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File: "readme611.txt"
Date: September 20, 2001
Software: MET/CAL V6.11

Welcome to MET/CAL V6.11. V6.11 is an update to MET/CAL, MET/TRACK and MET/TEMP. It is available at no charge to customers who have purchased V6.10, or who have purchased the "Gold" support package.

MET/CAL V6.11 is primarily a maintenance update of V6.10, although there are a number of significant new features as well.

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This document is divided into 13 sections:

1. What's New in V6.11

Description of significant new features in V6.11.

2. MET/CAL Run Time

Changes to the Run Time application. (Changes which affect both Run Time and Editor are included here.)

3. MET/CAL Editor

Changes to the Editor application.

4. MET/TRACK Manual Entry

Changes to the Manual Entry application.

5. MET/TRACK DB Setup

Changes to the DB Setup application.

6. MET/TRACK Import

Changes to the Import application.

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Changes to the DB Update application.

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9. MET/TEMP

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13. Contacting Fluke

How to contact Fluke with MET/CAL questions, problems,
or suggestions.

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Section 1 What's New in V6.11

(1) Fluke 525A Support

The Fluke 525A is a pressure and temperature calibrator. It's a new instrument with initial availability scheduled for October, 2001. The 525A outputs volts and mA, simulates RTDs and thermocouples, and measures thermocouples, RTDs, and pressure. It may be remotely controlled via a serial (RS232) interface. Refer to the on-line manuals for the "525" and "M525" FSCs for details on how to use MET/CAL to control the 525A.

(2) Fluke 9500B and Fluke 9560 Support

The Fluke 9500B is an enhanced version of the 9500 scope calibrator. It is available with 600, 1100, and 3200 MHz options. The Fluke 9560 is a new active head with a maximum frequency of 6.4 GHz.

The various 9500B models, and the active heads, may be configured for use with MET/CAL using the "Config Editor", available from the Run Time and Editor applications.

(3) Fluke 5000A RHT Support

The Fluke 5000A-RH/T is precision humidity and temperature data logger. MET/CAL V6.11 allows one or more RHTs to be integrated into the cal lab, so that current temperature and humidity values are logged with every calibration.

Networked installations in which two or more MET/CAL workstations share the same RH/T data logger are supported.

Refer to the separate file "rht.pdf" for details on how to use the RHT with MET/CAL.

(4) Wavetek 395 Support

The Wavetek 395 is an arbitrary waveform generator. The 395 is the premier universal signal source (both Arbitrary and Standard Waveforms) with 100 ms/s clock rate. The Wavetek 395 is supported on both the IEEE-488 and serial (RS232) interfaces. Refer to the on-line manuals for the "395" and "M395" FSCs for details on how to use MET/CAL to control the Wavetek 395.

Note:

On some PCs it is necessary to set the NI-488.2 Bus Timing parameter to 500 nanoseconds to communicate with the Wavetek 395. (This is also true for the Datron 9000, and there are probably other instruments which also require the slower bus timing setting. The default is 350 nanoseconds.) To increase the likelihood that IEEE-488 communication will be reliable on all PCs and with all instruments,

Fluke recommends that the bus timing parameter be set to 500 nanoseconds.

Configuring the NI-488.2 Bus Timing Parameter:

1. Choose Start=>Programs=>National Instruments
NI-488.2=>Getting Started Wizard.
2. Choose Configure your GPIB interface in the NI-488.2 Getting Started Wizard dialog.
3. Choose Next in the Configure your GPIB interface dialog.
4. Choose GPIB0 for GPIB Board.
5. Choose Configure.
6. Set Bus Timing to 500 nsec and choose OK.
7. Choose OK.
8. Close the Wizard dialog.

(5) Range Locking Datron 4x0x Calibrators

MET/CAL V6.11 adds support for range locking the Datron 4x0x calibrators. For each of the calibrators: 4000, 4000A, 4200, 4200A, 4700, 4705, 4707, 4708, 4800, 4800A, 4805, 4808 a corresponding auxiliary FSC has been added. The auxiliary FSC is used to specify the locked range. Refer to the on-line manuals for the M4000, M4200, M437, M45, M4700, M4705, M4707, M4708, M4800, M4800a, M4805, M4808, and M4950 FSCs for details.

(6) Support for Fluke 6100 Series Pressure Modules

In MET/CAL V6.11 the P6100 FSC programs the Fluke 525A Temperature/Pressure Calibrator to measure pressure using a Fluke 6100 Series Pressure Module.

Refer to the on-line help for the P6100 FSC for additional information.

Initial availability of Fluke 6100 Series Pressure Modules is scheduled for November or December 2001.

- (7) MET/CAL V6.11 includes Chinese translations for many of MET/CAL's menu items, window titles, error messages and other text strings. Chinese customers who wish to make use of these translations must have Chinese WINDOWS, "CStar", or equivalent software installed on their PCs. Please contact Professor Liu at Guokun.Liu@fluke.com.cn for assistance in utilizing MET/CAL's Chinese translations.

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Section 2 MET/CAL Run Time

----> Determination of 9500 Active Head Requirements

Procedure writers who write procedures which use the 9500 or 9500B scope calibrators should be aware of the necessity to write procedures so that the MET/CAL Run Time application correctly determines the list of references required by the procedure. For an active head (9510, 9520, 9530, 9550,

or 9560), required information includes the channel on which the head is configured.

For a detailed explanation of this issue, please read the section "DETERMINATION OF ACTIVE HEAD REQUIREMENT" near the end of the on-line help for the 9500 FSC. To access this help file in the MET/CAL Editor first type "9500" on a new line, then type F1 to bring up the on-line help. The information may also be found in the V6.11 Reference Manual Supplement, "RefManSupp611.pdf".

See also "Problems when Non-Required References are Used in a Procedure" (Report #13770) below for additional information on this topic.

----> New Report Includes Measurement Uncertainty

The V6.11 distribution includes two new files to support users who wish to save the measurement uncertainty rather than the T.U.R. in the result data. Use "rslt db mu.frm" rather than "rslt db.frm", and "rtrslt6 mu.rpt" instead of "rtrslt6.rpt" to save, and report, MU_EXP\$ (expanded measurement uncertainty) instead of TU\$ (test uncertainty ratio).

----> Incorrect Voltage Measurement Range in 5820 Accuracy File

Report #13326

The 5820A accuracy file lower range for voltage measurement is incorrect:

Mode: Volts VM

#	NOMINAL		MOD1		Tol.	Floor	Res.
#	-----		-----		-----	-----	-----
-6.6	6.6		NA	NA	0.05	1e-3	NA
-10	10		NA	NA	0.25	10e-3	NA

should be:

Mode: Volts VM

#	NOMINAL		MOD1		Tol.	Floor	Res.
#	-----		-----		-----	-----	-----
-5.99	5.99		NA	NA	0.05	1e-3	NA
-10	10		NA	NA	0.25	10e-3	NA

V6.11 corrects the accuracy file.

----> Measurement Uncertainty Calculated Incorrectly for Stimulus FSC in Meas Mode

Report #13396

In V6.10 there are a number of instances in which MET/CAL incorrectly characterizes the standard used in a test as a stimulus device. This happens in the following cases:

- (1) 5500, MOD3 is TM (thermocouple measurement)
- (2) 5520, MOD3 is TM (thermocouple measurement)
- (3) 5800, MOD3 is OM (overload measurement) or ZM (UUT input impedance measurement)
- (4) 5820, MOD3 is OM (overload measurement), ZM (UUT input impedance measurement), or VM (voltage measurement)

- (5) 9100, MOD3 is HV (Opt -135 High Voltage Resistance Opt -135, insulation mode) or CO (Opt -135 High Voltage Resistance, continuity mode)
- (6) 9500, MOD3 is ZM (UUT input impedance measurement)

In the above cases the measurement uncertainty calculation is either:

- (a) turned off completely because ASK+ K is not set, or
- (b) done incorrectly because the UUT readings are taken from an internal buffer used only for stimulus keyboard entry tests.

When measurement uncertainty is enabled for any of the above types of tests, the procedure writer must use a Nominal Setup Test (MOD4 = N) and MEMC or MEMCX instead of an Evaluation Test (MOD4 = <blank>) or Comparison Test (MOD4 = C).

Example:

```
2.007  5800      50.0Z      1.0U      ZM 2W
```

Should be written as:

```
2.001  5800      50.0Z      ZM N 2W
2.002  MEMC      50.0Z      1.0U
```

In addition, there is one case in which a stimulus device is incorrectly characterized as a measurement device. This happens in an "8903" statement when MOD3 is blank. This case is probably less of an issue, because the 8903 source is typically used in conjunction with a 8903 measurement evaluation.

V6.11 corrects this problem. MET/CAL now correctly determines whether a reference is a source device or a measurement device.

It is no longer necessary to rewrite procedures as shown in the example above.

----> 9500 Fast Edge (MOD3 = FE) Does Not Select 150 ps Risetime

Report #13405

In V6.10 the 9500 driver does not select the proper risetime for fast edge (MOD3 equal to " FE").

This mistake does not cause an error message, however, the 9500 scope calibrator operates in edge mode, not fast edge mode.

V6.11 corrects this mistake.

----> Arrive Date Field (4224) & Status Field (4225) Blank if Cal Fails

Report #13413

In V6.10, if the database is configured to blank the "Arrive Date" (4224) and the "Status" (4225) fields when a calibration passes, both fields are blanked when the Run Time application saves data, even if the calibration failed. The problem does not occur if Manual Entry is used to enter equivalent data.

V6.01 also exhibit this failure.

V6.11 corrects this problem.

----> MEMCX Incorrectly Sets A\$ when MEMCX Nominal Field Contains Value

Report #13440

V6.10 incorrectly sets the result variable "A\$" to "*" in some MEMCX tests, even though the formatted result value ("FRE") is never the System Actual value in a MEMCX test.

V6.11 has been changed so that the result variable "A\$" is always set to " " (blank) when the FSC is MEMCX. This is justified by the fact that "FRE\$" is always the UUT Indicated value for MEMCX, and "A\$" is supposed to be set to "*" only when "FRE\$" is the System Actual value.

----> 5500/5520 Stimulus Message Incorrect for Marker Signal

Report #13473

In V6.10 the output impedance is incorrect in the stimulus message generated by MET/CAL when a marker signal is being generated.

