				
15	R4-SO	17	R4-SO	Res	1584	AC 10K OHM	9.8993K	10.100K	10.000K
	16	R4-SE	18	R4-SE	External sense				
19	R5-SO	21	R5-SO	Res	516	DC 100K OHM	96.202K	103.80K	100.00K
	20	R5-SE	22	R5-SE	External sense				
19	R5-SO	21	R5-SO	Res	2608	AC 100K OHM	96.996K	103.00K	100.00K
	20	R5-SE	22	R5-SE	External sense				
23	R6-SO	25	R6-SO	Res	517	DC 1M OHM	904.44K	1.0955M	1.0000M
	24	R6-SE	26	R6-SE	External sense				
23	R6-SO	25	R6-SO	Res	3616	AC 1M OHM	968.37K	1.0316M	1.0000M
	24	R6-SE	26	R6-SE	External sense				
31	C1	33	C1	Cap	3120	.001uF	937.00p	1063.0p	1000.0pF
				Zero:		39.038p			
35	C2	37	C2	Cap	49	.01uF	9491.0p	0.0105u	0.0100uF
				Zero:		38.117p			
39	C3	41	C3	Cap	49	.1uF	0.0949u	0.1051u	0.1000uF
				Zero:		36.151p			
43	L1-SO	45	L1-SO	Induc	560	36mH	34.063m	37.940m	36.000mH
	44	L1-SE	46	L1-SE	External sense				
				Jump		end			
				Label		start			
				Rem		CAL TYPE			
				Rem		Version 3.1			
				MemS	1	TR-4	0.000	0.000	
				MemS	15	SWAP MEMS/C	0.000	0.000	
				MemS	1	TR-4	0.000	0.000	
				MemS	43	GET SYSTEM	0.000	0.000	
				MemS	20	TR-4	0.000	0.000	
				DispE	0				
				Disp	19	Its not TR-4			
				Disp	16				
				WaitK	0				
				Jump		finish			
				Label		TR-4			

Disp	17		
MemS	3	31.000	5.0000
MemS	13	0.000	0.000
MemI	1	0.000	0.000
Disp	11		
Disp	12		
Label		waitforkey	
JmpK	78	measurements	
JmpK	89	entry	
Jmp		waitforkey	
Label		entry	
MemI	1	1.0000	0.000
DispE	0		
Disp	1		
Rem		10 ohm	
Disp	18		
MemR	3	58.000	5.0000
MemR	19	6.0000	7.0000
MemR	11	1.1910	0.000
MemR	19	6.0000	5.0000
MemR	11	679.20m	0.000
MemR	19	6.0000	4.0000
Rem		100 ohm	
Disp	2		
MemR	3	58.000	5.0000
MemR	19	7.0000	7.0000
MemR	19	8.0000	7.0000
MemR	11	1.0190	0.000
MemR	19	7.0000	5.0000
MemR	11	962.70m	0.000
MemR	19	7.0000	4.0000
MemR	11	1.0347	0.000
MemR	19	8.0000	5.0000
MemR	11	970.40m	0.000
MemR	19	8.0000	4.0000
Rem		1000 ohm	
Disp	3		
MemR	3	58.000	5.0000
MemR	19	9.0000	7.0000
MemR	19	10.000	7.0000
MemR	11	1.0190	0.000
MemR	19	9.0000	5.0000
MemR	11	962.70m	0.000
MemR	19	9.0000	4.0000
MemR	11	1.0301	0.000
MemR	19	10.000	5.0000
MemR	11	979.10m	0.000
MemR	19	10.000	4.0000
Rem		10k ohm	
Disp	4		
MemR	3	58.000	5.0000
MemR	11	1.0000K	0.000
MemR	19	11.000	7.0000
MemR	19	12.000	7.0000
MemR	11	1.0190	0.000
MemR	19	11.000	5.0000
MemR	11	962.70m	0.000
MemR	19	11.000	4.0000
MemR	11	1.0296	0.000
MemR	19	12.000	5.0000
MemR	11	980.10m	0.000
MemR	19	12.000	4.0000
Rem		100k ohm	
Disp	5		
MemR	3	58.000	5.0000
MemR	11	1.0000K	0.000
MemR	19	13.000	7.0000
MemR	19	14.000	7.0000
MemR	11	1.0380	0.000
MemR	19	13.000	5.0000
MemR	11	926.80m	0.000



