# Emissions Tester CCP800/CSP800

## Operations Manual

I324346 Issue 1

# 1. INTRODUCTION

**Preliminary information**

> **NOTE:**
> **This Manual only describes the software controlled procedures. For all other information, refer to the Smokemeter Hardware Operators Manual.**
>
> **IMPORTANT:**
> **Every reasonable effort has been made to ensure that information within these Operating Instructions is correct at the time of release, but Crypton Ltd. cannot accept responsibility for any errors that may occur. Errors and Omissions excepted.**

**Service & Warranty**
The reliability of this equipment is fully supported by our service agents, with repair workshops and field service engineers to provide a full range of After-Sales Care, including installation, contract maintenance, factory overhaul and emergency repairs on site. Please refer to the page at the end of this manual for full details.

> **NOTE:**
> **If a service engineer is called out under service warranty where, upon inspection and test the equipment is found to be in full working order and no fault found, the user is liable to be charged the cost incurred for this call out. Before calling out an engineer, ensure your equipment is faulty by checking its operation, particularly mains supply and fault codes/self test if applicable.**
>
> **WARNING:**
> **Do not attempt to operate this equipment unless you have read and understood these instructions.**

Extremes in weather conditions can give very low temperatures. In such weather conditions and where temperatures are likely to fall below freezing, we recommend that you leave the unit switched on at all times.

This is particularly beneficial if there is no background heating in your garage, or if there are high levels of cold through draft in low overnight temperatures.

> **PLEASE NOTE:**
> **The operating temperature range of this equipment is 0 to +40ºC.**

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# 2. IMPORTANT INFORMATION

**SAFETY PRECAUTIONS**
**1.** The equipment is not weatherproof and should not be used outside in rain or snow.

**2.** The internal circuits and components of the analyser should not be tampered with. No internal parts are operator serviceable.

**3.** Operators should exercise due caution with regard to the engine fan and associated belts.

**4.** Always provide ventilation by using an exhaust gas extraction system or by having an adequate supply of fresh air.

> **WARNING:**
> **Carbon Monoxide is a highly poisonous gas. If breathed in, it is absorbed by the blood and will result in greatly slowed reactions and if absorbed in sufficient quantity can be fatal. Published figures show that a concentration of 0.3% CO in the air can be fatal if inhaled for 30 minutes.**

**5.** Before starting an engine, ensure that the gear selector is in neutral or park.

**6.** Care should be taken with regard to scalding from the cooling system, burns from the exhaust system and electric shocks from the ignition HT system.

**7.** When disconnecting the fuel system of a hot engine beware of the fire hazard caused by petrol spilling onto manifolds, ignition distributor, etc.

**8.** Position the mains cable and sampler pipe in such a manner that they do not present a hazard to anyone.

**9.** The earth lead of the mains supply cable MUST ALWAYS be connected to a good earth point

## SPECIFICATION

Crypton have a programme of continued product development and therefore reserve the right to amend product specifications without prior notice.

While every effort is made to ensure the accuracy of the particulars contained in this instruction book, the Manufacturers and the Authors shall not in any circumstances be held liable for any inaccuracy or the consequences thereof.

## COPYRIGHT

## MOT TESTING

The CCP800, CSP800 Diesel Smokemeter, when used with the software
described in this manual, is approved by DVSA for MOT testing of the following classes
of vehicle:

■ **Category A** Cars, Light Commercial Vehicles and Private Buses (M.0.T. classes 4, 5 and 7)

■ **Category B** Public Service Vehicles, Heavy Goods Vehicles

# 3. CCP800/CSP800 SMOKEMETER

## INTRODUCTION

The Smokemeter program is a Windows® program and uses the normal control methods associated with these programs. A series of icons on the right hand side of the screen indicate what actions are possible. Use the mouse to move the pointer over the required icon and press the left mouse button.

## Icons

**MOT - initials the test procedure**

**LIVE READINGS - displays a page of live smoke readings**

**EXIT - to end current activity**

**PROCEED - accept current selection and continue**

**RETURN - return to the previous screen**

**SUB-MENU - open a sub-set of tools and setup icons**

**RETURN TO MAIN MENU**

**CANCEL - reject a setting or continue without a particular functions**

**REPEAT - restart a particular procedure**

**OK - agree a particular setting/indication and continue**

**HELP - presents a page of helpful information**

**INFO - presents a page of information about the system**

**PRINT - initiate a printout**

**RESET PEAK - in live readings, this resets the peak smoke display to zero so another peak can be displayed**

**RPM SETTING - display a RPM reading as it come from the transducer**

**RPM SETTING 2 - display RPM reading at half the value that comes from the transducer**

**CDSS4/6 RPM SETTING - set the number of cylinders on the vehicle engine**

**TIME DATE - adjust clock in smokehead (restrictions apply)**

**UKAS CALIBRATION - start the annual calibration procedure (password protected for use by authorised engineers only)**

**VTS FORM - enter garage details**

**ZERO/SPAN - force a zero, span and calibration check (automatically performed when required)**

**BYPASS HANDSET - proceed without the use of the remote handset**

**TIME PROGRESS - proceed using time intervals (operation is only available for Category B testing)**

## OPERATION

> **NOTE:**
> **The following instructions assume that the Smokemeter software has already been installed on the computer using the instructions supplied with the software, and that the user is familiar with the operation of Windows.**

For details of product hardware refer to TES 1529.

## TO START THE SMOKEMETER PROGRAM

1. Switch on and wait for the menu system to be displayed.

2. Select the Smokemeter icon.
The Smokemeter program will start and the warm up screen will be displayed. The first warm up of the day may take some time, possibly up to 15minutes. Subsequent warm up periods will be approximately 30 seconds.