For example, executing a statement like:

```
5520      0.5000uT                      M2 S6 N L
```

generates a stimulus message "0.5 us, markers, Zo 0". However, the message should be "0.5 us, markers, Zo 50 Ohms". The problem has been corrected in V6.11.

----> 5820 Accuracy File Problem

Report #13479

The original accuracy file for the Fluke 5820A did not take into account the increased time base accuracy (compared to the 5800A).

V6.11 includes an accuracy file with corrected frequency specifications.

----> Support Added for Percent Duty Function in 9000 and 9100 FSCs

Report #13513

MET/CAL V6.10 does not support the "Percent of Duty" function of the Datron 9000 and 9001.

This is the function reached through the front panel by pressing the "Hz" button, then selecting the button on the bottom of the 9100 screen. It allows one to set and slew the percent of cycle, pulse period, Volts High, and Volts Low.

V6.11 supports the "Percent of Duty" function in the 9000 and 9100. Refer to the on-line manuals for these FSCs for details.

----> 5500/5520 Units Prefix Handled Incorrectly in TC Meas. Demo Mode

Report #13538

In V6.10, when a 5500 or 5520 thermocouple measurement statement contains a units prefix, the system actual value is calculated incorrectly when in demo mode. For example,

for the following statement, the Post Test dialog will report System Actual 1000 times too large. E.g., if 200000 mdegC is entered in demo mode, Post Test reports a System Actual of 200 kdegC.

1.002 5500 200000mdegC 1000U _K TM 2W

This error occurs only in Demo Mode. This problem has been corrected in V6.11.

----> 4950 Statement May Cause E8635: Query Error

Report #13561

In V6.10 execution of a 4950 statement may generate the following error:

E8635: Datron 4950: Query Error

It was demonstrated that this error occurred on two different 400MHz PCs, but not on a 300MHz PC. Furthermore, in the process of tracking down the problem, the query error did not occur when debug statements were enabled in the driver. This hinted strongly at a timing problem.

The driver, which is used by the 1271, 1281, and 4950 FSC's, uses SRQs to determine when a triggered reading is ready. Specifically, when an SRQ occurs, the SRQ handler first determines if there is any pending error. If not, it checks to see if the SRQ was expected and the Message Available (MES) bit is set in the status byte. If this is the case, the driver then sends the IEEE-488.2 Measurement Event Status Register query command (MESR?) and reads the response.

In V6.11 a 50 ms delay has been inserted between the IEEE-488 write "MESR?" and the subsequent IEEE-488 read to avoid a Query Error.

----> New 4950 MOD3 Code to Zero DCV, DCI, and Ohms

Report #13567

A new MOD3 code, "ZR", has been added to the 4950 FSC to support zeroing of DCV, DCI, and ohms. Refer to the on-line reference manual for the "4950" FSC.

----> P700 FSC handles Units Prefix Incorrectly in Demo Mode

Report #13539

In V6.10, when a P700 statement is executed in demo mode, the System Actual value is calculated incorrectly when the NOMINAL field contains a units prefix (for example, 'm' for milli). For example, if the statement specified a NOMINAL value of 200mpsi, the reported System Actual, in demo mode, will be 200psi. This value is 1000 times too large. The problem has been fixed in V6.11.

----> Unexpected SRQ from 1271, 1281, or 4950 May Cause GPF

Report #13598

In V6.10 an unexpected SRQ (IEEE-488 service request) generated by the Datron 1271, 1281, or 4950 may cause a general protection fault (GPF). The problem was due to incorrectly reporting the error condition. The problem has been corrected in V6.11.

----> Post Test Procedure List Statements are Truncated

Report #13605

In V6.10 the list box for the procedure list in the Run Time is about 4 characters short of being able to display a full procedure statement (like a DISP statement of maximum width.

In V6.11 the window, and the included List Box, are wider. They are now about as wide as possible (on a 640 X 480 display).

----> Keithley 2001/2002 Driver Generates Illegal SCPI Average Command

Report #13612

In V6.01 and V6.10 the MET/CAL driver for the Keithley 2001 and 2002 DMMs generated an illegal SCPI command. All "2001" and "2002" statements resulted in run time syntax errors, rendering these FSCs unusable in these versions of MET/CAL. V6.11 corrects the problem.

----> Keithley 2001/2002 Driver Can't Measure ACI Freq. Above 200 Hz

Report #13613

In V6.10 the Keithley 2001/2002 driver unconditionally programs AC coupling above 200 Hz. This works fine for ACV voltage and frequency measurement and ACI current measurement. However, the meter will not measure ACI frequency unless it is AC+DC coupled. This problem has been present since initial support for the 2001 and 2002 was added to MET/CAL (V4.2). In V6.11 AC+DC coupling is now selected for all AC current frequency measurement.

----> IEEE Output Construct Corrected for Files Greater Than 256 Bytes

Report #13618

In V6.10 the IEEE [0 < filename] special construction does not function correctly when the number of bytes in the file exceeds the size of the internal buffer used to hold data read from the file. The buffer size is 256. The problem is that MET/CAL attempts to disable readdressing the listener on the second and subsequent transfers to the listener. It can be presumed that the 'O' construction has never worked with NI boards.

In V6.11 the problem has been corrected. MET/CAL has been changed so that it does not re-address the instrument being written to prior to writing each buffer of data (when a multi-buffer transfer is required).

----> Possible MET/CAL Timeout Communicating with Datron 9000

Report #13635

In V6.10, on some PCs, certain legal 9000 statement may result in a timeout. Apparently, there is a known timing problem in the GPIB chip/firmware used in the 9000 which can cause this kind of problem on faster PCs.

In V6.11, a 100 ms delay has been inserted before and after all output to the Datron 9000. No timeouts were observed after this change was made.

----> Datron 4x0x FSCs Don't Support Negative Zero

Report #13639

In DCV and DCI there are two zero outputs, plus zero, and minus zero. These are different physical values, either because a different circuit is used, or because the same circuit is driven differently. In V6.10 there isn't any way to specify which zero is being used. V6.11 solves this problem by support "-Z" (minus zero) as a MOD2 code in the Datron 4x0x FSCs.

----> VSET MFILE Parameter does not Detect File Name Change

Report #13642

The VSET "MFILE" parameter should allow the output file to be changed during the course of procedure execution. However, due to a bug, the file name cannot be changed within a procedure once it has been initially specified.

For example,

```
ASK+ K U
VSET nmeas = 3
VSET mfile=meas1.txt mfile_format=verbose
5700 1V 1%
VSET mfile=meas2.txt
5700 2V 1%
```

This procedure should cause measurement uncertainty data for the first 5700 statement to be written to "meas1.txt" and measurement uncertainty data for the second 5700 statement to be written to "meas2.txt". In fact, in V6.10, the measurement uncertainty data for the second 5700 statement are appended to "meas1.txt" and "meas2.txt" is not used.

V6.11 corrects this problem.

----> "Correct.exe" Insert Operation Can't Take NOMINAL from MEM

Report #13644

The utility program "correct.exe" has been improved in V6.11 to allow the NOMINAL value to be taken from a MET/CAL memory register. The "insert" operation supports taking the NOMINAL value from MEM. The syntax is:

```
DOS -x correct.exe <ini file> <name> insert
                        "<mode string>" <nominal> [<mod1>]
```

If <nominal> does not include a numeric value, the value of MEM is used.

----> 33120 FSC Produces "Undefined Header" Error

Report #13645

In MET/CAL V6.10 the driver for the HP 33120A incorrectly attempts to program the instrument by sending the command "SCPI OUTPUT:STATE ON". This command is not supported by the 33120A.

MET/CAL V6.11 corrects this mistake.

----> Datron 4950 2W Lead No Longer Independent Traceable Asset

Report #13647

The 4950 2W lead is calibrated with the 4950. This is why the 4950 firmware checks to make sure that the serial number of the 2W lead used in application of the 4950 is the same serial number as the 2W lead that was used when the 4950 was last calibrated. In MET/CAL 6.10, support for the 4950 2W lead was implemented as an auxiliary device to the 4950. Auxiliary devices have their own asset number and calibration data in the database. Therefore, with the 6.10 implementation, when a 4950 is calibrated, the 4950 2W lead asset also has to have a new calibration record created. This is inconvenient because the two devices are always calibrated together.

In V6.11 the way MET/CAL handles the 4950 2W Lead has been modified as follows:

- (1) The MET/CAL Config Editor (F12) has been changed so that it is no longer possible (or necessary) to specify the 4950 2W Lead as an auxiliary device.
- (2) Upgrade customers who already have the 4950 2W Lead specified as an auxiliary device are not required to make any change to their system configuration files ("config.dat").
- (3) The V6.11 procedure compiler no longer generates the 4950 2W Lead as a required device listed in a procedure header "Configuration" line.
- (4) The Run Time has been modified to check just prior to procedure execution to see if the procedure about to be executed contains one or more 4950 statements which require the 2W lead. This information is then passed to the MET/CAL 4950 driver, which determines whether or not to prompt for a serial number.

Users who have specific questions about this change may contact either Dave.Martson@fluke.com or Dale.Chaudiere@fluke.com via email.

----> Measurement Uncertainty Error - Incorrect Confidence in Closed-Loop Test

Report #13646

In V6.10, MET/CAL tests which use instrument setup statements coupled with MEMC or MEMCX evaluations do not correctly determine the "confidence" from the accuracy file header. This leads to incorrect normalization of the system accuracy. The default confidence value, 2.0, is always used, rather than the confidence specified in the accuracy file header. (In practice, this leads to incorrect uncertainties only for accuracy files which specify a confidence different from 2.0. As of March 02, 2001 there were 124 accuracy files in the MET/CAL "acc" directory. 38 were 2 sigma, 83 were 2.58 sigma, and 3 were 3 sigma. The incorrect uncertainty errs on the conservative side. I.e., for 2.58 sigma and 3 sigma accuracy files the calculated uncertainty is slightly larger than it should be. There is a straightforward procedure-level work-around: a procedure writer can use a VSET statement to specify the correct confidence value (e.g., "VSET conf = 2.58"), which will then override the default

confidence (2.0).

V6.11 corrects this problem.

----> Run Time Error Involving Inventory Notes Field (I4260)

Report #13659

In V6.10 an error situation can be generated as follows:

- (1) Unsuppress field 4260, the Inventory Notes.
- (2) Enter an asset in Manual Entry with a lot of text (for example cut and paste "metcal.ini") in the notes field (of course, less than 32 kB).
- (3) Save the asset.
- (4) Start the Run Time and attempt to calibrate the asset.