4, 38, 5, R4 in KOhms (10.00)  
5, 38, 5, R5 in KOhms (100.0)  
6, 38, 5, R6 in MOhms (1.000)  
7, 38, 5, C1 in pF (1000)  
8, 38, 5, C2 in uF (.01000)  
9, 38, 5, C3 in uF (.1000)  
10, 38, 5, L1 in mH (36.00)  
11, 4, 5, Do you wish to enter the characterized  
12, 4, 6, values for the CM-3 Calibration Accessory [Y/N] ?  
13, 4, 3, You have changed the Nominal Values for this test file.  
14, 4, 4, If you wish to save them you will have to access the  
15, 4, 5, "Learn an Assembly" feature and save the spec data to disk.  
16, 28, 7, Press any key to continue  
17, 4, 5, Enter Serial Number of UUT  
18, 38, 5, R1 in Ohms (10.00)  
19, 17, 5, This program should be run on a TR-4 System Only

End of data

=====  
 Test Program Listing

Testing Facility:            Checksum, Inc.  
 Assembly Name:             Analyst mc CAL with CM-3-KIT600  
 File Name:                 MDACAL\_ANMC  
 File Date:                 16 Jan 2001  
           Time:             10:40  
 Test System:               Checksum Analyst mc

=====  
 ---From---      ----To----      -----Test-----      --Limits--      --Nom--  
 Point   Name   Point   Name   Type   Range    Title      Low    High

Point	Name	Point	Name	Type	Range	Title	Low	High		
				ResRg	11		1.0000	10.000		
				ResRg	12		1.0000	10.000		
				Jump		start				
				Label		measurements				
				DispE	0					
3	R1-SO	5	R1-SO	Res	524	DC 10 OHM	9.3962	10.604	10.000	
4	R1-SE	6	R1-SE	External sense						
7	R2-SO	9	R2-SO	Res	513	DC 100 OHM	96.202	103.80	100.00	
8	R2-SE	10	R2-SE	External sense						
7	R2-SO	9	R2-SO	Res	560	AC 100 OHM	97.501	102.50	100.00	
8	R2-SE	10	R2-SE	External sense						
11	R3-SO	13	R3-SO	Res	514	DC 1K OHM	962.02	1.0380K	1.0000K	
12	R3-SE	14	R3-SE	External sense						
11	R3-SO	13	R3-SO	Res	560	AC 1K OHM	979.58	1.0206K	1.0000K	
12	R3-SE	14	R3-SE	External sense						
15	R4-SO	17	R4-SO	Res	515	DC 10K OHM	9.6202K	10.380K	10.000K	
16	R4-SE	18	R4-SE	External sense						
15	R4-SO	17	R4-SO	Res	1584	AC 10K OHM	9.6998K	10.300K	10.000K	
16	R4-SE	18	R4-SE	External sense						
19	R5-SO	21	R5-SO	Res	516	DC 100K OHM	96.202K	103.80K	100.00K	
20	R5-SE	22	R5-SE	External sense						
19	R5-SO	21	R5-SO	Res	2608	AC 100K OHM	96.998K	103.00K	100.00K	
20	R5-SE	22	R5-SE	External sense						
23	R6-SO	25	R6-SO	Res	517	DC 1M OHM	942.17K	1.0579M	1.0000M	
24	R6-SE	26	R6-SE	External sense						
23	R6-SO	25	R6-SO	Res	3616	AC 1M OHM	949.04K	1.0510M	1.0000M	
24	R6-SE	26	R6-SE	External sense						
31	C1	33	C1	Cap	3120	.001uF	937.00p	1063.0p	1000.0pF	
				Zero:			39.038p			
35	C2	37	C2	Cap	49	.01uF	9491.0p	0.0105u	10000pF	
				Zero:			38.117p			
39	C3	41	C3	Cap	49	.1uF	0.0949u	0.1051u	0.1000uF	
				Zero:			36.151p			



```

43  L1-SO  45  L1-SO Induc  560          36mH 34.063m 37.940m 36.000mH
44  L1-SE  46  L1-SE  External sense
      Jmp          end
      Label        start
      Rem          CAL TYPE
      Rem          Version 3.0
      MemS         1  Analyst mc  0.000  0.000
      MemS         15 SWAP MEMS/C 0.000  0.000
      MemS         1  Analyst mc  0.000  0.000
      MemS         43  GET SYSTEM 0.000  0.000
      MemS         20  Analyst mc  0.000  0.000
      DispE        0
      Disp         19  Its not mc
      Disp         16
      WaitK        0
      Jmp          finish
      Label        Analyst mc
      Disp         17
      MemS         3          31.000  5.0000
      MemS         13          0.000  0.000
      MemI         1          0.000  0.000
      Disp         11
      Disp         12
      Label        waitforkey
      JmpK         78 measurements
      JmpK         89          entry
      Jmp          waitforkey
      Label        entry
      MemI         1          1.0000  0.000
      DispE        0
      Disp         1
      Rem          10 ohm
      Disp         18
      MemR         3          58.000  5.0000
      MemR         19         6.0000  7.0000
      MemR         11         1.0604  0.000
      MemR         19         6.0000  5.0000
      MemR         11         886.10m  0.000
      MemR         19         6.0000  4.0000
      Rem          100 ohm
      Disp         2
      MemR         3          58.000  5.0000
      MemR         19         7.0000  7.0000
      MemR         19         8.0000  7.0000
      MemR         11         1.0380  0.000
      MemR         19         7.0000  5.0000
      MemR         11         926.80m  0.000
      MemR         19         7.0000  4.0000
      MemR         11         1.0655  0.000
      MemR         19         8.0000  5.0000
      MemR         11         951.20m  0.000
      MemR         19         8.0000  4.0000
      Rem          1000 ohm
      Disp         3

