



T.M.E. Application Note

Setting up spreadsheet reports for Thermobarscan data

Background

The use of barcodes to identify individual water temperature test points is becoming increasingly popular with facilities managers and those responsible for implementing ACOP L8.

TME's unique MM7000-2D Thermobarscan combines a highly accurate digital thermometer with a barcode scanner in one instrument. The instrument records time, date and temperature of the asset against its barcode and will store up to 1000 readings.

A question that frequently pops up is 'Can I bring the data from the Thermobarscan into my own spreadsheet system?' To answer this, we'll take you through the process used by one of our customers.

Step 1 - Generating Location codes

Firstly establish an alphanumeric code to identify all the temperature test points in your building.

Most people do this by using existing location criteria such as floor, department, room number etc. You may be able to use or adapt existing identification references. You can use numbers or letters or a combination of both to create a unique id reference code for each test point. You are now ready to generate your barcodes.



Example: Royal Stoneshire County Hospital/Dept 09/Room47/ Sentinel Point1

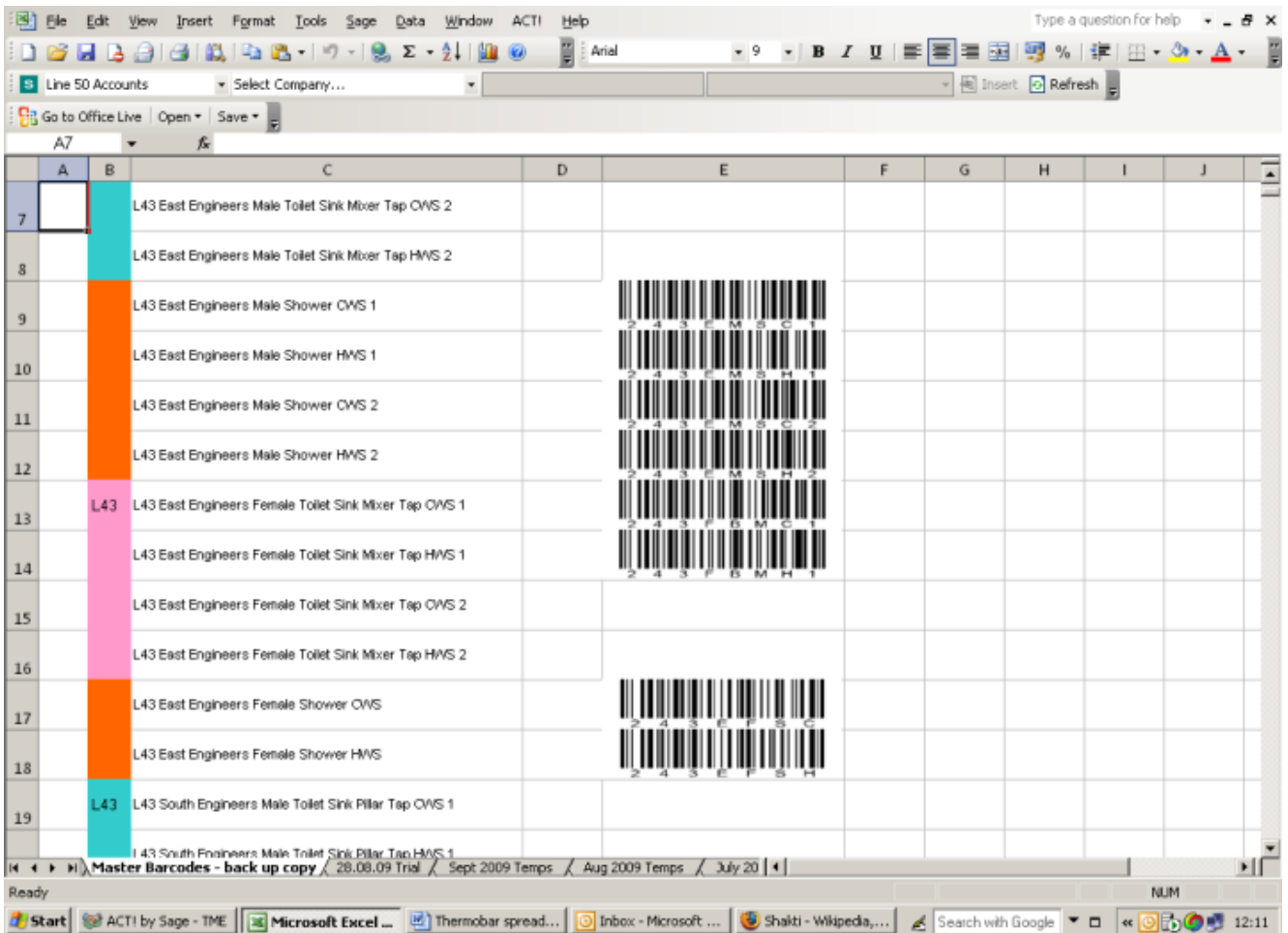
Step 2 -- Generating your barcodes

A barcode is a graphic image using a system of vertical lines to represent numbers and letters. We need to turn each of your identification reference codes into a barcode.

There are a number of websites that create barcodes for free although they can be rather time consuming. A better solution is to download a barcode-generation add-in for Excel. There are several of these on the [Microsoft website](#) (search 'barcode font').

Step 3 - Asset register with barcodes

As your barcodes are generated, you can save them in a master database together with the identification reference information for each asset. See example below.



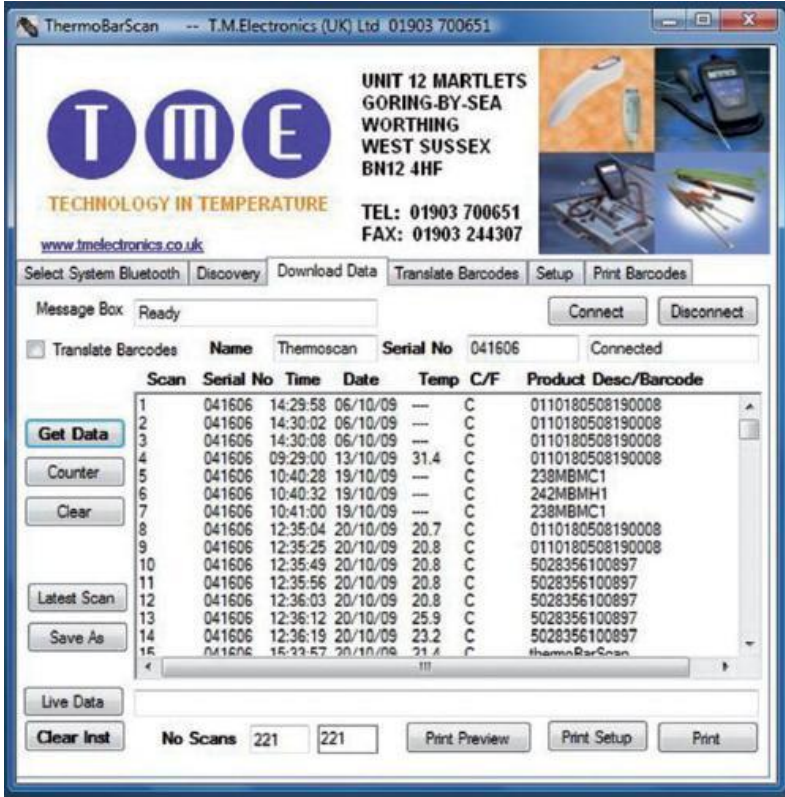
Step 4 -- Creating a Spreadsheet Log Book

You can now copy the barcodes and identification reference codes from this database and paste into a new worksheet. You will need to add columns for temperature, date and (if required) time. You will need to name this worksheet so that you can include the name as the destination for your formulae as explained later. We have named this example 'sample 2009 temps'.