The following error is generated:

(132gid)SQL Error::Data truncated

V6.11 corrects this problem.

----> Datron 9100 Resistance Specification Incorrect

Report #13676

The following section of the 9100 accuracy file version 1.21 is incorrect:

Mode: Ohms 4W HI						
#	NOMINAL		MOD1	Tol.	Floor	Res.
#	-----		-----	-----	-----	-----
0.40001e+6	4.00000e+6	NA	NA	0.020	100e+3	10

The floor value should be 100, not 100e+3.

The accuracy file distributed with MET/CAL V6.11 corrects this error.

----> 'Arrive' and 'Status' Cleared When Procedure Fails

Report #13679

Using MET/CAL Run Time V6.10, with the database setup to clear 4224 and 4225 only on a "PASS", both of these fields are cleared on an AS FOUND "FAIL". This problem does not occur in the Manual Entry application.

V6.11 corrects this problem.

----> Floating Point Exception Executing 9100 Statement in Demo Mode

Report #13680

Using MET/CAL V6.10 to execute the following procedure in Demo Mode:

1.001	ASK-	R		P	F	W
1.002	ASK+		K			
1.003	9100	20	19.99mV	2%	0.04U	2W

causes the error:

E4703: Floating point exception in Post Test calculation.

V6.11 corrects this problem.

----> Accuracy Error for 480x Wideband Frequency Above 1 MHz

Report #13692

In V6.10, Any 480x wideband statement with a frequency greater than 1 MHz in the NOMINAL field causes an accuracy file lookup error.

This is an error in the accuracy file lookup code, not in the accuracy files. The problem has been corrected in V6.11.

----> Stimulus Message Incorrect for 4x0x Statement w/ Frequency in NOMINAL

Report #13693

When a 4x0x statement has frequency in the NOMINAL field, the "Stimulus: ..." message in the Run Time window is incorrect. The Nominal value is used as the amplitude in addition to the frequency. This also means that a statement like:

4808 300H 3.5V S

causes the safety symbol to be displayed. This is because the amplitude is logged as 300V.

V6.11 corrects this problem.

----> Change to Default Serial Poll Timing for HP 8901/2/3

Report #13740

Using V6.10, a customer found that with an HP 8902, HP 8903, and HP 437 on the IEEE-488 bus he was unable zero the HP 437, due to low-level IEEE-488 communications problems.

It turned out that setting the optional initialization file parameter "serial_poll_slow" to 500 ms solved the problem. The default value is 200 ms. I.e., if "serial_poll_slow" is not specified, it defaults to 200 ms. 200 ms was adequate for the development system which was used when the 890X drivers were developed.

Note that at least two 890X devices must be configured to cause the "serial_poll_slow" delay to be used.

Since the application of the delay is specific to this case (2 or more 890X devices), increasing the delay to 500 ms will not slow down the system in general.

In V6.11 the default setting for the "serial_poll_slow" parameter has been increased from 200 to 500 ms.

The "serial poll slow" parameter, if specified, is in the [Startup] section of the initialization file ("metcal.ini").

----> Datron 4200/4200A Minimum AC Voltage Incorrect

Report #13743

In MET/CAL V6.10, the 4200 and 4200A FSCs restrict the minimum AC voltage to 0.1 mV. The minimum should be 0.09 mV. The minimum has been updated in the V6.11 release.

----> Datron 4705 Minimum AC Voltage Incorrect

Report #13744

In MET/CAL V6.10, the 4705 FSC restricts the minimum 4705 AC voltage to 0.1 mV. The minimum should be 0.09 mV. The minimum has been updated in the V6.11 release.

----> Datron 4805 Minimum AC Voltage Incorrect

Report #13745

In MET/CAL V6.10, the 4805 FSC restricts the minimum 4805 AC voltage to 0.1 mV. The minimum should be 0.09 mV. The minimum has been updated in the V6.11 release.

----> Device Substitution Incorrect for Datron 4800A

Report #13760

In V6.10 if a procedure is written which requires a Datron 4800A as a required standard, and there's no 4800A configured on the workstation, and there is a Datron 4800 configured on the workstation, the software incorrectly attempts to substitute a 4708, instead of a 4808, for the missing 4800A.

In V6.10 the work-around is to modify the procedure to use whatever instrument (4808 in this case) is actually configured on the workstation.

The problem has been corrected in V6.11.

----> Problems when Non-Required References are Used in a Procedure

Report #13770

In V6.10, because of the way the MET/CAL procedure language allows test information to be split between a main instrument FSC and an auxiliary FSC it is possible for procedure writers to structure a procedure in such a way that MET/CAL cannot correctly predetermine the list of required references for a procedure.

Consider the following example:

Main Procedure:

```
INSTRUMENT: 9500 Test
ASK- F V
M9500 CH1
9500 1mV 1kHz 2%
CALL 9500 Sub
9500 1mV 1kHz 2%
```

Subprocedure:

```
INSTRUMENT: 9500 Sub
M9500 CH2
```

Because the main procedure does not refer to channel 2, the configuration lines generated when the procedure is compiled will be:

```
CONFIGURATION: Datron 9500
CONFIGURATION: Datron 9510 on channel 1
```

Notice that the procedure compiler does not realize that

an active head (9510) is required on channel 2. This is because the subprocedure need not exist, or be available, when the main procedure is compiled, and also because the compiler cannot anticipate the actual run time execution sequence of procedure statements.

Notice also that the subprocedure will have no CONFIGURATION lines. This is because the M9500 statement does not directly control the 9500. An M9500 statement by itself represents no corresponding required reference(s), and, moreover, does not contain information required to complete a CONFIGURATION line. It indicates that something may be required on channel 2, but does not indicate what (could be 9510, 9520, 9530, 9550, or 9560).

The net effect here is that when a user runs the procedure the initial dialog which shows the list of required standards will list only the 9500 and the 9510 on channel 1. There's no indication that a 9510 on channel 2 is also required.

This can lead to a number of additional problem scenarios, depending on what's configured, and how things are set up.

Scenario #1 (example):

If, in the Config Editor, the user has actually configured a 9500, a 9510 on channel 1, and a 9510 on channel 2, and specified valid asset numbers for all 3, the procedure will run without errors, and will record all 3 devices in the list of standards used.

However, if the 9510 on channel 2 is out of cal, the Run Time will not detect this fact, and the procedure will pass, assuming the individual tests all pass. This is a clear traceability problem, since an out of cal standard was used to verify the UUT.

Scenario #2 (example):

If the configuration is the same as in scenario #1, except that no asset number is specified for the 9510 on channel 2, the procedure will execute, but a run time error (E5490) will be generated when results are written to the database. The problem is that an attempt is made to add a device with an empty asset number to the list of standards used.

Scenario #3 (example):

If the 9500 and 9510 on channel 1 are both configured correctly, but no 9510 on channel 2 is configured at all, a run time error occurs when the 9500 statement which requires a 9510 on channel 2 executes. The error is clear, the only problem is that there's no advance indication.

As a practical matter, the Run Time's ability to solve problems like these is very limited. Improved error messages could be provided for some of the scenarios described above, and the Run Time should not allow a calibration to pass when in fact one or more out of cal standards were used.

Procedure writers should take one of the following approaches:

- (1) Never decouple main and auxiliary instrument FSC statements. For example, if every 9500 statement is directly preceded by an M9500 statement, problems like

those described above go away, because the Run Time will have correct knowledge of the required standards.

Unfortunately, this approach is undesirable when a multichannel instrument can be handled in the same way for each of multiple channels.

- (2) Include "dummy" instrument lines in the main procedure to fool the compiler into generating correct configuration lines. For example:

```
JMPL SKIP
M9500 ch2
9500 1v 1kH 1%
LABEL SKIP
```

If these lines were added to the main procedure given above, the proper configuration lines would be generated in the main procedure, and the problem scenarios covered above would not arise.

In MET/CAL V6.11 an error check has been added to prevent the Run Time from marking a secondary device standard (e.g., a 9500 active head or a boost amp) as 'used' when it has not been previously marked as 'required'. This error will abort the procedure step.

This change closes a loophole in the traceability check. It means that procedures must be written in such a way that the run time system can statically determine the entire list of references which might be required prior to the start of procedure execution.

----> Measurement Uncertainty Output File Lines Not CR-LF-Terminated

Report #13833

In V6.10, lines written to the (optional) measurement uncertainty output file are LF-terminated. For convenience in a PC/Windows environment the lines should be CR-LF-terminated.

In V6.11 each line of the measurement uncertainty output file is terminated by a CR (carriage return) followed by an LF (linefeed).

----> P700 FSC Accuracy Lookup Error

Report #13876

In V6.10, the following statement:

```
P700      5ftH2O      60degF      N  P06
```

causes the following error:

```
E132: FSC P700: Required accuracy data not found in
      Accuracy File.
```

V6.11 includes necessary corrections to the P700 accuracy files

----> 4708 1-Year Accuracy File Missing ACV Data

Report #13962

In V6.10 the 4708 1 year accuracy file does not contain specifications for ACV between 330 Hz and 10 kHz on the 1 V and 10 V ranges. The accuracy file provided with V6.11

adds the missing data.

----> One-Year Accuracy File for HP 34401A

Report #13964

MET/CAL V6.11 includes an accuracy file with one-year specifications for the HP 34401A. The name of the file is "34401_1yr.acc".

----> One-Year Accuracy File for HP 34420A

Report #13965

MET/CAL V6.11 includes an accuracy file with one-year specifications for the HP 34420A Nano-Voltmeter. The name of the file is "34420_1yr.acc".

----> 700PD5, 700PD6, 700PD7 Lower Limits Incorrect P700 On-Line Help

Report #14004

The lower limits for the 700PD5, 700PD6, & 700PD7 pressure modules are incorrect in the P700 FSC on-line help file ("p700.hlp"). In V6.11 the documented lower limits have been corrected.

----> 700PD7 Upper Limits Incorrect P700 On-Line Help

Report #14005

The upper limits for the 700PD7 pressures module are incorrect in the P700 FSC on-line help file ("p700.hlp"). In V6.11 the documented upper limits have been corrected.