3. At this stage any communication problem messages will be displayed if they are appropriate.
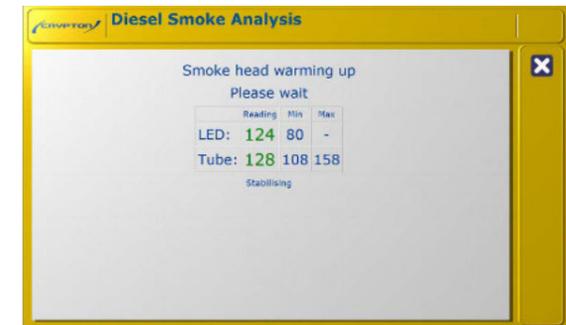


4. After warming up the main menu will be displayed.



5. A warning alerting of ancillary equipment that has not been correctly connected will be displayed at this stage

Options available from this menu are given below. Tools & Setup options available from the Sub-Menu:

**EXIT- exit Smoke program and return to the Crypton desktop**

**HELP- presents a page of help information**

**MOT- initiates the MOT test procedure.**

**LIVE- live smoke readings for testing and adjustment purposes.**

**SUB-MENU - open a sub-set of Tools & Setup icons.**

**ZERO/SPAN- force a zero, span and calibration check (automatically performed when required)**

**UKAS CALIBRATION - start the annual calibration procedure, password protected for use by authorised engineers only**

**TIME DATE**- used to adjust clock in smokehead (restrictions may apply)

**VTS FORM**, used to enter garage details

**INFO** - displays a page of information about the program and system.

**RETURN to Main Menu** - used to return to the previous screen

**Shut down Procedure**

**IMPORTANT:**
**Always follow the correct shut-down procedure before turning the power off. This prevents the hard disk being filled with unwanted files and causing operational problems at a later date.**

1. Exit the main menu using the EXIT icon.

2. Double click the SHUT DOWN icon from the PC desktop.

3. After a short period the computer will shut down. It is then safe to turn the power off.

**MOT TEST PROCEDURE**
The engine must be at normal operating temperature before performing the test, either apply the test immediately the vehicle is presented or warm up thoroughly before testing.

**WARNING:**
**If carrying out tests in a workshop, the area should be well ventilated. Alternatively, outdoor testing is permissible (see 'Outdoor Testing' in the Hardware Operators Manual).
Ensure that the vehicle is parked on level ground with handbrake applied and gear lever in neutral or park position.**

**Turbocharged engines should be allowed to idle for 10 to 15 seconds before switching off to ensure maximum turbocharger life.**

**It is recommended that prior to carrying out the M.O.T. test, the engine speed governor is checked as follows:**

.

**Fit the engine speed adapter (see section 'Engine Speed Adapters' in the Hardware Operators Manual). SLOWLY raise the engine speed and check that the engine manufacturer's maximum speed cannot be exceeded.**

**DO NOT proceed further if the engine speed exceeds the manufacturer's figures.**

1. Select the icon to initiate the MOT test.

2. Type the Vehicle Registration Mark or Test Number in the box using the keyboard. Spaces between letters/numbers are not important as they will be ignored.

3. If you do not have a connection to the DVSA MTS on-line service, type the Vehicle Registration Mark or Test Number in the box using the keyboard. Spaces between letters/numbers are not important as tey will be ignored.
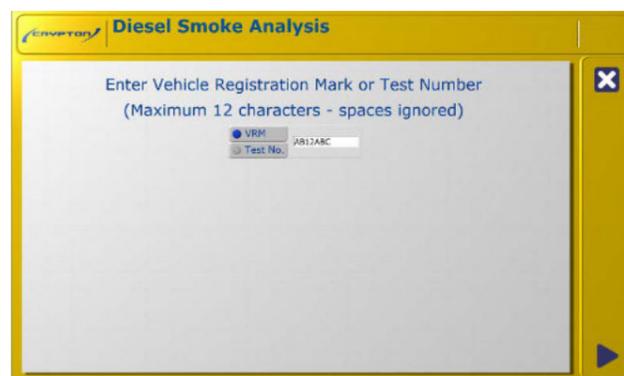
4. Provided all is well the screen will display the complete test selection to be used for this MOT test. Check the details are correct and click the **PROCEED** icon to continue.
Clicking the **EXIT** icon will ABORT the test back to the main menu. Fields will be automatically populated with vehicle information if the vehicle was defined on the DVSA MTS on-line service.
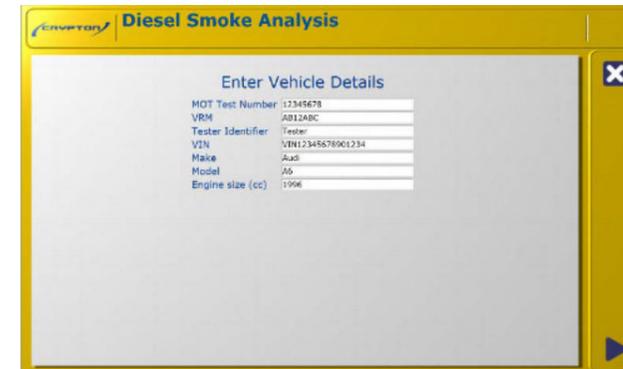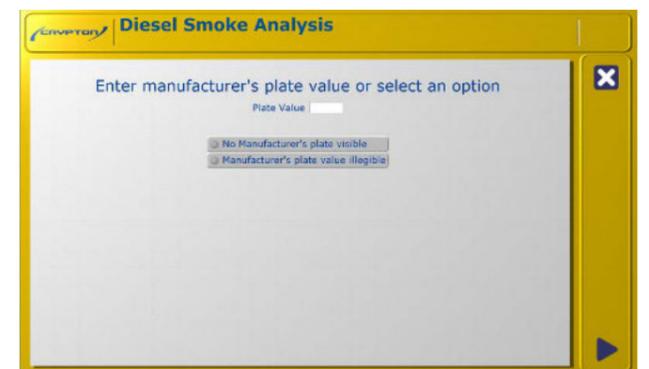
5. Select the vehicle category type then click on the **PROCEED** icon to continue.
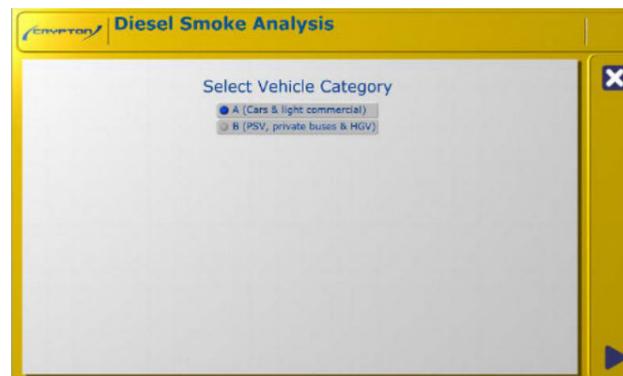
6. If Category A test for Cars and light commercial is selected than a limits choice screen is displayed.