STONESHIRE HOSPITAL - MONTHLY OUTLET TEMPERATURE MONITORING					
Location	Code	Barcode	Date	Temp °C	Action Required ?
L43 L43 East Engineers Female Toilet Sink Mixer Tap CWS 1	243FBMC1				
L43 East Engineers Female Toilet Sink Mixer Tap HWS 1	243FBMCH1				
L42 L42 Male Toilet Sink Mixer Tap CWS 1	242MBMC1				
L42 Male Toilet Sink Mixer Tap HWS 1	242MBMH1				
L42 L42 Reception Lobby Sink Mixer Tap CWS 1	242RBMC1				
L42 Reception Lobby Sink Mixer Tap HWS 1	242RBMH1				
L40 L40 Male Toilet Sink Mixer Tap CWS 1	240MBMC1				
L40 Male Toilet Sink Mixer Tap HWS 1	240MBMH1				
L36 L36 Male Toilet Sink Mixer Tap CWS 1	236MBMC1				
L36 Male Toilet Sink Mixer Tap HWS 1	236MBMH1				
L36 Medical Kitchenette Sink Mixer Tap CWS	236MKBMC				
L36 Medical Kitchenette Sink Mixer Tap HWS	236MKBMH				
L33 L33 Male Toilet Sink Mixer Tap CWS 1	233MBMC1				
L33 Male Toilet Sink Mixer Tap HWS 1	233MBMH1				
L33 Unisex Shower CWS	233JSC				
L33 Unisex Shower HWS	233JSH				

Step 5 -- Download your temperature readings from ThermobarScan

To bring the temperature, time, and date of reading for each asset in to the spreadsheet, first download the data from the ThermobarScan using the software provided. The data will appear in a screen on your computer like this.



Use the **Save As** function save the records to a data file on your desktop.

Step 6 – Importing the data into the Log Book

Open the data file using Excel and copy the information.

Go back to your Spreadsheet Log Book and create a new worksheet, then paste the data into this.

You now have the Thermobar readings list showing like this.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
5	123456	13:49:21	22/10/2009	12.2	C	242MBMC1								
6	123456	13:49:21	22/10/2009	12.3	C	242MBMH1								
7	123456	13:49:21	22/10/2009	12.4	C	242RBMC1								
8	123456	13:49:21	22/10/2009	12.5	C	242RBMH1								
9	123456	13:49:21	22/10/2009	12.6	C	240MBMC1								
10	123456	13:49:21	22/10/2009	12.7	C	240MBMH1								
11	123456	13:49:21	22/10/2009	12.8	C	236MBMC1								
12	123456	13:49:21	22/10/2009	12.9	C	236MBMH1								
13	123456	13:49:21	22/10/2009	13	C	236MKBMC								
14	123456	13:49:21	22/10/2009	13.1	C	236MKBMH								
15	123456	13:49:21	22/10/2009	13.2	C	233MBMC1								
16	123456	13:49:21	22/10/2009	13.3	C	233MBMH1								
17	123456	13:49:21	22/10/2009	13.4	C	233USC								
18	123456	13:49:21	22/10/2009	13.5	C	233USH								
19	123456	13:49:21	22/10/2009	13.6	C	233KBMC								
20	123456	13:49:21	22/10/2009	13.7	C	233KBMH								
21	123456	13:49:21	22/10/2009	13.8	C	230MBMC1								
22	123456	13:49:21	22/10/2009	13.9	C	230MBMH1								
23	123456	13:49:21	22/10/2009	14	C	230KBMC								
24	123456	13:49:21	22/10/2009	14.1	C	230KBMH								
25	123456	13:49:21	22/10/2009	14.2	C	229MBMC1								
26	123456	13:49:21	22/10/2009	14.3	C	229MBMH1								
27	123456	13:49:21	22/10/2009	14.4	C	229KBMC								
28	123456	13:49:21	22/10/2009	14.5	C	229KBMH								
29	123456	13:49:21	22/10/2009	14.6	C	229MSC1								
30	123456	13:49:21	22/10/2009	14.7	C	229MSH1								
31	123456	13:49:21	22/10/2009	14.8	C	229FSC1								

You need to name this sheet before moving to the next step as you will need to include this name in your match formula. We have called this example 'sample csv file from MM7000'.

Step 7 - Combining the data - the tricky bit!

To combine the data you need to '**MATCH**' the id reference code for each asset on the spreadsheet with its counterpart on the Thermobar readings list.

To do this in Excel we need to make use of 2 functions, firstly we need to match the asset reference codes in the log book with those on the readings list. When we find a match we then produce an index pointer to all the data for that particular asset.

In the 'Sample 2009 temps' worksheet, identify a spare column and click on the cell corresponding to the first asset.

Enter the following formula:

```
=+MATCH(D5,'Sample csv file from MM7000'!F$3:F$100,0)
```

This tells the programme to 'look' down the list of records and find the code which matches the code in cell D5. It produces an index or pointer to this data in the new column.

You can then copy & paste this formula into cells down the column.