----> Duplications in Run Time Dialog Showing Required Instruments

Report #14007

In V6.10 the Run Time "Required Instruments" dialog (optional) incorrectly lists instruments twice when those instruments are referred to in the procedure both by FSC and by alias (in an IEEE or PORT statement). V6.11 corrects this duplication. System instruments (for example, "Fluke 5700A") which are referred to by alias no longer show up as "User-Configured Instruments" in the "Required Instruments" dialog.

----> Result Template Incompatible with Pressure Units Containing 'H'

Report #14046

In V6.10 "rslt_db.frm" incorrectly converts pressure units as follows:

mHg	=>	mHzg
inHg	=>	inHzg
mH2O	=>	mHz2O
cmH2O	=>	cmHz2O
inH2O	=>	inHz2O
ftH2O	=>	ftHz2O

For these units the substitution of "Hz" (hertz) for 'H' is not appropriate.

In V6.11 the following statements have been added to correct FN\$:

```
subst$(FN$,"mHzg","mHg")
```

```

subst$(FN$, "inHzg", "inHg")
subst$(FN$, "mHz2O", "mH2O")
subst$(FN$, "cmHz2O", "cmH2O")
subst$(FN$, "inHz2O", "inH2O")
subst$(FN$, "ftHz2O", "ftH2O")

```

Similar statements have been added for DE\$ and TT\$.

----> Upper Limit for Pa (pascals) Incorrect in 700P02 Accuracy File

Report #14047

The 700P02 accuracy file distributed with V6.10 specifies an upper limit of 1.0360 inHg. It should be 2.0360 inHg. V6.11 corrects this error.

----> Upper Limit for Pa (pascals) Incorrect in 700P22 Accuracy File

Report #14048

The 700P22 accuracy file distributed with V6.10 specifies an upper limit of 1.0360 inHg. It should be 2.0360 inHg.

----> Upper Limit for Pa (pascals) Incorrect in 700PD2 Accuracy File

Report #14049

The 700PD2 accuracy file distributed with V6.10 specifies an upper limit of 1.0360 inHg. It should be 2.0360 inHg. V6.11 corrects this error.

----> Upper Limit for Pa (pascals) Incorrect in 700PD7 Accuracy File

Report #14050

The 700PD7 accuracy file distributed with V6.10 specifies an upper limit of 1.3790 kPa. It should be 1.3790 MPa. V6.11 corrects this error.

----> Correction Indicator Not Set with Measurement Uncertainty & Target -M

Report #14106

In V6.10 there's an unexpected, and incorrect, interaction between correction files and the measurement uncertainty calculation.

In some cases MET/CAL fails to indicate that the System Actual value has been corrected (using a correction file), even though it has in fact been corrected.

The following example procedure fragment shows how to cause the problem to occur:

ASK+	K	C	F
VSET	NMEAS = 2		
5700	100V		S 2W
TARGET	-m		
MEMI	Please enter the UUT Indicated Value:		
MEMCX 100	V	1%	

If the test in the example above is executed using the following correction file:

Mode: Volts

Range: 99.0 101.0 NA NA

```

MOD1: NA
      99 99.1,
      99.1 99.2,
      99.2 99.33,
      100 100.2,
      100.1 100.34,
      101 101.4

```

the System Actual value is reported as 100.2 V (as it should be), but the indication that the System Actual has been corrected is not present.

This missing correction indication shows up in 3 places:

- (1) In the Test Results window there should be a 'Y' in the "C" column, but, instead, there's an 'N'.
- (2) In the Post Test dialog "(corrected)" should appear after the System Actual value, but does not.
- (3) The result variable C\$ does not get correctly set.

If the "TARGET -M" statement is removed from the test shown in the example above, the problem disappears. A possible work-around is to allow the setup statement to re-execute, thus re-establishing MEM1, each time through the measurement uncertainty loop. This work-around will be acceptable for calibrators which essentially do nothing when programmed to the state they are already in.

This problem has been corrected in V6.11.

----> Resource Leak in DOS FSC Corrected

Report #14122

In V6.00, V6.01, and V6.10, a resource leak in the DOS and DOSE FSCs may cause unexpected system behavior when procedures which execute many DOS or DOSE procedure statements are executed. On one test system approximately 12,000 calls to a user program by way of a DOS procedure statement were required to cause the system to fail. However, how long it takes to fail depends on available resources (RAM). Symptoms of failure may vary. Error #2164 may be generated. In some cases the operating system's ability to repaint the desktop may be degraded. The problem is cumulative. For example, executing a procedure which does 1000 "DOS" calls 10 times is the same as executing a procedure which does 10,000 "DOS" calls 1 time.

V6.11 corrects this resource leak.

----> DOS & DOSE FSC Enhanced to Allow Suppressing Console Window

Report #14124

In V6.11 the DOS and DOSE FSCs now support a new "-w" argument. Specifying "-w" causes a user program which is a console application to run without a console window. "-w" has no effect if the user program is a Windows application. "-w" is valid only under WinNT, Win2000, and WinXP.

The Editor's on-line help file for the DOS FSC documents

this addition.

----> Capacitance limits incorrect in 5520 help file and FSC Reference

Report #14138

In V6.10 there's an error in the on-line help file for the "5520" FSC, and in the corresponding section of the on-line reference manual. The 5520A capacitance limits are incorrectly stated as:

```
Synthesized Capacitance:
2-wire                330 pF to 109.99 nF
4-wire & 2-wire comp. 110 nF to 1.1 F
```

They should be:

```
Synthesized Capacitance:
2-wire                330 pF to 110.00 mF
2-wire comp.          110 nF to 110.00 mF
```

Also note that 4-wire is not available for capacitance, only 2-wire and 2-wire compensation.

The on-line help and reference manual have been corrected in V6.11.

----> Capacitance limits incorrect in 5500 help file and FSC Reference

Report #14139

In V6.10 there's an error in the on-line help file for the "5500" FSC, and in the corresponding section of the on-line reference manual. The 5500A capacitance limits are incorrectly stated as:

```
Synthesized Capacitance:
2-wire                330 pF to 109.99 nF
4-wire & 2-wire comp. 110 nF to 1 mF
```

They should be:

```
Synthesized Capacitance:
2-wire                330 pF to 1100.00 uF
4-wire & 2-wire comp. 110 nF to 1100.00 uF
```

The on-line help and reference manual have been corrected in V6.11.

----> 9500 Transition from 9530 > 1.1 GHz to 9510/9520 <= 1.1 GHz Fails

Report #14160

In V6.10 when 9530 and 9510 or 9520 Active Heads are mixed, an error occurs when a transition is attempted from 9530 > 1.1 GHz to 9510 or 9520 <= 1.1 GHz.

Example:

Configuration: 9530 on Ch2, 9520 on Ch4

M9500		CH2				
9500	1Vpp		3.2GH	LS	S	L
M9500		CH4				
9500	1Vpp		1.1GH	LS	S	L

The second "9500" statement causes:

```
E2075: Datron 9500: 1034,"9530 head required for
sine greater than 1.1GHz"
```

Either of the following sequences can be used to work around the problem:

Insert a 9500 Reset:

```
M9500          CH2
9500           1Vpp      3.2GH  LS  S  L
9500           *                S
M9500          CH4
9500           1Vpp      1.1GH  LS  S  L
```

Set to 1.1 GHz before changing to a channel with a 9510 or 9520 head.

```
M9500          CH2
9500           1Vpp      3.2GH  LS  S  L
9500           1Vpp      1.1GH  LS  S  L
M9500          CH4
9500           1Vpp      1.1GH  LS  S  L
```

This problem has been corrected in V6.11.

----> 5500A/COIL Omitted from Standards List

Report #14250

In V6.10, if a 5500 FSC CON field is FT or FX, or a 5520 FSC CON field is FT, LFT, FX, or LFX, the Fluke 5500A/COIL is listed as a required device in the procedure header. However, execution of the 5500 or 5520 statement does not cause the 5500A/COIL to be included in the list of standards used. V6.11 corrects the problem.

----> Incorrect Range Selected by 4x0x Statement with BC in MOD3

Report #14251

In V6.10 specifying "BC" in the MOD3 field of a 4x0x procedure statement does not correctly select the 11 A range. For example, the procedure statement:

```
1.001  4808  11  -0.00019A      10%      BC
2W
```

should select the 11 A range and use the Model 4600 Boost Current Amplifier.

In addition, the automatic connection message, if used, was incorrect.

The problem has been corrected in V6.11.

----> 9500 5-Channel Option not Detected Correctly in Demo Mode

Report #14252

In V6.10 if the 9500 5-channel option is configured (using the MET/CAL Config Editor), and a procedure which does not require the 5-channel option is executed in demo mode, an error message is generated indicating that the 5-channel option is not configured. Note that this problem occurs in demo mode only. V6.11 corrects this problem.

----> 9100 Coil Omitted from List of Standards Used

Report #14253

In V6.10 when T1 or T5 is specified in the CON field of a "9100" procedure statement, the 9100 Coil (Option 200) is correctly listed in the procedure header as a required reference. However, execution of the procedure statement does not cause the 9100 Coil to be included in the list of standards used by the procedure.

The problem has been corrected in V6.11.

----> 4953 Current Shunt Omitted from List of Standards Used

Report #14254

In V6.10 when an M4950 statement is used to lock the 10 A range, a subsequent 4950 statement causes the 4953 Current Shunt to be listed as a required standard in the procedure header. However, subsequent execution of the 4950 statement does not cause the 4953 Current Shunt to be included in the list of standards used by the procedure.

The problem has been corrected in V6.11.

----> 4000/4000A/4200/4200A Sense Command Causes Syntax Error

Report #14311

In MET/CAL V6.10 the 4xxx driver sends the sense command for all functions as follows:

2-Wire ==> Internal Sense "S0"
4-Wire ==> External Sense "S1"

The 4000, 4000A, 4200, and 4200A calibrators do not allow the sense command 'S' to be sent for functions and ranges which do not support external sense. Even though internal sense is the default for these functions and ranges, sending internal sense "S0" causes a syntax error.

The problem has been corrected in V6.11. In V6.11 the 4xxx driver no longer sends the sense command under the following conditions:

DCV and ACV below the 1 V range
DCI and ACI

----> No Frequency Specs in 1271 Accuracy File

Report #14339

In V6.10 the accuracy file for the Datron 1271 ("1271.acc") does not contain specifications for frequency.