```

MemR	3	58.000	5.0000
MemR	19	9.0000	7.0000
MemR	19	10.000	7.0000
MemR	11	1.0380	0.000
MemR	19	9.0000	5.0000
MemR	11	926.80m	0.000
MemR	19	9.0000	4.0000
MemR	11	1.0609	0.000
MemR	19	10.000	5.0000
MemR	11	959.80m	0.000
MemR	19	10.000	4.0000
Rem		10k ohm	
Disp	4		
MemR	3	58.000	5.0000
MemR	11	1.0000K	0.000
MemR	19	11.000	7.0000
MemR	19	12.000	7.0000
MemR	11	1.0380	0.000
MemR	19	11.000	5.0000
MemR	11	926.80m	0.000
MemR	19	11.000	4.0000
MemR	11	1.0707	0.000
MemR	19	12.000	5.0000
MemR	11	941.70m	0.000
MemR	19	12.000	4.0000
Rem		100k ohm	
Disp	5		
MemR	3	58.000	5.0000
MemR	11	1.0000K	0.000
MemR	19	13.000	7.0000
MemR	19	14.000	7.0000
MemR	11	1.0380	0.000
MemR	19	13.000	5.0000
MemR	11	926.80m	0.000
MemR	19	13.000	4.0000
MemR	11	1.0707	0.000
MemR	19	14.000	5.0000
MemR	11	941.70m	0.000
MemR	19	14.000	4.0000
Rem		1M ohm	
Disp	6		
MemR	3	58.000	5.0000
MemR	11	1.0000M	0.000
MemR	19	15.000	7.0000
MemR	19	16.000	7.0000
MemR	11	1.0579	0.000
MemR	19	15.000	5.0000
MemR	11	890.60m	0.000
MemR	19	15.000	4.0000
MemR	11	1.1155	0.000
MemR	19	16.000	5.0000
MemR	11	903.00m	0.000
MemR	19	16.000	4.0000
Rem		1000pF	

```

Disp      7
MemR      3          58.000  5.0000
MemR     11          1.0000p  0.000
MemR     19          17.000  7.0000
MemR     11          1.0632  0.000
MemR     19          17.000  5.0000
MemR     11          881.00m  0.000
MemR     19          17.000  4.0000
Rem
Rem      .01uF
Disp      8
MemR      3          58.000  5.0000
MemR     11          1000.0n  0.000
MemR     19          18.000  7.0000
MemR     11          1.0510  0.000
MemR     19          18.000  5.0000
MemR     11          903.00m  0.000
MemR     19          18.000  4.0000
Rem
Rem      .1uF
Disp      9
MemR      3          58.000  5.0000
MemR     11          1000.0n  0.000
MemR     19          19.000  7.0000
MemR     11          1.0510  0.000
MemR     19          19.000  5.0000
MemR     11          903.00m  0.000
MemR     19          19.000  4.0000
Rem
Rem      36mH
Disp     10
MemR      3          58.000  5.0000
MemR     11          1000.0u  0.000
MemR     19          20.000  7.0000
MemR     11          1.0539  0.000
MemR     19          20.000  5.0000
MemR     11          897.80m  0.000
MemR     19          20.000  4.0000
Jump      measurements
Label     end
MemI     21          finish  0.000  500.00m
Disp     13
Disp     14
Disp     15
Disp     16
WaitK    0
Label     finish
    
```