In the example below, we have called the new column 'Index'.

STONESHIRE HOSPITAL - MONTHLY OUTLET TEMPERATURE MONITORING					
Location	Code	Barcode	Date	Temp °C	Action Required ?
L43 East Engineers Female Toilet Sink Mixer Tap CWS 1	243FBMC1				24
L43 East Engineers Female Toilet Sink Mixer Tap HWS 1	243FBMCH1				2
L42 Male Toilet Sink Mixer Tap CWS 1	242MBMC1				7
L42 Male Toilet Sink Mixer Tap HWS 1	242MBMH1				30
L42 Reception Lobby Sink Mixer Tap CWS 1	242RBMC1				10
L42 Reception Lobby Sink Mixer Tap HWS 1	242RBMH1				18
L40 Male Toilet Sink Mixer Tap CWS 1	240MBMC1				22
L40 Male Toilet Sink Mixer Tap HWS 1	240MBMH1				8
L36 Male Toilet Sink Mixer Tap CWS 1	236MBMC1				43
L36 Male Toilet Sink Mixer Tap HWS 1	236MBMH1				35
L36 Medical Kitchenette Sink Mixer Tap CWS	236MKBMC				8
L36 Medical Kitchenette Sink Mixer Tap HWS	236MKBMH				12
L33 Male Toilet Sink Mixer Tap CWS 1	233MBMC1				13
L33 Male Toilet Sink Mixer Tap HWS 1	233MBMH1				28
L33 Unisex Shower CWS	233USC				19
L33 Unisex Shower HWS	233USH				16

The second function we will use is '**INDEX**'. this uses the index information generated above and brings in the appropriate data.

To bring the temperature record for each asset into the spreadsheet, we enter the following code into the cell where we want the temperature to appear:

`=+INDEX('Sample csv file from MM7000'!D$3:D$100,'Sample 2009 Temps'!J5)`

















Note how the names 'Sample csv file from MM7000' and 'sample 2009 Temps' are used in the formula. This tells the programme to look down the temperature column on the Thermobar record list in row 24 and to bring this temperature reading into the highlighted cell. Again, simply copy and paste this formula into the 'Temp' cell in the other rows to bring in the data.

File Edit View Insert Format Tools Sage Data Window ACT! Help Type a question for help

Line 50 Accounts Select Company... Insert Refresh

Go to Office Live Open Save

K5 =+INDEX('Sample csv file from MM70001D\$3:D\$100,'Sample 2009 Temps'!J5)

	C	D	E	F	G	H	I	J
1	STONESHIRE HOSPITAL - MONTHLY OUTLET TEMPERATURE MONITORING							
2								
3	Location	Code	Barcode	Date	Temp °C	Action Required ?		
4								index
5	L43 East Engineers Female Toilet Sink Mixer Tap CWS 1	243FBMC1			20.2			24
6	L43 East Engineers Female Toilet Sink Mixer Tap HWS 1	243FBMH1						2
7								
8	L42 Male Toilet Sink Mixer Tap CWS 1	242MBMC1						7
9	L42 Male Toilet Sink Mixer Tap HWS 1	242MBMH1						30
10								
11	L42 Reception Lobby Sink Mixer Tap CWS 1	242RBMC1						10
12	L42 Reception Lobby Sink Mixer Tap HWS 1	242RBMH1						18
13								
14	L40 Male Toilet Sink Mixer Tap CWS 1	240MBMC1						22
15	L40 Male Toilet Sink Mixer Tap HWS 1	240MBMH1						8
16								
17	L36 Male Toilet Sink Mixer Tap CWS 1	236MBMC1						43
18	L36 Male Toilet Sink Mixer Tap HWS 1	236MBMH1						35
19	L36 Medical Kitchenette Sink Mixer Tap CWS	236MKBMC						8
20	L36 Medical Kitchenette Sink Mixer Tap HWS	236MKBMH						12
21								
22	L33 Male Toilet Sink Mixer Tap CWS 1	233MBMC1						13
23	L33 Male Toilet Sink Mixer Tap HWS 1	233MBMH1						28
24	L33 Unisex Shower CWS	233USC						19
25	L33 Unisex Shower HWS	233USH						16

Master Barcodes - back up copy / 28.08.09 Trial / Sept 2009 Temps / Aug 2009 Temps / July 20