The accuracy file has been updated in V6.11.

----> No Frequency Specs in 1281 Accuracy File

Report #14340

In V6.10 the accuracy file for the Datron 1281 ("1281.acc") does not contain specifications for frequency.

The accuracy file has been updated in V6.11.

----> Demo Mode Warning Message Text Incorrect

Report #14356

In V6.10 the Run Time's optional Demo Mode warning message incorrectly refers to the "Options" menu. In V6.11 the message has been corrected. It now refers to the "Configure" menu.

The Demo Mode warning may be controlled using the "rt demo prompt" initialization file parameter. Specify "rt demo prompt=yes" in the [Startup] section of "metcal.ini" to enable the Demo Mode warning prompt. Specify "rt demo prompt=no" in the [Startup] section of "metcal.ini" to disable the Demo Mode warning prompt. If there's no "rt demo prompt" specification in the initialization file, it defaults to "yes".

----> Config Editor Instrument Dialogs Don't Show IEEE and PORT FSCs

Report #14358

In V6.10 the instrument-specific dialogs displayed by the Config Editor (accessible from Run Time or Editor) failed to list the "IEEE" and/or "PORT" as FSCs which can be used to control the instrument. In V6.11 the Config Editor dialogs have been updated to include these FSCs where appropriate.

----> Formatted Limits (FLL\$ & FUL\$) Incorrect for MEMCX with Numeric Nominal and Asymmetric Tolerance

Report #14399

In V6.10 a MEMCX evaluation step containing a numeric value in the NOMINAL field and an asymmetric tolerance specification produces incorrectly calculated lower and upper test limits in the result variables FLL\$ and FUL\$.

This does not affect the pass/fail determination, but can lead to a report where the pass/fail status of a test is "pass", but the test result is not between the displayed acceptance limits.

The easiest work-around for this problem is to remove the numeric value from the MEMCX NOMINAL. To do this assign the System Actual value to memory register MEM1. (As always with MEMCX, the UUT Indicated value is taken from memory register MEM.) Note that a possible side-effect of making this change in a MEMCX test is that formatting of the result variables FRE\$, FVA\$, FLL\$, and FUL\$ may be affected. It may be necessary to insert a "dummy" tolerance specification in the MEMCX statement to produce the desired formatting. For example, entering "0.00U" in the TOLERANCE field will affect the formatting, but will not affect the tolerance calculation. Whether or not such a dummy tolerance field is necessary depends on whether the test contains a previous ACC statement with a numeric Nominal value, a previous instrument setup statement with a numeric Nominal value, or a RANGE field in the MEMCX statement.

In V6.11 the calculation of FLL\$ and FUL\$ for MEMCX statements with numeric Nominal values and asymmetric tolerances has been corrected.

----> Procedures which Change "TOL_REF" Can't Save Results

Report #14400

In V6.10, a procedure which uses a VSET statement to control the TOL REF setting on a per-test basis is prevented from saving results to the database.

For example:

```
Instrument: Test
ASK+ K
VSET TOL REF = NOMINAL
5700 1V 1%
```

If you execute this procedure using the Run Time application the error:

```
E5482: Can't commit cal summary data. Missing
data("2318 invalid").
```

is generated, and the Run Time returns to the top-level menu without having saved results.

The underlying problem is that internal validation information in the database for field 2318 allows only the values "UUT Indicated" and "Nominal". In fact, when "tol ref" is under procedure control, the Run Time writes the value "Procedure" for this field.

In V6.11, "patch9.sql" adds "Procedure" as a valid value for field 2318. "patch9.sql" is applied when "dbupdate.exe" is executed as part of the upgrade install process. For new customers, the initial, empty database distributed with MET/CAL V6.11 allows "Procedure" as a valid value for field 2318.

--

Section 3 MET/CAL Editor

----> Accuracy Check Causes Error for Configured Standards without Asset Number

Report #13423

In V6.10, if the asset number of a standard is left blank in the System Configuration File (edited using the Config Editor -- F12), and that standard is used during Test Run in the MET/CAL Editor, the following error message is generated:

```
E131 Can't get asset number for instrument
```

First, note that user may disable the accuracy file header check by adding:

```
acc_check = no
```

to the [Startup] section of "metcal.ini".

Beyond that, the Editor is working as designed here. Silently ignoring the error would not alert the procedure writer to the fact that the Run Time might use different accuracy files. However, it would be better if the displayed message were listed as a warning rather than an error.

V6.11 of Test Run has been modified to display this particular message as an informative message only, rather than as an error message.

----> 5820A Fast Edge Amplitude Limits Calculated Incorrectly

Report #13480

In V6.10 there's an intermittent problem in the calculation of the 5820A fast edge amplitude limits. This can lead to erroneous errors being generated by the Editor when a 5820 statement is compiled. The problem has been corrected in V6.11.

----> Datron 9100 - Incorrect Error when Using Insulation or Continuity Modes

Report #13484

A 9100 statement with ohms in the Nominal field and HV (Opt. 135 Insulation mode) or CO (Opt. 135 Continuity mode), generates "E132: FSC 9100: Required accuracy data not found in Accuracy File".

In V6.11 the 9100 accuracy file has been updated to correct this problem.

----> 4950 CON Field Rule Incorrect for AC Voltage Measurement

Report #13609

In V6.10, when 4W is specified for ACV at anything other than 1 or 10 V, 300 kHz or greater, the following is displayed:

E8642: FSC 4950: 4-Wire (4W) is allowed only for resistance measurement or AC voltage measurement on the 1V and 10V ranges and the 300kHz, 500kHz, or 1MHz frequency bands.

In actuality, this is reversed. If you look at the 4950 manual, page 5-31, it is assumed that ACV is always four-wire except for the 1 and 10V ranges above 100kHz. Thus, the error message should read (when attempting to read ACV):

E8642: FSC 4950: 2-Wire (2W) is allowed only for AC voltage measurement on the 1V and 10V ranges and the 300kHz, 500kHz, or 1MHz frequency bands." (The resistance portion of the error message is another matter.)

V6.11 updates the 4950 CON field checks. The rules are now:

The CON field may specify "2W" only under the following conditions:

- (1) the mode must be DC Voltage, DC Current, AC Current, Resistance, or
- (2) the mode is AC Voltage, the locked range must be 1V or 10V, and the frequency band center must be 300, 500, or 1000 kHz.

The CON field may specify "4W" only under the following conditions:

- (1) the mode must be AC Voltage or Resistance.

----> Keithley 2001/2002 4-wire Ohms not Restricted to ≤ 2.1 MOhms

Report #13614

The Keithley 2001/2002 4-wire ohms measurement should be limited to 2.1 MOhms. In V6.10 this is not enforced by the compiler.

V6.11 includes the necessary limit check.

----> 5500 Spike Marker Statement Generates Limits Error with Invalid Value

Report #13640

In V6.10, the following statement:

1.068	5500	1	1uT	1.0V	S6	M1	N
-------	------	---	-----	------	----	----	---

generates the following error:

E3849: FSC 5500: MOD1 value (1) out of range for
AC Voltage. Limits are 0 to
4.65187e-307.

The underlying problem is that the following compile-time error check is missing:

If MOD2 is M1, M2, M3, or M4, then MOD1 must be blank.

V6.11 includes the required error check.

----> 33120 Help File Contains Invalid Examples

Report #13661

In V6.10 the on-line manual for the 33120 FSC contains several examples which are invalid. The examples have been updated for V6.11.

----> Test Run Window Hidden by Required Instruments Dialog

Report # 13713

In V6.10 the appearance of the Required Instruments dialog at the start of Test Run may cause the Test Run window to be hidden behind the main Editor window.

In V6.11 a correction has been made so that the Test Run window remains on top of the Editor window.

----> 5520 FSC CON Field Change

Report #13747

A minor change has been made to 5520 FSC CON field to disallow the specification of "FT" or "FX".

The 5520A cannot drive the 5500A/COIL with LCOMP OFF for AC current, therefore the 5520 FSC CON field codes FT and FX should never have been allowed in this case. FT and FX are carry-overs from the 5500 FSC CON field.

----> 4800A Frequency Limit Change in 100 V Range

Report #13731

In V6.10 the Datron 4800A AC Voltage frequency limits are shared with the 4800. This is not correct. The 4800A upper frequency limit for the 100V range is 330kHz not 100kHz like the 4800. However, the actual frequency limit above 90V is

determined by the linear equation calculated using the end points 200V at 100kHz and 20V at 1MHz, like the 4808.

In V6.11 the limit is determined correctly.

----> 4x0x 4-wire Voltage Limitation Incorrect for Negative Voltages

Report #13771

The 4x0x calibrators support 4-wire voltage on the 1 V range and above. However, the compiler allows 4-wire with positive voltages on these ranges, but not with negative voltages.

Example:

4808	15V	S	4W
------	-----	---	----

The statement above compiles without errors.

4808	-15V	S	4W
------	------	---	----

The statement above generates error E5248:

The CON field cannot specify "4W" when the voltage is less than or equal to 0.2 V.

The absolute value of the voltage should be used in the error check.

This problem has been corrected in V6.11.

----> M33120 Data Not Cleared Before Procedure Execution

Report #13850

In V6.10, if you compile one or more M33120 statements (in the MET/CAL Editor), then run a procedure (using Test Run) which contains no M33120 statement before the first 33120 statement, M33120 data stored as a result of compilation are used with the executed 33120 statement.

This bug does not affect the MET/CAL Run Time. It does not affect Test Run unless the Editor is used to compile one or

V6.11 corrects this problem.

----> Editor Lockup Using 5500/CAL Editor to Edit MET/CAL Procedure

Report #13884

In V6.10 it is possible to lock up the 5500/CAL Editor as follows:

1. Use the MET/CAL Editor to create and compile a procedure containing at least one 3458 statement.
2. Save the procedure in compiled form.
3. Exit from the MET/CAL Editor.
4. Start the 5500/CAL Editor.
5. Load the procedure saved in step 2.
6. Do not modify any of the 3458 statements. Enter a new DISP statement: DISP test
7. Type F9 to attempt to compile the procedure.

After displaying errors E2915 and E114 the Editor locks up. E2915 is "Unknown device code 1." "1" happens to be the internal device code associated with the HP 3458A. E114 is "Error generating procedure header CONFIGURATION line". Under NT the Task Manager can be used to terminate the application.