7. If Category B test for HGV/PSV is selected than an RPC (Reduced Pollution Certificate) option is enabled.
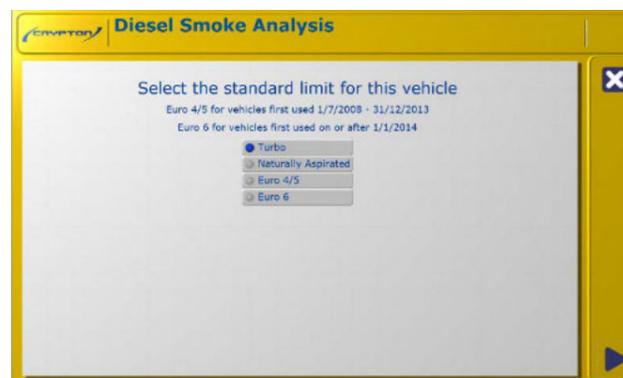
**NOTE:**
**RPC options are only available fr Category B tests.**

8. If Turbo is selected, the test limits will be displayed.
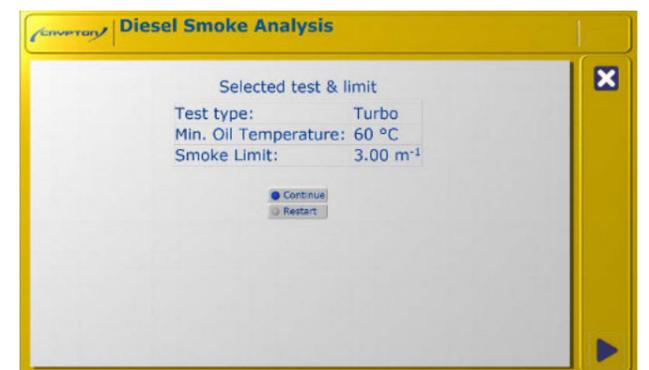
9. OIL TEMPERATURE - only applicable to classes 4 and 7.

**NOTE:**
**The oil temperature procedure will be automatically bypassed if a temperature probe is not fitted.**

**WARNING:**
**Ensure the oil temperature probe is set to the correct length before inserting into the engine. Failure to do so may result in serious damage to the probe and/or engine.**

**NOTE:**
**If you have a Bluetooth VCI configured, it will be an available option for reading engineer temperature. Choose 'EOBD Interface' and follow on-screen instructions.**

**Not every vehicle supplied with a 16-pin EOBD connector supports EOBD. This applies to petrol and diesel vehicles. Communication will not be possible for vehicles which use unsupported protocols.**
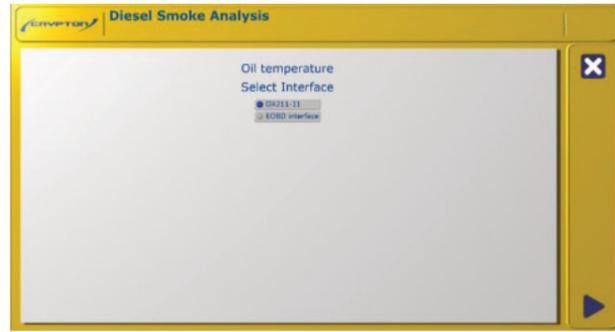
10. If using oil temperature probe, set the probe length, remove the dipstick from the engine. Offer the probe upto the dipstick and ser the moveable stop so that the effective length of probe is approximately 10mm shorter than the dipstick.
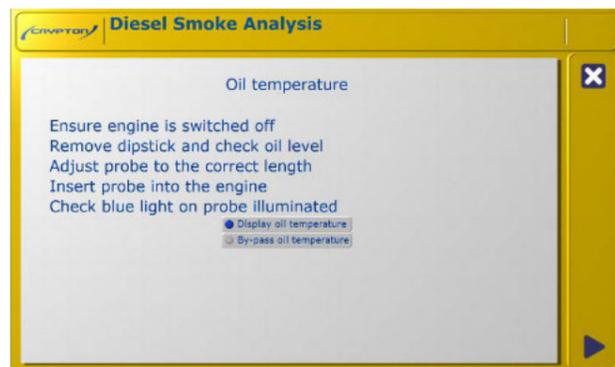


11. Select 'Display.....' or 'Bypass  ' then click the **PROCEED** icon to continue. The screen will then display the measured oil temperature.
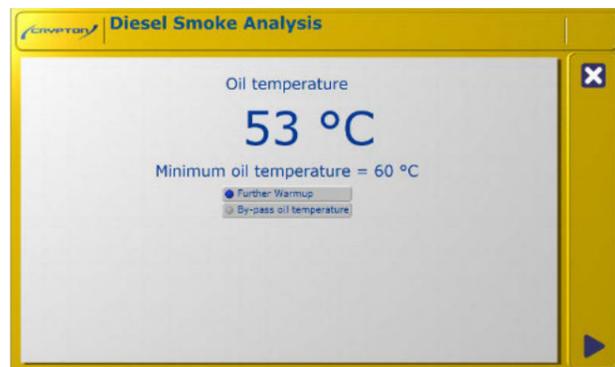


12. If the oil temperature probe or EOBD VCI are not used, the measurement may be bypassed. This will force a 40-second countdown before the procedure continues. However, it is imperative that the engine is fully warmed up before proceeding. Selecting further warm up will take the operator to an additional screen displaying engine speed to allow additional warm up of the engine if required.