Displays:

No	Col	Row	Display
1,	4,	5,	Enter the Characterized Value for
2,	38,	5,	R2 in Ohms (100.0)
3,	38,	5,	R3 in Ohms (1000)
4,	38,	5,	R4 in KOhms (10.00)
5,	38,	5,	R5 in KOhms (100.0)
6,	38,	5,	R6 in MOhms (1.000)

7, 38, 5, C1 in pF (1000)  
8, 38, 5, C2 in uF (.01000)  
9, 38, 5, C3 in uF (.1000)  
10, 38, 5, L1 in mH (36.00)  
11, 4, 5, Do you wish to enter the characterized  
12, 4, 6, values for the CM-3 Calibration Accessory [Y/N] ?  
13, 4, 2, You have changed the Nominal Values for this test file.  
14, 4, 3, If you wish to save them you will have to access the  
15, 4, 4, "Edit Test" feature and save the file to disk.  
16, 28, 7, Press any key to continue  
17, 4, 5, Enter Serial Number of UUT  
18, 38, 5, R1 in Ohms (10.00)  
19, 16, 5, This program should only be run on an Analyst mc.

End of Data



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 Test Program Listing

Testing Facility:            Checksum, Inc.  
 Assembly Name:             Analyst ft CAL with CM3-KIT1000  
 File Name:                 MDACAL\_ANFT  
 File Date:                 Jan 16, 2001  
           Time:             10:39  
 Test System:               Checksum Analyst ft

=====  
 ---From---      ----To----      -----Test-----      --Limits--      --Nom--  
 Point    Name    Point    Name    Type    Range      Title            Low    High

