

UMS SUMMARY TEST REPORT

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ISSUED BY:
CRANAGE EMC TESTING LIMITED
STABLE COURT
OAKLEY
MARKET DRAYTON
SHROPSHIRE, TF9 4AG



Report No: **U0071R** Date of Issue: **20th December 2016**

This document summarises the results of testing to ascertain the appropriate Elexon Charge Codes for inclusion in BSCP520

Tested & Inspected for: **JCDecaux,
991 Great West Road,
London,
TW8 9DN.**

Test Dates: **3rd October 2016 – 10th October 2016.**
Initial Receipt Date of Test Item: **28th September 2016.**

Sample 1

Test Item Description: **TfL Digital Bus Shelter Advertising Display (Double LCD Screen)**
Tested on behalf of: **JCDecaux**

A Consumer panel was wired into the Display and consisted of the following components:

- **40A CPN RC240/03D (Labelled RCD).**
- **CPN MC125C (Labelled Screen & Rebooter).**
- **CHINT NB1-63 B1 (Line Filter).**
- **CH1NT NB1-63B4 (12V Transformer).**
- **CH1NT NB1-63B1 (24V Transformer).**
- **Line Filter Schaffner FN 2060-3-06.**
- **12V Contactor Finder 22.32.0.012.4320.**
- **230V Contactor Finder 22.32.0.230.4320.**
- **Meanwell 12V Transformer 100-240V 0.88A.**
- **Meanwell 24V Transformer 100-240V 0.88A.**
- **Description: Router.**
Model: TransPort WR21.
Part Number: WR21-L12B-DE1-5B.
Serial Number: 860461024891429.
Manufacturer: Digi International Inc. for JCDecaux.
Hardware Options: TE EMEA, 2E th/232 Ent.
- **Micro-Cell Rebooter (SMS).**
Manufacturer: JCDecaux.
Serial Number: 1199002-0019.
SMS Number: 07393 251255.

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Sample 2

Test Item Description: **TfL Digital Bus Shelter Advertising Display (Double LCD Screen)**
Tested on behalf of: **JCDecaux**

A Consumer panel was wired into the Display and consisted of the following components:

- **40A CPN RC240/03D (Labelled RCD).**
- **CPN MC125C (Labelled Screen & Rebooter).**
- **CHINT NB1-63 B1 (Line Filter).**
- **CH1NT NB1-63B4 (12V Transformer).**
- **CH1NT NB1-63B1 (24V Transformer).**
- **Line Filter Schaffner FN 2060-3-06.**
- **12V Contactor Finder 22.32.0.012.4320.**
- **230V Contactor Finder 22.32.0.230.4320.**
- **Meanwell 12V Transformer 100-240V 0.88A.**
- **Meanwell 24V Transformer 100-240V 0.88A.**

- **Description: Router.**
Model: TransPort WR21.
Part Number: WR21-L12B-DE1-5B.
Serial Number: 860461025208078.
Manufacturer: Digi International Inc. for JCDecaux.
Hardware Options: TE EMEA, 2E th/232 Ent.

- **Micro-Cell Rebooter (SMS).**
Manufacturer: JCDecaux.
Serial Number: 1199001-0020.
SMS Number: 07393 251353.

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Sample 3

Test Item Description: **TfL Digital Bus Shelter Advertising Display (Double LCD Screen)**
Tested on behalf of: **JCDecaux**

A Consumer panel was wired into the Display and consisted of the following components:

- **40A CPN RC240/03D (Labelled RCD).**
- **CPN MC125C (Labelled Screen & Rebooter).**
- **CHINT NB1-63 B1 (Line Filter).**
- **CH1NT NB1-63B4 (12V Transformer).**
- **CH1NT NB1-63B1 (24V Transformer).**
- **Line Filter Schaffner FN 2060-3-06.**
- **12V Contactor Finder 22.32.0.012.4320.**
- **230V Contactor Finder 22.32.0.230.4320.**
- **Meanwell 12V Transformer 100-240V 0.88A.**
- **Meanwell 24V Transformer 100-240V 0.88A.**

- **Description: Router.**
Model: TransPort WR21.
Part Number: WR21-L12B-DE1-5B.
Serial Number: 860461025044754.
Manufacturer: Digi International Inc. for JCDecaux.
Hardware Options: TE EMEA, 2E th/232 Ent.

- **Micro-Cell Rebooter (SMS).**
Manufacturer: JCDecaux.
Serial Number: 1199002-0020.
SMS Number: 07393 251254.