13. Ensure the vehicle dipstick is refitted and then click the PROCEED icon to continue.
The equipment will perform a zero/span check during which, the following screens will be displayed:

14. The equipment will perform a zero/span check during which, the following screens will be displayed:
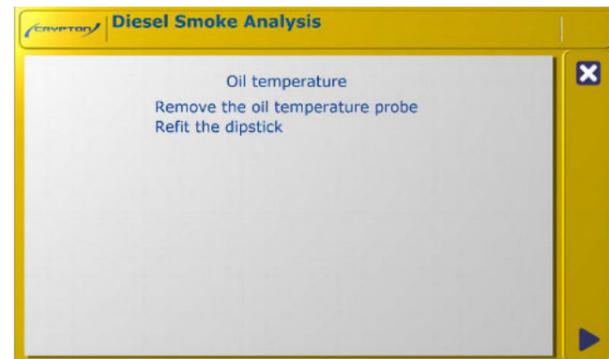


15. Click on the **PROCEED** icon to continue. The unit will perform a 10 second countdown whilst purging the smoke chamber.
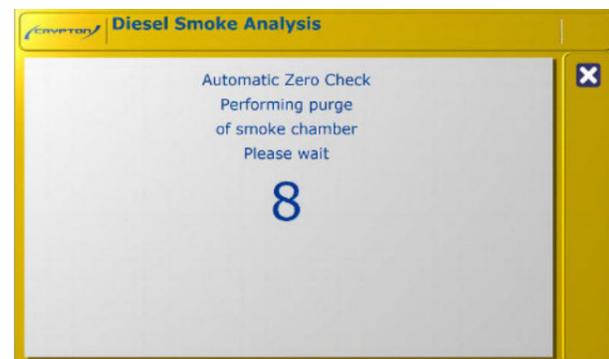


16.The following measurement and results screens are then displayed.
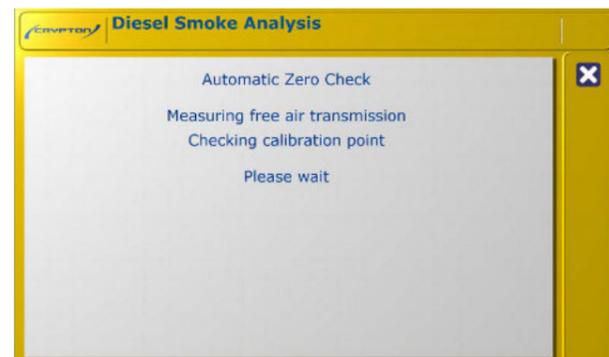


17. If the zero/span check fails, a warning screen will be displayed. No further testing/readings will be possible until the optics have been cleaned. Please refer to the Equipment Manual for details of lens cleaning.

18. Once the Zero check is complete. Click the **PROCEED** icon to continue.

19. You are then instructed to insert the sample probe into the exhaust. For Bluetooth systems with an RPM measuring device, this can also be connected at this stage.

> **NOTE:**
> **If you have a Bluetooth VCI configured, it will be an available option for reading RPM. Choose 'EOBD Interface' and follow on-screen instructions.**
>
> **NOTE:**
> **Not every vehicle supplied with a 16-pin EOBD connector supports EOBD. This applies to petrol and diesel vehicles. Communication will not be possible for vehicles which use unsupported protocols.**
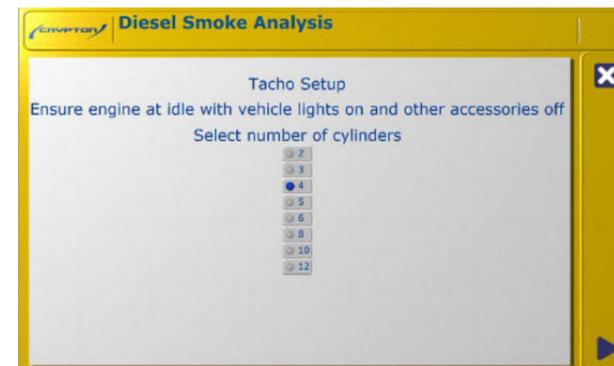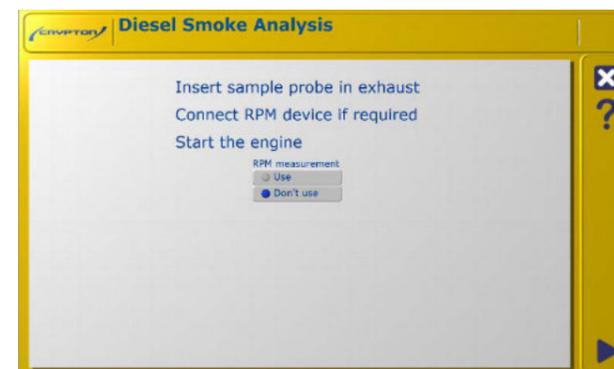


20. The RPM device will need to be initialised so that accurate readings are established and confirmed.

21. Connect the engine speed measurement device and ensure that it has been set up and is reading correctly before continuing. Refer to the on-screen set-up procedure for the appropriate device.

22. Use the buttons shown below to change the indicated engine speed where necessary.

**TACHOMETER SETUP**
1. *CDSS4/6:* Ensure engine is off. **BEWARE ROTATING PARTS.** Set the correct number of cylinders on the screen as prompted and attach the CDSS4/6 clips to the battery noting the correct polarity. Start the engine and allow to idle.

Check that the engine has reached operating temperature. Ensure all other accessories, internal blower, screen heater etc. are off but turn on the vehicle headlights. Allow the engine to idle while the CDSS4/6 initialises, approximately 17 seconds. When complete the unit will read engine speed on the bar graph.

**SMOKE MEASUREMENT**
1. Sit in the vehicle so that the screen is visible and prepare to open the throttle.

2. 'Blip' the throttle briefly and then allow the engine to idle for 10 seconds. A countdown will be displayed during this period.