The problem here is not that the 5500/CAL Editor does not allow a procedure containing a 3458 statement to be recompiled. This is correct operation, because the 3458 is an IEEE-488 only instrument, and 5500/CAL does not support 3458 statements. The problem is that the application locks up after displaying two error messages. A secondary problem is that the error messages are not sufficiently clear.

In V6.11 an error check has been added to the last pass of the MET/CAL procedure compiler to prevent recompilation of procedures containing statements not defined for the application, even if those statements have not been modified.

----> Security Problem Copying and Deleting Procedures

Report #13927

In V6.10 there's a security loophole which allows operators of any level to delete or copy procedures from the Editor's "Tools" menu. This has been corrected in V6.11.

----> 5Z, 7Z, 3Z, & 6Z Recognized as MOD2 Fields in 5500, 5520, 9000, & 9100

Report #14085

In V6.10 the instrument FSC parsing code recognizes 5Z, 7Z, 3Z and 6Z as 50 Ohm, 75 Ohm, 300 Ohm, and 600 Ohm impedance respectively for dBm. Error message 2422 ("Illegal MOD2 field") is generated. This is incorrect for the 5500, 5520, 9000, and 9100 FSCs, where these value should represent resistances, not MOD2 impedance codes. In V6.10 a work-around is to add a decimal point and at least one zero to the right of the decimal point to the resistance value.

----> M3325 Limits Check Incorrect when 3325 NOMINAL Taken from MEM

Report #14189

In V6.10 the limits check on an offset voltage specified in an M3325 statement fails when the voltage in the NOMINAL field of the corresponding 3325 statement is taken from register MEM at run time. An error message like:

E2772: FSC 3325: DC offset out of range. Limits are
+/- (1e-006 to 0.005) for 0V.

will be generated.

The problem is that the offset limits check depends on the voltage value in the 3325 NOMINAL field, and code is failing to get the NOMINAL value from register MEM at the time the error check is performed.

A work-around is to directly specify the 3325 NOMINAL value.

The problem has been corrected in V6.11.

----> Editor's "Save As" Function Sometimes Fails under Win2000

Report #14229

In V6.10 the Editor's "Save As" function sometimes generates the error:

E2243: Internal Error "Set Cursor" Failed in function
"ed_write_file"

The problem occurs only when the Save As dialog is navigated using the keyboard interface. Using the mouse prevents the problem from occurring.

V6.11 corrects the problem so that the keyboard and mouse interfaces to the Windows "Save As" dialog may be used interchangeably under Win2000.

----> MATH FSC Parsing Error when Literal String Ends with "\\\"

Report #14237

In V6.10 a MATH statement like:

MATH MEM2 = "C:\\\" & "123456789ABCDEFGH IJ.txt"

generates a syntax error when the statement is compiled. The problem occurs whenever (a) a literal string ends with "\\\"", (b) additional text exists on the line after the "\\\"", and (c) the additional text contains one or more spaces. In V6.10 the work-around is to split the MATH statement into multiple MATH statements, using string registers as needed. The problem has been corrected in V6.11.

----> 1281/1271 Frequency Measurement Lower Limit with FAST OFF is Incorrect

Report #14331

In V6.10 the 1281/1271 frequency lower limit with FAST OFF is 40 Hz. The lower limit should be 10 Hz. This error is not present when MOD3 is FE. In that case the lower limit of 200 Hz is correct. Also, the error is not present in the 4950 FSC.

In V6.11 the lower limit is correctly set to 10 Hz.

----> 9500 AC Current Statement Should be Restricted to "SQ"

Report #14410

In MET/CAL V6.10 the Editor fails to properly restrict the MOD2

field in a 9500 procedure statement to "SQ" in AC Current mode.

This means that "ZQ" and "ZN" may be entered without error. SQ is a square wave center on the zero axis. ZQ is a square wave emanating from the zero axis in the positive direction (i.e., a square wave with a positive DC offset equal to 1/2 the peak-to-peak amplitude). ZN is a square wave emanating from the zero axis in the negative direction (i.e., a square wave with a negative DC offset equal to 1/2 the peak-to-peak amplitude). The 9500 supports AC Voltage in all three forms, however, AC Current is supported only as a zero center waveform (i.e., MOD2 must be "SQ").

In V6.11 the MOD2 field is correctly restricted to "SQ"

in AC Current mode.

9500 AC Current statements like the following will now cause a compile-time error message to be generated:

```
9500 1mApp 1kH ZQ S
9500 1mApp 1kH ZN S
```

----> 9500 Statement Should not Allow Zero Amps DC

Report #14414

In V6.10 the compiler allows the following statement even though the 9500 does not support 0A DC:

```
9500 0A S L
```

V6.11 corrects this problem. The above statement can no longer be compiled without generating an error message.

--

Section 4 MET/TRACK Manual Entry

----> Removing Entry in Validation List Causes Blank Displayed Field Value

Report #12634

In V6.10 deleting an item in a validation list caused any field with that (now deleted) value to be displayed as a blank field.

This was a display problem. The database retained the correct value for affected fields. The problem has been corrected in V6.11.

----> Problem Changing Due Date on Repair Screen

Report #13309

In V6.10 some customers have had problems changing the due date. The problem occurs after a repair record has been saved. The due date returns to the originally calculated date.

In V6.11 no change has been made to the software in this respect. To change the due date on the repair screen, change the interval on the repair screen and the due date will reflect the change.

----> Location Screen Won't Update

Report #13504

V6.10 of Manual Entry fails to update the Location Screen properly. If you search for a list of assets, open the Location window, then use the arrow keys to move from one inventory item to the next, the location window does not dynamically update to track the current inventory item.

This behavior is corrected in V6.11.

----> Calibration Form "Temp" Field Will Not Accept Negative Numbers

Report #13512

In V6.10 it is not possible to enter a negative number in the Calibration Form. Doing so causes an error, and erases the previous record. The problem does not exist if the value is entered into the database using the Run Time application. The problem is introduced when the user enters a negative temperature value and then moves to a different field, either by typing a TAB or by clicking on a different field.

There is a work-around. Enter the negative number as the last thing you do in the form, and save the data without leaving the temperature field on the form.

V6.11 corrects this problem.

----> Problem Creating Histories After V6.0 to V6.10 Upgrade

Report #13544

There were reported problems in several databases after upgrading from V6.0 to V6.10. In one case local DB repairs could not be created. In the other case DB calibrations could not be created.

In both cases deleting data from the "customiz" table and replacing it with a generic "customiz" setup fixed the problem.

Unfortunately the customer loses his customization, including validation and merge tables. This may generate considerable work to restore the lost information. It appears that some parameters in the customization of V6.0 are not compatible with V6.10.

It turned out that this problem resulted from DCOPY in the "customiz" table being NULL instead of "yes" or "no". In V6.11 this is fixed by running the next "dbupdate" version, which will invoke "patch9.sql".

----> Case-Sensitivity Problem in Validation Editor

Report #13660

In V6.10 there's a case-sensitivity mismatch between Manual Entry and DB Setup. The validation editor in DB Setup is case-insensitive, but the validation function of Manual Entry is case-sensitive. This resulted in blank field values being shown in some cases. V6.11 corrects this problem.

----> Blank Asset Number Not Disallowed

Report #13701

V6.10 allows the asset number of an asset to be changed to an all-blank field using the "Renumber" feature. A blank record should not be allowed.

V6.11 does not allow a blank asset number to be specified.

----> Standard Marked as "Usage" Causes Error in UUT Cal Record

Report #13711

In V6.10, an attempt to use an asset marked as "Usage" as a standard causes the error:

E1025: (Query) Can't convert to a date/time.

The problem is apparently due to the fact that there's no cal

date on the standard until the usage limit has been reached.

V6.11 includes corrections to the way "use count"-type assets are handled.

----> Editing Cal Results Form Deletes All White Space Left of First Character

Report #13736

In V6.10, attempting to edit the Cal Results form in Manual Entry causes all of the white space on the left side to be removed when the data is saved. For example if the results lines look like this:

```
                This is a header
1.00v   .01   .01   etc.
```

then after editing and saving any line the file will look like this:

```
                This is a header
1.00v   .01   .01   etc.
```

This throws the columns out of alignment with the report, making the data nearly useless.

A similar problem occurs when a file is pasted into the results form. All left white space is removed.

V6.11 corrects this problem.

----> Validation List Not Correctly Displayed

Report #13889

In V6.10 the Manual Entry application does not correctly display a sorted validation list.

For example, using a file received from a customer, the following behavior was observed. Initially the display appeared ordered in both the drop down from the field and in val-edit (F2). When a new entry was added to the list it appeared ordered in the val-edit, but the drop-down list started with the "S" entries. The "A" entries appeared about half way down the list and the new entry appeared where it was inserted in the list.

V6.11 corrects this problem.

----> Tab Order Not Set for Inventory Table Field I4201

Report #14107

In databases prior to V6, the Asset Number field, I4201, could be edited. This set the tab order to 1 for this field. In versions 6.00, 6.01, and 6.10, this field cannot be edited. The tab stop should be set to zero, but is not. The effect is that the cursor is not placed in any field when the Inventory Form is opened and a "strange" merge table can be opened. The non-existent merge data may be very confusing.

In V6.11 the tab order for I4201 is set to zero. (For update customers, the change is made via "patch9.sql", which is executed when "dbupdate" runs.)

--

Section 5 MET/TRACK DB Setup

----> Display Problem with Field 4260 in DB Setup Inventory Form

Report #12717

In V6.10 there were problems displaying field 4260 in the Inventory Form of the DB Setup application. V6.11 does not exhibit this display problem. Note: Use the right mouse button to drag and drop when positioning 4260 in the Inventory Form.

----> Number of Significant Digits for Measurement Uncertainty Cannot Be Set in Database

Report #14271

V6.10 was supposed to allow the number of significant digits used to report the measurement uncertainty output values to be configured on a site-wide basis using the DB Setup application.

In DB Setup, in the "Uncertainty..." dialog of the top-level "Configure" menu there's an edit control for the number of significant digits, but it is always greyed-out.

The work-around is to specify the number of significant digits in the procedure or in the MET/CAL initialization file ("metcal.ini"). For example, in a procedure the procedure writer may say:

VSET NSD = 4

or the line "NSD = 4" could be placed in the [Startup] section of "metcal.ini".