Ready NUM

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The procedure for bringing the date record in is exactly the same but you now use the formula **=+INDEX('Sample csv file from MM7000'!C\$3:C\$100,'Sample 2009 Temps'!J5).**

STONESHIRE HOSPITAL - MONTHLY OUTLET TEMPERATURE MONITORING					
Location	Code	Barcode	Date	Temp °C	Action Required ?
					index
L43 East Engineers Female Toilet Sink Mixer Tap CWS 1	243FBMC1		22/10/2009	20	24
L43 East Engineers Female Toilet Sink Mixer Tap HWS 1	243FBMCH1			56	2
L42 Male Toilet Sink Mixer Tap CWS 1	242MBMC1			20	7
L42 Male Toilet Sink Mixer Tap HWS 1	242MBMH1			63	30
L42 Reception Lobby Sink Mixer Tap CWS 1	242RBMC1			21	10
L42 Reception Lobby Sink Mixer Tap HWS 1	242RBMH1			51	18
L40 Male Toilet Sink Mixer Tap CWS 1	240MBMC1			64	22
L40 Male Toilet Sink Mixer Tap HWS 1	240MBMH1			22	8
L36 Male Toilet Sink Mixer Tap CWS 1	236MBMC1			21	43
L36 Male Toilet Sink Mixer Tap HWS 1	236MBMH1			55	35
L36 Medical Kitchenette Sink Mixer Tap CWS	236MKBMC			21	8
L36 Medical Kitchenette Sink Mixer Tap HWS	236MKBMH			39	12
L33 Male Toilet Sink Mixer Tap CWS 1	233MBMC1			21	13
L33 Male Toilet Sink Mixer Tap HWS 1	233MBMH1			55	28
L33 Unisex Shower CWS	233USC			22	19
L33 Unisex Shower HWS	233USH			64	16

A completed worksheet showing temperatures and dates of readings is shown below. You can also have a column for the time of the record if required.

You should now save a copy of this sheet with a suitable name (July 09 for example).

STONESHIRE HOSPITAL - MONTHLY OUTLET TEMPERATURE MONITORING						
Location	Code	Barcode	Date	Temp °C	Action Required ?	
L43 East Engineers Female Toilet Sink Mixer Tap CWS 1	243FBMC1		24.07.09	20		index 24
L43 East Engineers Female Toilet Sink Mixer Tap HWS 1	243FBMCH1		24.07.09	56		2
L42 Male Toilet Sink Mixer Tap CWS 1	242MEMC1		24.07.09	20		7
L42 Male Toilet Sink Mixer Tap HWS 1	242MEMH1		24.07.09	63		30
L42 Reception Lobby Sink Mixer Tap CWS 1	242RBMC1		24.07.09	21		10
L42 Reception Lobby Sink Mixer Tap HWS 1	242RBMH1		24.07.09	51		18
L40 Male Toilet Sink Mixer Tap CWS 1	240MBMC1		24.07.09	64		22
L40 Male Toilet Sink Mixer Tap HWS 1	240MBMH1		24.07.09	22		8
L36 Male Toilet Sink Mixer Tap CWS 1	236MBMC1		24.07.09	21		43
L36 Male Toilet Sink Mixer Tap HWS 1	236MBMH1		24.07.09	55		35
L36 Medical Kitchenette Sink Mixer Tap CWS	236MKBMC		24.07.09	21		8
L36 Medical Kitchenette Sink Mixer Tap HWS	236MKBMH		24.07.09	39		12
L33 Male Toilet Sink Mixer Tap CWS 1	233MBMC1		24.07.09	21		13
L33 Male Toilet Sink Mixer Tap HWS 1	233MBMH1		24.07.09	55		28
L33 Unisex Shower CWS	233USC		24.07.09	22		19
L33 Unisex Shower HWS	233USH		24.07.09	64		16

Step 8 – Building your Spreadsheet Log Book

To bring subsequent readings into your log book, firstly, download the new data from the ThermobarScan using the software provided and save as a data file as previously described.

Open the file using Excel, then simply copy the data into your original Thermobar record list (Sample csv file from MM7000), replacing the old data, and your Log Book will update automatically. Now save a copy of this with a suitable name and you are ready to go again.

Should you require any assistance with this or you would like us to set up a system to your requirements then please contact us.

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