3. (If you are using the optional remote Indicator Handset you can initiate the procedure using the handset control instead of 'blipping' the engine).
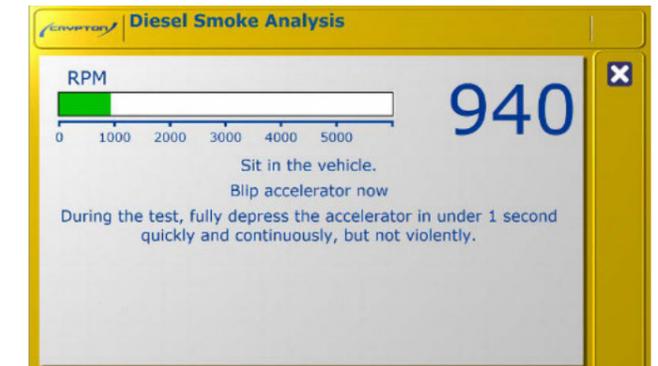
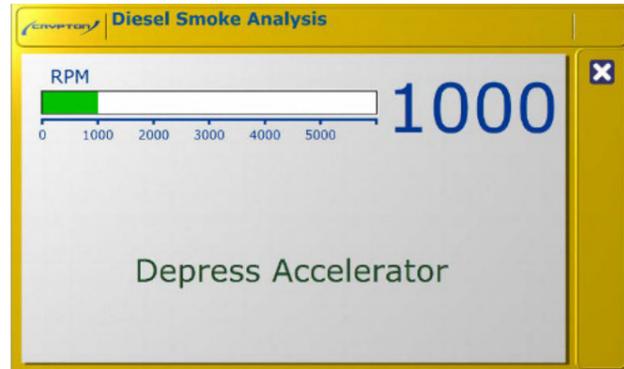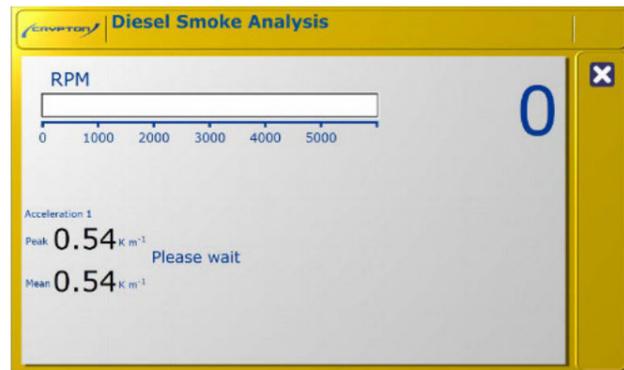4. When instructed fully depress the accelerator pedal and hold.

5. Release the accelerator pedal immediately when instructed and wait.

6. The result of that free acceleration will be displayed and the engine allowed to idle for 10 seconds.



7. The MOT procedure allows a 'fast pass', the limit is dependent on the category of the vehicle. If the vehicle emissions are below this limit on the first free acceleration, the vehicle will be considered to be a pass and the test will end. However this feature will be disabled if RPC test is selected (Cat B Vehicles only). If the vehicle emissions are above the limit, further free accelerations will be prompted up to a maximum of six. The program will then perform another zero/span check to ensure that the optics of the smokehead have not become contaminated causing inaccurate readings. If the Zero/Span check has passed, the results will then be displayed and a printout may be obtained.

> **NOTE:**
> During the zero check, if the drift is positive but less than the allowed limit of +0.1m-1 or 5% of arithmetic mean (whichever is greater), it is simply subtracted from the calculated mean. If the drift is above the limit, the results are void and will not be displayed or printed. The optics should be cleaned and a retest carried out.

**TEST RESULTS PAGE**
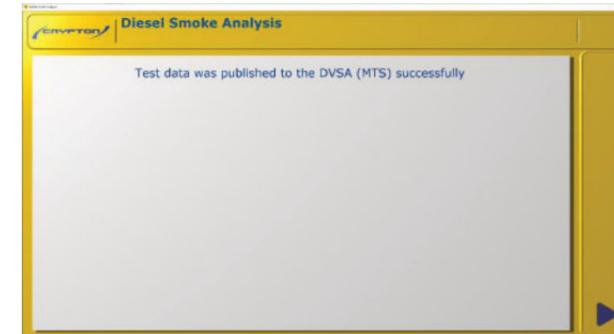Click on the printer icon to obtain a printout.
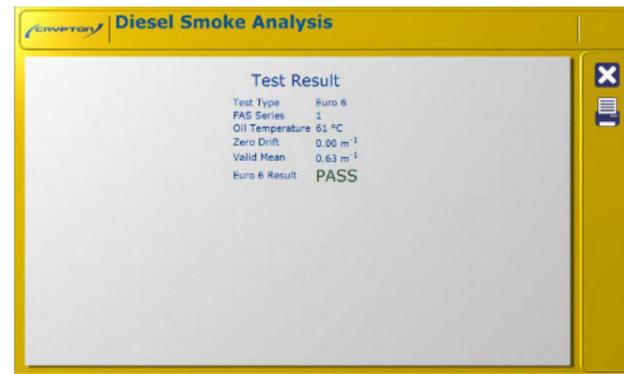


A failure will result in the option of a re-test.
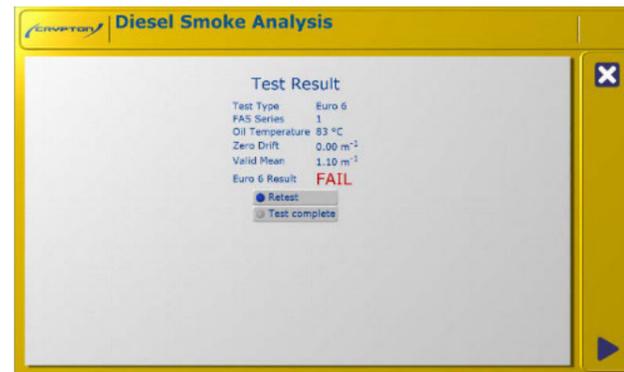


If the test vehicle was defined on the DVSA MTS on-line service, you will have the option to publish the results to the service after the test results view is closed.



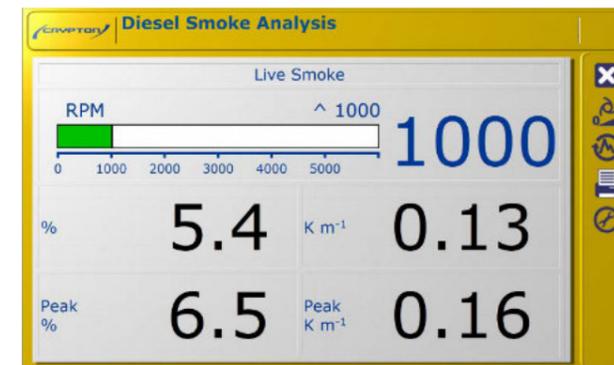Confirmation of the publishing will be displayed.



# 4. LIVE READINGS

To enter Live Readings, select the following icon:

 This selects a continuous 'live' and peak readings mode enabling a single free acceleration to be carried out.

The unit will perform a zero/span check and then display the live readings screen. A printout of the readings is also available.