Point	Name	Point	Name	Type	Range	Title	Low	High		
				ResRg	11		1.0000	10.000		
				ResRg	12		1.0000	10.000		
				Jump		start				
				Label		measurements				
				DispE	0					
3	R1-SO	5	R1-SO	Res	524	DC 10 OHM	9.5707	10.429	10.000	
4	R1-SE	6	R1-SE	External sense						
7	R2-SO	9	R2-SO	Res	513	DC 100 OHM	98.099	101.90	100.00	
8	R2-SE	10	R2-SE	External sense						
7	R2-SO	9	R2-SO	Res	560	AC 100 OHM	98.499	101.50	100.00	
8	R2-SE	10	R2-SE	External sense						
11	R3-SO	13	R3-SO	Res	514	DC 1K OHM	981.00	1.0190K	1.0000K	
12	R3-SE	14	R3-SE	External sense						
11	R3-SO	13	R3-SO	Res	560	AC 1K OHM	989.41	1.0105K	1.0000K	
12	R3-SE	14	R3-SE	External sense						
15	R4-SO	17	R4-SO	Res	515	DC 10K OHM	9.8100K	10.190K	10.000K	
16	R4-SE	18	R4-SE	External sense						
15	R4-SO	17	R4-SO	Res	1584	AC 10K OHM	9.8994K	10.100K	10.000K	
16	R4-SE	18	R4-SE	External sense						
19	R5-SO	21	R5-SO	Res	516	DC 100K OHM	98.099K	101.90K	100.00K	
20	R5-SE	22	R5-SE	External sense						
19	R5-SO	21	R5-SO	Res	2608	AC 100K OHM	97.995K	102.00K	100.00K	
20	R5-SE	22	R5-SE	External sense						
23	R6-SO	25	R6-SO	Res	517	DC 1M OHM	960.73K	1.0393M	1.0000M	
24	R6-SE	26	R6-SE	External sense						
23	R6-SO	25	R6-SO	Res	3616	AC 1M OHM	958.77K	1.0412M	1.0000M	
24	R6-SE	26	R6-SE	External sense						
31	C1	33	C1	Cap	3120	.001uF	937.00p	1063.0p	1000.0pF	
				Zero:			39.038p			
35	C2	37	C2	Cap	49	.01uF	9491.0p	0.0105u	10000pF	
				Zero:			38.117p			
39	C3	41	C3	Cap	49	.1uF	0.0949u	0.1051u	0.1000uF	
				Zero:			36.151p			

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43  L1-SO  45  L1-SO Induc  560          36mH 34.063m 37.940m 36.000mH
44  L1-SE  46  L1-SE  External sense
      Jmp          end
      Label       start
      Rem         CAL TYPE
      Rem         Version 3.1
      MemS        1  Analyst ft  0.000  0.000
      MemS        15 SWAP MEMS/C 0.000  0.000
      MemS        1  Analyst ft  0.000  0.000
      MemS        43  GET SYSTEM 0.000  0.000
      MemS        20  Analyst ft  0.000  0.000
      DispE       0
      Disp        19  Its not ft
      Disp        16
      WaitK       0
      Jmp         finish
      Label       Analyst ft
      Safe        OFF
      Disp        17
      MemS        3          31.000  5.0000
      MemS        13         0.000  0.000
      MemI        1          0.000  0.000
      Disp        11
      Disp        12
      Label       waitforkey
      JmpK        78 measurements
      JmpK        89  entry
      Jmp         waitforkey
      Label       entry
      MemI        1          1.0000  0.000
      DispE       0
      Disp        1
      Rem         10 ohm
      Disp        18
      MemR        3          58.000  5.0000
      MemR        19         6.0000  7.0000
      MemR        11         1.0429  0.000
      MemR        19         6.0000  5.0000
      MemR        11         917.70m  0.000
      MemR        19         6.0000  4.0000
      Rem         100 ohm
      Disp        2
      MemR        3          58.000  5.0000
      MemR        19         7.0000  7.0000
      MemR        19         8.0000  7.0000
      MemR        11         1.0190  0.000
      MemR        19         7.0000  5.0000
      MemR        11         962.70m  0.000
      MemR        19         7.0000  4.0000
      MemR        11         1.0347  0.000
      MemR        19         8.0000  5.0000
      MemR        11         970.40m  0.000
      MemR        19         8.0000  4.0000
      Rem         1000 ohm