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Sample 4

Test Item Description: **TfL Digital Bus Shelter Advertising Display (Double LCD Screen)**
Tested on behalf of: **JCDecaux**

A Consumer panel was wired into the Display and consisted of the following components:

- **40A CPN RC240/03D (Labelled RCD).**
- **CPN MC125C (Labelled Screen & Rebooter).**
- **CHINT NB1-63 B1 (Line Filter).**
- **CH1NT NB1-63B4 (12V Transformer).**
- **CH1NT NB1-63B1 (24V Transformer).**
- **Line Filter Schaffner FN 2060-3-06.**
- **12V Contactor Finder 22.32.0.012.4320.**
- **230V Contactor Finder 22.32.0.230.4320.**
- **Meanwell 12V Transformer 100-240V 0.88A.**
- **Meanwell 24V Transformer 100-240V 0.88A.**

- **Description: Router.**
Model: TransPort WR21.
Part Number: WR21-L12B-DE1-5B.
Serial Number: 860461024872627.
Manufacturer: Digi International Inc. for JCDecaux.
Hardware Options: TE EMEA, 2E th/232 Ent.

- **Micro-Cell Rebooter (SMS).**
Manufacturer: JCDecaux.
Serial Number: 1199002-0001.
SMS Number: 07393 251310.

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Sample 5

Test Item Description: **TfL Digital Bus Shelter Advertising Display (Double LCD Screen)**
Tested on behalf of: **JCDecaux**

A Consumer panel was wired into the Display and consisted of the following components:

- **40A CPN RC240/03D (Labelled RCD).**
- **CPN MC125C (Labelled Screen & Rebooter).**
- **CHINT NB1-63 B1 (Line Filter).**
- **CH1NT NB1-63B4 (12V Transformer).**
- **CH1NT NB1-63B1 (24V Transformer).**
- **Line Filter Schaffner FN 2060-3-06.**
- **12V Contactor Finder 22.32.0.012.4320.**
- **230V Contactor Finder 22.32.0.230.4320.**
- **Meanwell 12V Transformer 100-240V 0.88A.**
- **Meanwell 24V Transformer 100-240V 0.88A.**

- **Description: Router.**
Model: TransPort WR21.
Part Number: WR21-L12B-DE1-5B.
Serial Number: 459174770.
Manufacturer: Digi International Inc. for JCDecaux.
Hardware Options: TE EMEA, 2E th/232 Ent.

- **Micro-Cell Rebooter (SMS).**
Manufacturer: JCDecaux.
Serial Number: 1199002-0010.
SMS Number: 07392 276146.

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Sample 6

Test Item Description: **TfL Digital Bus Shelter Advertising Display (Double LCD Screen)**
Tested on behalf of: **JCDecaux**

A Consumer panel was wired into the Display and consisted of the following components:

- 40A CPN RC240/03D (Labelled RCD).
- CPN MC125C (Labelled Screen & Rebooter).
- CHINT NB1-63 B1 (Line Filter).
- CH1NT NB1-63B4 (12V Transformer).
- CH1NT NB1-63B1 (24V Transformer).
- Line Filter Schaffner FN 2060-3-06.
- 12V Contactor Finder 22.32.0.012.4320.
- 230V Contactor Finder 22.32.0.230.4320.
- Meanwell 12V Transformer 100-240V 0.88A.
- Meanwell 24V Transformer 100-240V 0.88A.

- Description: Router.
Model: TransPort WR21.
Part Number: WR21-L12B-DE1-5B.
Serial Number: 860461025209969.
Manufacturer: Digi International Inc. for JCDecaux.
Hardware Options: TE EMEA, 2E th/232 Ent.

- Micro-Cell Rebooter (SMS).
Manufacturer: JCDecaux.
Serial Number: 1198999-0003.
SMS Number: 07393 251280.

Approved Signatories: M. Richens – Test Engineer

A handwritten signature in black ink, appearing to read 'M. Richens'.

APPROVED SIGNATORY

Verification Signatories: K. Richens – Managing Director

A handwritten signature in black ink, appearing to read 'K. Richens'.