 **Force a zero/span if necessary**

 **Resets the peak value**

 **PRINT, press this to operate printer**

 **RPM setting**

**TIME ADJUSTMENT**
To alter the time setting, select the following icon.

 This allows setting of the time only. The date setting can only be carried out by a UKAS accredited engineer.
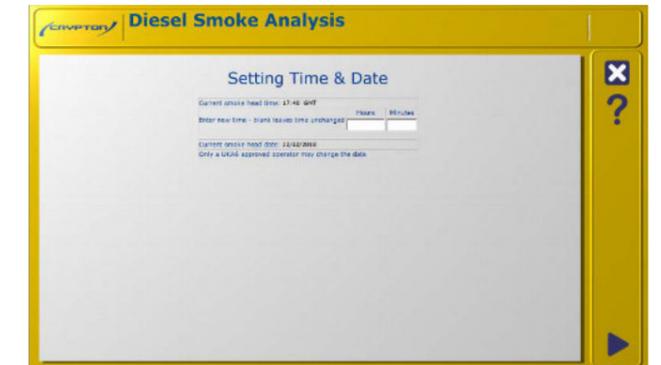


The new time must be entered in 24-hour clock format then click on PROCEED icon. To exit without changing the time, click on EXIT icon. The unit will automatically compensate for daylight saving changes between summer time and winter time.

**CALIBRATION**
To recalibrate the system, select the following icon.

 **DVSA Calibration Checks**
It is a DVSA requirement that all makes of smokemeter used for M.O.T. testing are calibrated at intervals specified by them. Currently these are:
**A.** A check by the operator at least once a week. Because the automatic calibration check described below occurs every time the Smokemeter is switched on there is no requirement for a weekly check.

**B.** UKAS calibration once a year.

A manual calibration check must be carried out by an approved technician; please contact the manufacturer for this service.

**AUTOMATIC CALIBRATION CHECK (ELECTRONIC METHOD)**

The Smokemeter takes its smoke readings on a percentage scale; 0% denotes clean air (i.e. no smoke at all), and 100% denotes total obscuration of the light beam (i.e. totally black smoke). These two values are set automatically; the first by having the light beam in clean air, and the second by switching the beam off so that the sensor sees no light at all.

A calibration check at a light level of 37.5% is then performed (equivalent to k = 1.88m-1).

No optical filters are used for this check; the light level is electronically generated by special circuitry (patented).

It is necessary for the calibration to be checked regularly since the 0% point (full light through chamber) can be affected by any soot which may land on the lenses during use. For this reason, the Smokemeter automatically performs a zero/span check at the start of each test or at any time that the Calibrate icon is selected.

The tolerance on the 'mid point' calibration check is 35.9% to 39.0% (equivalent to k = 1.88 ± 0.1 m-1). If it fails outside this limit, a warning is displayed and the 'MOT' test modes will be disabled. If this situation occurs - contact the manufacturer.
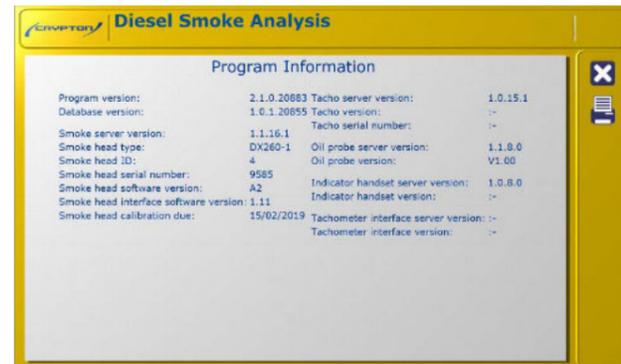
**INFORMATION**

To request program information select the following icon.

Clicking this icon displays a page with system information, including software version numbers.

This can be printed and may useful when calling the product helpline should any problems be encountered.



# 5. TECHNICAL SPECIFICATIONS

Conversion chart for k, HSU, FSN and mg/m3. (Extracted from MIRA Report No. 1965/10, Nuneaton 1965, AG Dodd and Z Holubecki).

| K coefficient of light absorption m-1 | Hartridge Smoke Units | Filter Smoke Number | Mg/m3 | Cal % (*) |
|---|---|---|---|---|
| 0.25 | 10 | 1.10 | 33 | 6.1 |
| 0.27 | 11 | 1.20 | 38 | 6.5 |
| 0.30 | 12 | 1.30 | 42 | 7.2 |
| 0.32 | 13 | 1.40 | 47 | 7.7 |
| 0.32 | 14 | 1.48 | 52 | 8.4 |
| 0.38 | 15 | 1.57 | 57 | 9.1 |
| 0.41 | 16 | 1.67 | 62 | 9.7 |
| 0.43 | 17 | 1.75 | 66 | 10.2 |
| 0.46 | 18 | 1.84 | 71 | 10.9 |
| 0.49 | 19 | 1.93 | 76 | 11.5 |
| 0.52 | 20 | 2.02 | 81 | 12.2 |
| 0.55 | 21 | 2.10 | 86 | 12.8 |
| 0.58 | 22 | 2.18 | 91 | 13.5 |
| 0.61 | 23 | 2.26 | 96 | 14.1 |
| 0.64 | 24 | 2.34 | 101 | 14.8 |
| 0.67 | 25 | 2.42 | 106 | 15.4 |
| 0.70 | 26 | 2.50 | 111 | 16.1 |
| 0.73 | 27 | 2.57 | 117 | 16.7 |
| 0.76 | 28 | 2.64 | 122 | 17.3 |
| 0.80 | 29 | 2.71 | 127 | 18.1 |
| 0.83 | 30 | 2.77 | 133 | 18.7 |
| 0.86 | 31 | 2.83 | 138 | 19.3 |
| 0.90 | 32 | 2.89 | 144 | 20.1 |
| 0.93 | 33 | 2.96 | 150 | 20.7 |
| 0.97 | 34 | 3.02 | 156 | 21.5 |
| 1.00 | 35 | 3.08 | 162 | 22.1 |
| 1.04 | 36 | 3.14 | 168 | 22.9 |
| 1.07 | 37 | 3.20 | 174 | 23.5 |
| 1.11 | 38 | 3.26 | 181 | 24.2 |
| 1.15 | 39 | 3.31 | 187 | 25.0 |
| 1.19 | 40 | 3.37 | 193 | 25.7 |
| 1.23 | 41 | 3.42 | 199 | 26.5 |
| 1.27 | 42 | 3.47 | 206 | 27.2 |
| 1.31 | 43 | 3.53 | 213 | 27.9 |
| 1.35 | 44 | 3.59 | 220 | 28.6 |
| 1.39 | 45 | 3.64 | 227 | 29.4 |
| 1.43 | 46 | 3.70 | 234 | 30.1 |
| 1.48 | 47 | 3.75 | 241 | 30.9 |
| 1.52 | 48 | 3.80 | 248 | 31.6 |
| 1.59 | 49 | 3.86 | 256 | 32.5 |