This has been corrected in V6.11. DB Setup can now be used to specify the number of significant digits for all MET/CAL workstations in a networked system.

----> Truncated Text in "Configure System" Dialog

Report #14278

In V6.10, in the DB Setup "Configure System" dialog, the following text is truncated:

"Lowest level allowed to edit Run Time instrument configuratior"

The text should be as follows:

"Lowest level allowed to edit Run Time instrument configuration:"

This has been corrected in V6.11.

--

Section 6 MET/TRACK Import

Using the V6.11 Import Tool:

The following are fields which are always required to perform an automated insert to a specified table. They can

be provided by setting explicitly in the import definition and data files or by setting a default for the field using the DB Setup application where applicable.

Other fields may be set to be required by setting the customization which is accessible using the DB Setup application. As shipped, several other fields are set to be required, such as C2323, the "Pass" field in the Calibration table. Please consult the database table to determine which fields are required by settings in customization.

INVENTORY

I4201, I4209, I4228, I4229, I4240, I4299

Note that I4209, I4228 and I4299 are set with defaults as shipped.

CALIBRATION

I4201, C2301, C2333

REPAIR

I4201, R3230, R3241

LOCATION

I4201, L2809, L2810

CUSTOMERS

K4601

----> Import Keyword Incorrect in Users Manual

Report #13755

In the online Users Manual ("usr_ref.pdf"), on page 3-19, it is stated that the keyword for a .def file importing to the Customers table is 'CUSTOMER'. In fact this should say 'CUSTOMERS'.

In V6.11, "usr_ref.pdf" has been updated to correct this mistake.

----> Import Application Enhanced to Optionally Ignore Escape Characters

Report #14361

Version 6.11 of the Import Tool now responds to the "suppress_data_escape" parameter in the [Import] section of the MET/CAL initialization file ("metcal.ini"). If "suppress_data_escape = yes" the Import Tool will suppress all escape character handling in import data files. Setting "suppress_data_escape = no" retains normal handling of escape sequences in import data files.

Section 7 DB Update

----> Database Update

The following list shows the changes made to the MET/BASE database between V6.10 and V6.11. For upgrade users, these changes are made when "dbupdate" applies "patch9.sql".

- (1) The database version has been changed to "6.11".
- (2) The length of field C2314 has been increased to 16 characters.

- (3) The length of fiel C2320 has been increased to 128 characters.
- (4) The lengths of fields C2307, C2327, L2801, and L2802 have been increased to 20 characters.
- (5) The length of field C2501 has been increased to 256 characters.
- (6) Customization datalen for fields C3250, 3251, 3252, and 3253 lengthened to 5.
- (7) Lengthened customization maxlen, datalen and len to 5, 5, and 8 respectively for field C2311 and C2312.
- (8) Lengthened customization datalen for fields K4605, K4606, K4609 and K4610 to 48.
- (9) Corrected customization: set customiz dcopy to 'OFF' where scopy and dcopy are null, set nextfld to 0 for I4201
- (10) Added validation list item "Procedure" as an accepted value for TOL_REF.
- (11) Index and primary key changes: because CTAG, LTAG and RTAG must be 20 chars longer than MTAG.
- (12) Updated algorithms in trigger CAL_ARCHIVE_UPDATE.
- (13) Updated algorithm in stored procedure MT STD IN CAL to better process standards whose periodicity is determined by use count.
- (14) Updated algorithm in stored procedure MCCALRESLOC.
- (15) Created three user-definable tables keyed to MTAG called "mt.user1", "mt.user2" and "mt.user3".

----> "Remote DB Detected" Error when no Remote DB Exists

Report #13421

In V6.10, on certain databases, "dbupdate.exe" generates the error:

E1025: Remote DB detected, This application cannot continue

"dbupdate.exe" looks for a column called "dbremote" in the "dbconfig" table. If the value in "dbremote" is zero execution continues. If it is not zero the error shown above is generated. In some databases this value is NULL, which therefore causes the error.

In V6.11 DB Update has been changed to recognize NULL in the "[dbconfig]dbremote" field and change the value from NULL to zero. This solves the problem.

--

Section 8 Install

----> Upgrade Overwrites Results Template File

Report #13652

In V6.10 the Install Upgrade unconditionally overwrites the results template file, "rslt db.frm". This overwrites any customization the customer may have done. In V6.11 the Install Program will never overwrite an existing results template file.

----> Upgrade Install Overwrites Path to "config.dat"

Report #13882

In some cases the MET/CAL V6.10 Install program changes the specified name of the MET/CAL system configuration file in the MET/CAL initialization file. The system configuration file is typically named "config.dat". A full or partial path specification is given in the "[Startup]" section of the MET/CAL initialization file under the parameter name "config".

The Install program should not modify the value of the "config" parameter when an upgrade installation is performed.

This has been partially corrected in V6.11. In V6.11, if the second character of the path in the initialization file is a colon (':'), the path will not be changed. Note that the upgrade install remains unable to handle partial path specifications correctly (for example, a path specification that begins with "..\").

----> Incorrect Shortcut Installed for 5500/CAL

Report #13877

In V6.10, after installing 5500/CAL it is not possible to start the 5500/CAL Run Time from the start menu. The shortcut is set up incorrectly by the Install program.

The shortcut has been corrected in V6.11.

----> ODBC DSN in Wrong Section of Windows Start Menu

Report #14350

In V6.10 the MET/CAL Install program configures the ODBC DSN (Data Source Name) in the User portion of the Windows Startup Menu (under "Programs") instead of the in the System portion. This prevented to different users on the same PC from sharing the same data connection. In V6.11 the Install program configures the ODBC DSN in the System portion of the Startup Menu under "Programs".

----> Client Uninstall Generates Invalid Error Message

Report #14411

In V6.10 the Client Uninstall program generated an invalid error message on some systems. When this problem occurs the following error message appears:

Error loading Common Common Control Install

V6.11 corrects this problem.

--

----> Selecting Hydra Probe as Reference Does Not Disable Channel

Report #13039

In MET/TEMP V6.00, selecting the Hydra probe as a reference did not cause the channel to be disabled. This has been changed in V6.11 so that when Hydra probe is selected as a reference the channel is disabled (until the hardware setup is changed to use the drywell as the reference).

----> "Recall Asset" not Consistent

Report #13383

In MET/TEMP V6.01, when "Recall Asset" is used in the "Edit Asset" window, channels 1 and 11 are greyed out and not selected, even though the saved setup includes information for those two channels.

This has been changed. In V6.11 when an RTD is used as a reference channels 1 and 11 will be greyed out and the asset number can't be changed. When an RTD is not used as a reference, "Recall Asset" does not grey out channels 1 and 11.

----> MET/TEMP Enhanced to Measure Current or Voltage for a PRT

Report #13675

In V6.11, MET/TEMP has been enhanced to support measurement of voltage or current values from a PRT. This change also supports customers who have a need to calibrate Type L thermocouples.

Measuring voltage or current affects the measurement uncertainty calculation. In database mode, uncertainty components for the measurement and for the reference are stored separately. The overall measurement uncertainty is not determined in this mode.

----> MET/TEMP User's Manual does not Document Database Data Format

Report #13705

The V6.01 MET/TEMP User's Manual does not adequately document the format of the data written to the MET/CAL database (field 2501) when MET/TEMP is used in database mode.

The MET/TEMP V6.11 Users Manual includes additional information documenting the output data format in database mode.

----> MET/TEMP Manual Claims Compatibility with MET/CAL V6.00 & V6.01

Report #13723

In MET/TEMP V6.01, the section of the MET/TEMP User's Manual called "Installation as an Accessory to MET/CAL" states that MET/TEMP V6.01 can be used with MET/CAL V6.00 and V6.01. This is not correct.

In V6.11, a change has been made to the MET/TEMP Users Manual to reflect the fact that it should be used in conjunction with MET/CAL V6.10 or later.

----> Configuration of Serial Communication not Adequately Documented

Report #13724

In V6.01 serial communications problems were experienced by several MET/TEMP users. This was attributed to incomplete documentation of the serial interface parameters. In V6.11, an additional paragraph has been added to the MET/TEMP Users Manual explaining the serial interface parameters.

----> Hydra Accuracy File Incorrect

Report #13725

The Hydra accuracy file, "hydacc._sd", included with MET/TEMP V6.01 was not current in several specifications. V6.11 updates the specifications based on the most recent information from Hart Scientific. Thermocouple accuracy specifications have also been updated.

----> Incorrect Calculation of Measurement Uncertainty

Report #13954

A number of errors have been found in the MET/TEMP V6.01 measurement uncertainty calculation:

- (1) The UUT uncertainty contribution associated with a sequence of measurements should be calculated as $(SDEV / \sqrt{N}) * F$, where SDEV is the standard deviation of the measurements, N is the number of measurements, and F is the Student's T factor. The error is that if the Student's T factor is disabled, which is equivalent to setting F equal to 1, the \sqrt{N} term in the above formula is omitted. This results in setting this uncertainty component equal to the standard deviation of the measurements, causing an over-estimation of the uncertainty component.
- (2) When the Hydra, with an RTD, is used as the reference, MET/TEMP V6.01 looks up the accuracy of the reference (in a data file), but fails to normalize it to a 1-sigma value.
The accuracy file contains 3-sigma values.
- (3) MET/TEMP V6.01 does not calculate the expanded uncertainty correctly. The formula should be:

$$\text{Expanded Uncertainty} = K * \text{RSS}(U1, U2)$$

where K is the overall coverage factor (default 2.0), U1 is the uncertainty of the reference, and U2 is the uncertainty of the UUT.

The calculation which MET/TEMP V6.01 actually does is:

$$\text{Expanded Uncertainty} = \text{RSS}(U1, K * U2)$$

where U1 is the unnormalized reference uncertainty. In the case where the Hydra+RTD is the reference this leads to RSS-ing a 3-sigma value with a 2-sigma value (in the case where K is 2). This is not a valid calculation.

- (4) The reference uncertainty is not determined correctly.

When MET/TEMP V6.01 performs a measurement the reference can be either a dryblock or the Hydra+RTD.