VERIFICATION SIGNATORY

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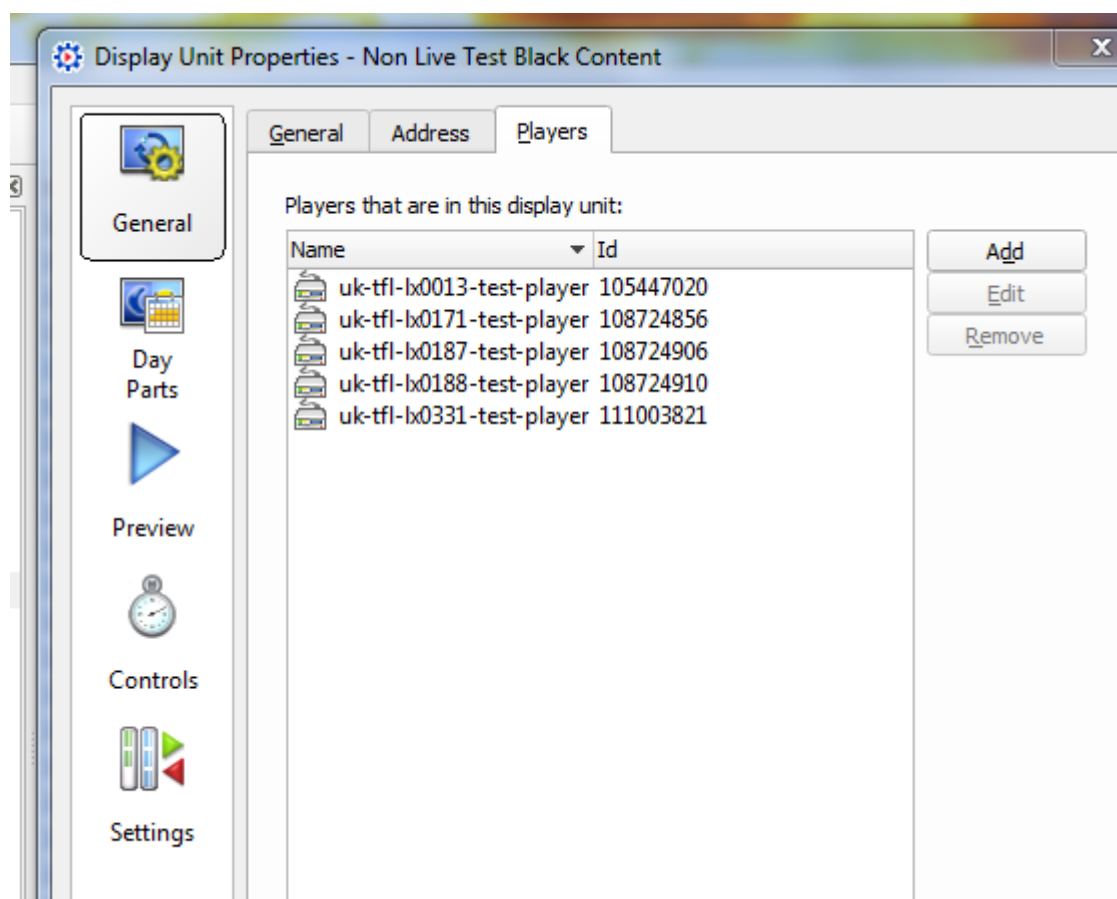
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Mode 1

210 – 250V AC 50 Hz was supplied to the unit under test. 100% black content was sent through a booking schedule via a 3G connection to the LCD screen. This was configured by JCDecaux through a content management system (see image below). As soon as the display units were online the content was assigned and played accordingly.