(*) Optical path length, L = 0.25m

| K coefficient of light absorption m-1 | Hartridge Smoke Units | Filter Smoke Number | Mg/m3 | Cal % (*) |
|---|---|---|---|---|
| 1.61 | 50 | 3.91 | 264 | 33.1 |
| 1.66 | 51 | 3.96 | 272 | 34.0 |
| 1.71 | 52 | 40.1 | 281 | 34.8 |
| 1.76 | 53 | 4.07 | 290 | 35.6 |
| 1.81 | 54 | 4.12 | 299 | 36.4 |
| 1.86 | 55 | 4.17 | 308 | 37.2 |
| 1.91 | 56 | 4.22 | 317 | 38.0 |
| 1.96 | 57 | 4.27 | 326 | 38.7 |
| 2.02 | 58 | 4.32 | 335 | 39.6 |
| 2.07 | 59 | 4.37 | 345 | 40.6 |
| 2.13 | 60 | 4.42 | 355 | 41.3 |
| 2.19 | 61 | 4.47 | 365 | 42.2 |
| 2.25 | 62 | 4.52 | 375 | 43.0 |
| 2.31 | 63 | 4.57 | 385 | 43.9 |
| 2.35 | 64 | 4.62 | 395 | 44.5 |
| 2.44 | 65 | 4.67 | 406 | 45.7 |
| 2.51 | 66 | 4.72 | 416 | 46.6 |
| 2.58 | 67 | 4.76 | 428 | 47.5 |
| 2.65 | 68 | 4.81 | 439 | 48.4 |
| 2.72 | 69 | 4.86 | 450 | 49.3 |
| 2.80 | 70 | 4.91 | 462 | 50.3 |
| 2.88 | 71 | 4.96 | 475 | 51.3 |
| 2.96 | 72 | 5.01 | 489 | 52.3 |
| 3.04 | 73 | 5.07 | 501 | 53.2 |
| 3.13 | 74 | 5.12 | 514 | 54.3 |
| 3.22 | 75 | 5.17 | 529 | 55.3 |
| 3.32 | 76 | 5.23 | 544 | 56.4 |
| 3.42 | 77 | 5.28 | 559 | 57.5 |
| 3.52 | 78 | 5.34 | 575 | 58.5 |
| 3.63 | 79 | 5.40 | 591 | 59.6 |
| 3.74 | 80 | 5.45 | 609 | 60.7 |
| 3.86 | 81 | 5.51 | 626 | 61.9 |
| 3.99 | 82 | 5.57 | 648 | 63.1 |
| 4.12 | 83 | 5.65 | 669 | 64.3 |
| 4.26 | 84 | 5.72 | 691 | 65.5 |
| 4.41 | 85 | 5.80 | 712 | 66.8 |
| 4.57 | 86 | 5.87 | 737 | 68.1 |
| 4.74 | 87 | 5.95 | 760 | 69.4 |
| 4.93 | 88 | 6.04 | 786 | 70.8 |
| 5.13 | 89 | 6.13 | 815 | 72.3 |
| 5.35 | 90 | 6.22 | 844 | 73.7 |

# 6. DVSA MTS CONNECTIVITY FOR PETROL & DIESEL TESTING

## REQUIREMENTS
- Windows 10 emissions test machine
- Internet connection for the testing machine.
- Software code (key) supplied by DVSA.
*Note: Crypton petrol and diesel programs require one DVSA key per-machine, both programs share one key if installed on the same computer.*

## COMPATIBLE SOFTWARE
- Platform Configurator software version 1.8.3 or greater
- WGTS3 version 2.0.4 or greater
- WGTS3UK petrol test plugin version 1.1.0 or greater
- WUKS2 diesel version 2.2.1 or greater

## CONFIGURING THE DVSA MTS CONNECTION

> **NOTE:**
> **You will require the DVSA supplied key files for this process. If the files were supplied as a ZIP archive, ensure you have extracted the contents of the file to a known destination.**
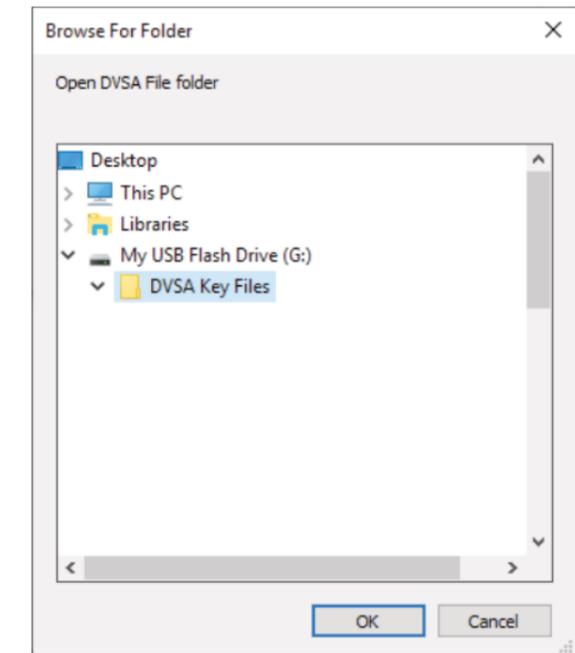
## LAUNCH PLATFORM CONFIGURATOR SOFTWARE:
Type Platform Configuration Utility into the search bar, or click Windows Start button and go to the Crypton start menu folder group to locate Platform Configuration Utility.
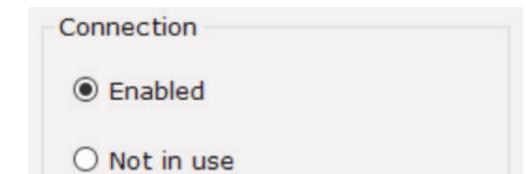
Select the DVSA tab
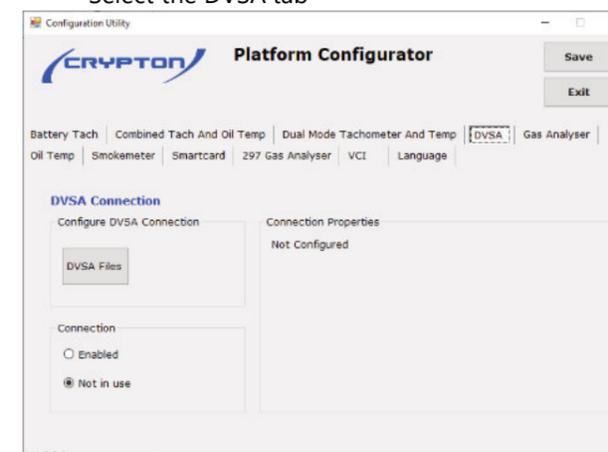