The reference uncertainty is currently determined as follows:

Let UH be the uncertainty of Hydra+RTD, and

let UD be the uncertainty of the dryblock.

```
if (reference is Hydra+RTD)
    uncertainty = UH + UD
else if (reference is dryblock)
    uncertainty = RSS(UH, UD)
```

Instead of the algorithm shown above, the reference uncertainty should be determined as follows:

```
if (reference is Hydra+RTD)
    uncertainty = UH
else if (reference is dryblock)
    uncertainty = UD
```

The errors described above cause an over-estimation of the measurement uncertainties.

MET/TEMP V6.11 corrects the four errors described above.

----> 4-Wire Checkbox not Greyed Out in Hydra Function Recall

Report #14037

In MET/TEMP V6.00, when recalling the Hydra functions, after the Hydra probe has been selected as a reference and the setting has been saved, the 4-wire check box is not greyed out. V6.11 corrects this problem.

----> Assets Numbers of References Can Be Changed During UUT Setup

Report #14039

In MET/TEMP V6.00 when the Hydra and RTD are specified as references during "Hardware Setup", the "UUT Setup" dialog allows the asset numbers of the standards to be changed. In V6.11 the "Edit Assets" dialog, under "UUT Setup", has been modified to grey out the asset numbers (to disallow changes) of assets which are being used as references.

----> Names of Deleted Functions and Assets not Removed from List

Report #14077

In MET/TEMP V6.00, when using the "Recall" dialog box to delete saved functions (while setting up the UUT), the names of deleted functions are not removed from the list. The same problem occurs in the "Edit Assets Recall" dialog box. V6.11 corrects this problem.

--

Section 10 Procedures

----> Clamp Meter Procedures Updated

5500A and 5520A-based procedures for the clamp meters listed below have been modified to use the 5500A/COIL-specific CON field codes. These CON field codes cause accuracy file lookup to use a section with specifications for the calibrator and the 5500A/COIL, thus producing a valid system accuracy. Previously these procedures used the general T5 CON field code that had no corresponding specifications in the calibrator's accuracy file.

A.W. Sperry DSA-2007

A.W. Sperry DSA-440T
AEMC 3900
AEMC 3930
Amprobe ACD-10
Amprobe RS-3
Angus Electric POWER MASTER IIIB
BMI 155
Beckman AC30A
Fluke 30
Fluke 31
Fluke 32
Fluke 33
Yokogawa 2433-11

----> Problem with Mixed-Case Procedure Names

Report #13695

In some cases the V6.10 Procedure Install program did not properly handle mixed-case procedure names. This has been corrected in V6.11.

----> Readme File Not Shown in Some Cases

Report #13682

The V6.10 Procedure Install program did not correctly display the readme file when the full path name of the MET/CAL procedure directory file contained spaces. This has been corrected in V6.11.

----> Procedure Names Truncated

Report #13685

The V6.10 Procedure Install Program truncates the displayed names of procedures in some cases. This has been corrected in V6.11.

----> 5500A and 5520A-Based Astro-Med MT95K2 Procedures Cause Evaluated Message Error

Report #13633

The 5500A and 5520A based Astro-Med procedures generate the following error when executed:

E1901: Not enough space for evaluated message.

For the procedure on the V6.11 procedure CD, the MEM2 value has been changed from "Channel" to "Ch" to shorten the evaluated message.

----> Some Unreadable Procedures on V6.10 Procedure CD

Report #13628
Report #13629
Report #13630
Report #13631

The following procedures on the V6.10 Procedure CD cannot be read by the Editor and Run Time applications. The problem is that these procedures were compiled with an incorrectly built version of the MET/CAL Editor. The incorrect version of the Editor was never distributed to customers. The solution to the problem is to use the V6.11 procedure CD, or ask MET/SUPPORT to email the text version of the desired procedure.

AEMC 3900: (1 year) CAL VER /5500,5500A/COIL
 AEMC 3900: (1 year) CAL VER /5520,5500A/COIL
 AEMC 3930: (1 year) CAL VER /5500
 AEMC 3930: (1 year) CAL VER /5520
 Fluke 30: (1 year) CAL VER /5500,5500A/COIL
 Fluke 30: (1 year) CAL VER /5520,5500A/COIL
 Fluke 30: CAL ADJ /5500,5500A/COIL
 Fluke 30: CAL ADJ /5520,5500A/COIL
 Fluke 31: (1 year) CAL VER /5500,5500A/COIL
 Fluke 33: (1 year) CAL VER /5500,5500A/COIL
 Fluke 31: (1 year) CAL VER /5520,5500A/COIL
 Fluke 33: (1 year) CAL VER /5520,5500A/COIL
 Fluke 31: CAL ADJ /5500,5500A/COIL
 Fluke 33: CAL ADJ /5500,5500A/COIL
 Fluke 31: CAL ADJ /5520,5500A/COIL
 Fluke 33: CAL ADJ /5520,5500A/COIL

----> Fluke 8024B 2mA AC Test Tolerance Doesn't Agree with 6/4/86
 Service Alert

Report #13664

The 8024B accuracy specification for the 2mA AC range was +/-
 (3% of reading + 2 digits), 45Hz to 450Hz. The specification
 was subsequently revised to +/- (4% + 2 digits) 45 - 450Hz.

The procedure on the V6.11 procedure CD has been updated to
 agree with the revised specification.

--

Section 11 Documentation

For MET/CAL V6.11, the printed manuals have not been updated.
 A printed supplement to the Install Manual is included in the MET/BASE
 package for both new customers and upgrade customers.

MET/TEMP manual updated (PDF).

Supplement to MET/CAL Reference Manual. Contains FSC reference
 manuals
 for new and modified FSCs.

The V6.11 distribution contains the following documentation files:

mc6_gs.pdf

This is the MET/CAL and 5500/CAL Getting Started
 Guide, Version 6. It was last updated at the time
 of the V6.00 release.

mc6_ins.pdf

This is the Install Manual. It was last updated at
 the time of the V6.00 release.

InstallSupp611.pdf

This is an Install Manual Supplement. It contains
 information which corrects or updates information
 in the Install Manual ("mc6 ins.pdf"). Refer also
 to "readme.txt" for additional install and upgrade
 information.

mc6_ref.pdf

This is the MET/CAL V6.10 Reference Manual.

RefManSupp611.pdf

This is a supplement to the Reference Manual ("mc6 ref.pdf"). The supplement contains FSC references for all FSCs which are new or updated in the V6.11 release. It also contains VSET, which was omitted from the PDF reference manual in the V6.10 release. See the title page of the Reference Manual Supplement for a list of new or updated FSCs.

Note: The MET/CAL Editor's on-line help files may contain minor last-minute updates which are not in the PDF version. If any discrepancies are noticed between the built-in Editor help files and the PDF reference manual, the built-in help files should be assumed to be correct.

mc6_usr.pdf

This is the MET/CAL Users Manual (Version 6). It was last updated at the time of the V6.00 release.

MetTemp611.pdf

MET/TEMP Users Manual (V6.11). This is the full MET/TEMP manual, updated for the V6.11 release.

met_tour.pdf

MET/TEMP software tutorial. It was last updated at the time of the MET/TEMP V6.01 release. (V6.01 was the first version of MET/TEMP.)

rht.pdf

This document explains how to use the Fluke 5000A RH/T Precision Humidity and Temperature Data Logger with MET/CAL V6.11.

readme6.pdf

This is the readme file for the V6.00 release.

readme601.pdf

This is the readme file for the V6.01 release.

readme610.pdf

This is the readme file for the V6.10 release.

readme611.txt

This is the readme file for the V6.11 release.
[This is the file you are currently reading!]

readme.txt

This is an abbreviated readme file which is displayed when the MET/CAL client install program is run.

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On Time Support, Inc. provides software products to enhance or augment the functioning of your MET/CAL and MET/TRACK software. The following On Time Support programs may be purchased directly from Fluke. Contact your local Fluke representative for specific details, options, and prices. Additional information is also provided on Fluke's WEB site:

<http://www.fluke.com>

Metrology/Xplorer

Metrology/Xplorer is a web-based query tool used to retrieve MET/CAL and MET/TRACK data with your browser, over the internet or your company's intranet.

Barcode Magician

Barcode Magician (BCM) is a product from On Time Support Inc. which allows you to automate repetitive database entry tasks such as checking in/out equipment, or changing equipment status simply and consistently for quantities of assets using a simple barcode tool or keyboard.

BCM provides a simple, easy to use interface that allows your calibration technicians and instrument custodians a way to update your Fluke MET/BASE database quickly and efficiently while at the same time drastically reducing data entry errors and substantially increasing productivity. By using a barcode scanner in conjunction with this software, you can automate such tasks as:

- (1) Checking in/out equipment from a tool crib or instrument impound area.
- (2) Updating in-process status descriptors.
- (3) Changing location and association of assets.
- (4) Accepting instrumentation for repair work.
- (5) Virtually any database function other than calibration data entry, repair record creation, or addition of instruments.

On Time Support has developed additional programs which enhance the benefits of MET/CAL Plus. The following applications may be obtained directly from On Time Support. Please see "<http://www.ontimesupport.com>" for full information, or contact On Time Support at:

ON TIME SUPPORT Inc.
Voice - 281.296.6066;
Fax - 281.465.9478;
E-mail - inquiries@ontimesupport.com;
U.S. Mail - 25132 Oakhurst Drive, Suite 185
Spring, Texas 77386-1443

Process/Track

Process/Track allows users to create, download, and upload procedures and data from Fluke documenting calibrators, using the MET/CAL-Plus database. The software is fully automated. In addition to the Fluke documenting calibrators, the software also supports the Torquestar IVc.

Change/Log

On Time Support has created a plug-in for the MET/TRACK database (version 6.x) that keeps track of changes to the Inventory, Calibration, Location, Maintenance, Customer, and Standards tables. No front end program is required to configure the Change/Log option. Change/Log tracks database changes regardless of the application which makes the change. You can update your database using MET/TRACK Manual Entry, MET/CAL Run Time, Barcode Magician, ISQL, or any other application and Change/Log will maintain a full record of the change history. Change/Log is particularly useful for customers who may be subject to FDA regulatory requirements. An archive function is included.

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Section 13 Contacting Fluke

For assistance and questions regarding Fluke Metrology Software please contact MET/SUPPORT at:

phone: 1 (800) 825-7411
email: MetSupport@fluke.com

European customers may contact the MET/SUPPORT group in Europe via email at:

MetSupport@fluke.nl

To directly contact the MET/CAL software development team you may send email to:

Matt.Nicholas@fluke.com

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