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Disp	3		
MemR	3	58.000	5.0000
MemR	19	9.0000	7.0000
MemR	19	10.000	7.0000
MemR	11	1.0190	0.000
MemR	19	9.0000	5.0000
MemR	11	962.71m	0.000
MemR	19	9.0000	4.0000
MemR	11	1.0301	0.000
MemR	19	10.000	5.0000
MemR	11	979.10m	0.000
MemR	19	10.000	4.0000
Rem		10k ohm	
Disp	4		
MemR	3	58.000	5.0000
MemR	11	1.0000K	0.000
MemR	19	11.000	7.0000
MemR	19	12.000	7.0000
MemR	11	1.0190	0.000
MemR	19	11.000	5.0000
MemR	11	962.71m	0.000
MemR	19	11.000	4.0000
MemR	11	1.0296	0.000
MemR	19	12.000	5.0000
MemR	11	980.10m	0.000
MemR	19	12.000	4.0000
Rem		100k ohm	
Disp	5		
MemR	3	58.000	5.0000
MemR	11	1.0000K	0.000
MemR	19	13.000	7.0000
MemR	19	14.000	7.0000
MemR	11	1.0190	0.000
MemR	19	13.000	5.0000
MemR	11	962.70m	0.000
MemR	19	13.000	4.0000
MemR	11	1.0398	0.000
MemR	19	14.000	5.0000
MemR	11	960.70m	0.000
MemR	19	14.000	4.0000
Rem		1M ohm	
Disp	6		
MemR	3	58.000	5.0000
MemR	11	1.0000M	0.000
MemR	19	15.000	7.0000
MemR	19	16.000	7.0000
MemR	11	1.0393	0.000
MemR	19	15.000	5.0000
MemR	11	924.40m	0.000
MemR	19	15.000	4.0000
MemR	11	1.0838	0.000
MemR	19	16.000	5.0000
MemR	11	920.80m	0.000
MemR	19	16.000	4.0000



```

Rem          1000pF
Disp        7
MemR        3          58.000  5.0000
MemR       11          1.0000p  0.000
MemR       19          17.000  7.0000
MemR       11          1.0632  0.000
MemR       19          17.000  5.0000
MemR       11          881.00m  0.000
MemR       19          17.000  4.0000
Rem          .01uF
Disp        8
MemR        3          58.000  5.0000
MemR       11          1000.0n  0.000
MemR       19          18.000  7.0000
MemR       11          1.0510  0.000
MemR       19          18.000  5.0000
MemR       11          903.00m  0.000
MemR       19          18.000  4.0000
Rem          .1uF
Disp        9
MemR        3          58.000  5.0000
MemR       11          1000.0n  0.000
MemR       19          19.000  7.0000
MemR       11          1.0510  0.000
MemR       19          19.000  5.0000
MemR       11          903.00m  0.000
MemR       19          19.000  4.0000
Rem          36mH
Disp       10
MemR        3          58.000  5.0000
MemR       11          1000.0u  0.000
MemR       19          20.000  7.0000
MemR       11          1.0539  0.000
MemR       19          20.000  5.0000
MemR       11          897.80m  0.000
MemR       19          20.000  4.0000
Jump        measurements
Label      end
Safe      ON
MemI      21      finish  0.000  500.00m
Disp      13
Disp      14
Disp      15
Disp      16
WaitK     0
Label      finish
    
```

Displays:

No	Col	Row	Display
1,	4,	5,	Enter the Characterized Value for
2,	38,	5,	R2 in Ohms (100.0)
3,	38,	5,	R3 in Ohms (1000)
4,	38,	5,	R4 in KOhms (10.00)

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5, 38, 5, R5 in KOhms (100.0)  
6, 38, 5, R6 in MOhms (1.000)  
7, 38, 5, C1 in pF (1000)  
8, 38, 5, C2 in uF (.01000)  
9, 38, 5, C3 in uF (.1000)  
10, 38, 5, L1 in mH (36.00)  
11, 4, 5, Do you wish to enter the characterized  
12, 4, 6, values for the CM-3 Calibration Accessory [Y/N] ?  
13, 4, 2, You have changed the Nominal Values for this test file.  
14, 4, 3, If you wish to save them you will have to access the  
15, 4, 4, "Edit Test" feature and save the file to disk.  
16, 28, 7, Press any key to continue  
17, 4, 5, Enter Serial Number of UUT  
18, 38, 5, R1 in Ohms (10.00)  
19, 13, 5, This program should be run on an Analyst ft System Only

End of Data