Click the DVSA Files button and browse to the directory folder where your DVSA key files were



extracted, Click OK.
Your key files will be copied, and connection settings will be configured. When completed the program will display the properties for your site.



Ensure the connection is set as Enabled.



Click Save, then Exit.

> **NOTE:**
> **If a USB memory stick was used to transfer the DVSA key files it can now be safely removed.**

With a successful connection to the DVSA MTS on-line system, the Petrol and diesel test programs will display available registrations of MTS workorder jobs you have created within the DVSA online system at the start of the test.



At the end of the test, after the results have been displayed for printing, the tester will be able to publish the vehicle test results back to the DVSA MTS system.
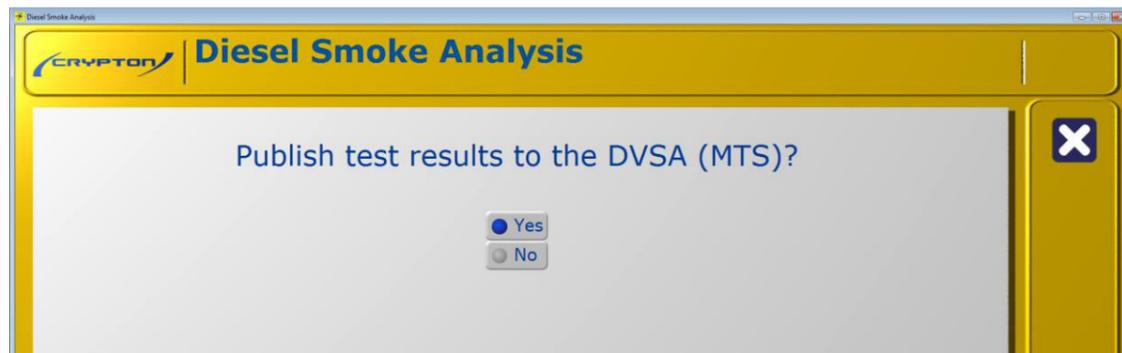
# 7. DISPOSAL OF EQUIPMENT

■ Do not dispose of this equipment as miscellaneous solid municipal waste but arrange to have it collected separately

■ The re-use or correct recycling of electronic equipment (EEE) is important in order to protect the environment and the wellbeing of humans In accordance with European Directive WEEE 2002/96/EC, special collection points are available for the delivery of waste electrical and electronic equipment.

■ The public administration and producers of electrical and electronic equipment are involved in facilitating the processes of the re-use and recovery of waste electrical and electronic equipment through the organisation of collection activities and the use of appropriate planning arrangements.

Unauthorised disposal of waste electrical and electronic equipment is punishable by law with appropriate penalties.

# 8. DISPOSAL OF BATTERIES

■ Batteries must be recycled or disposed of properly.

■ Do not throw batteries away as part of normal refuse disposal.

■ Do not throw batteries into open flame.

# 9. AFTER SALES SERVICE

Apart from the routine maintenance and adjustments stipulated in this manual the equipment must not be tampered with in any way. All further servicing must be carried out only by an engineer from an Authorised Agent. Failure to observe these conditions will invalidate the Guarantee.

**On-Site Service / Overhaul / Spare Parts**
If you require a Service Engineer to attend ON SITE, either due to:
■ an equipment fault
■ machine calibration
■ if the equipment covered by this manual requires to be sent back for factory overhaul
■ spare parts, please contact our Product Support Department.

**Crypton can provide information and contracts covering the following:**
■ Software Support Contracts
■ Software Updates
■ Accessories

**Outside UK mainland**
Service for export customers are provided by the agent from whom your equipment was purchased.

# 10. CONTACT DETAILS

■ **SALES**
 **Tel:** 0121 725 1400
 **Email:** sales@cryptontechnology.com

■ **SUPPORT**
 **Tel:** 0121 725 1366
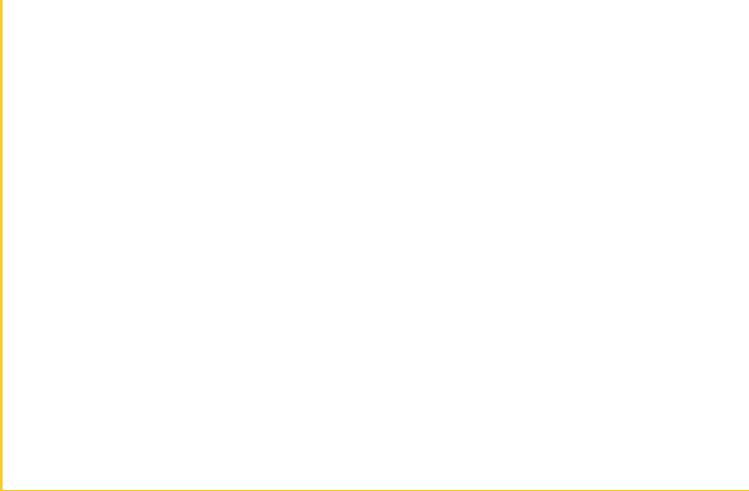 **Email:** support@cryptontechnology.com

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Birmingham B24 8TA
United Kingdom
www.cryptontechnology.com

Crypton - A Brand of the Continental Corporation

E & O E. The Company reserves the right to introduce improvements in design or specification without prior notice.

The sale of this product is subject to our standard terms, conditions and relevant product warranty.

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Support Tel: 0121 725 1366 | Email: support@cryptontechnology.com | Web: www.cryptontechnology.com
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