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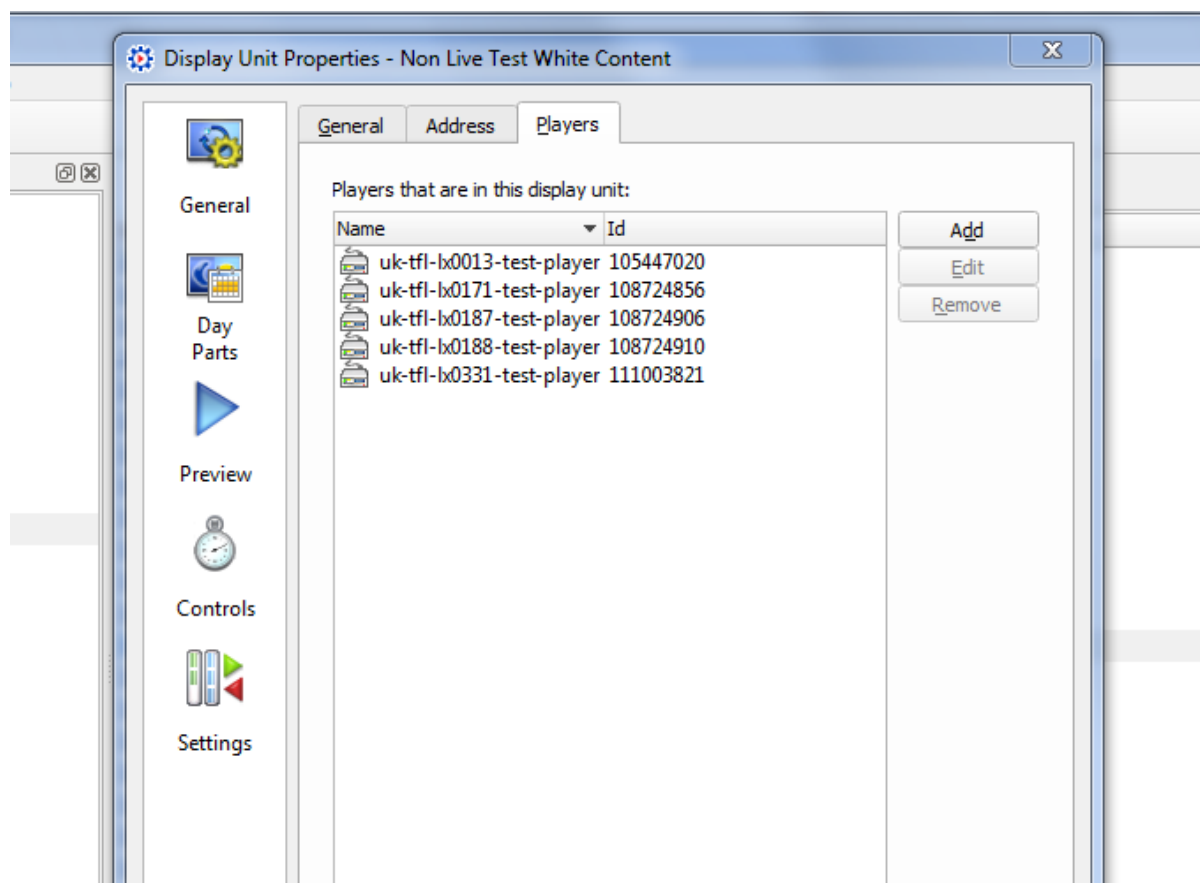
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Mode 2

210 – 250V AC 50 Hz was supplied to the unit under test. 100% white content was sent through a booking schedule via a 3G connection to the LCD screen. This was configured by JCDecaux through a content management system (see image below). As soon as the display units were online the content was assigned and played accordingly.



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Mode 3

210 – 250V AC 50 Hz was supplied to the unit under test. A representative advertising image (Ford – see below) was sent through a booking schedule via a 3G connection to the LCD screen. This was configured by JCDecaux through a content management system. As soon as the display unit was online the content was assigned and played accordingly. As agreed with Elexon only one sample was tested in this mode.



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Mode 4

210 – 250V AC 50 Hz was supplied to the unit under test. A representative advertising image (Old Mount Cider – see below) was sent through a booking schedule via a 3G connection to the LCD screen. This was configured by JCDecaux through a content management system. As soon as the display unit was online the content was assigned and played accordingly. As agreed with Elexon only one sample was tested in this mode.



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Mode 5

210 – 250V AC 50 Hz was supplied to the unit under test. A representative advertising image (Iglu – see below) was sent through a booking schedule via a 3G connection to the LCD screen. This was configured by JCDecaux through a content management system. As soon as the display unit was online the content was assigned and played accordingly. As agreed with Elexon only one sample was tested in this mode.



Test Conditions for all modes: A stabilisation period of 15 minutes was given, prior to measurements, at 230V 50Hz. The EUT was powered on. Measurements were subsequently taken after 15 minutes at each voltage level. All results are rounded to 2 decimal places.

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Mode 1

| Watts | | | | | |
|-------------------|------------|----------|----------|----------|----------|
| Voltage (Vrms) | Sample No. | | | | |
| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
| 210 | 365.82 | 377.66 | 379.17 | 380.41 | 381.18 |
| 220 | 364.25 | 378.29 | 378.10 | 378.89 | 380.22 |
| 230 | 364.28 | 378.50 | 377.99 | 378.44 | 381.87 |
| 240 | 363.37 | 378.19 | 377.03 | 378.54 | 383.40 |
| 250 | 363.61 | 377.19 | 376.43 | 376.67 | 381.13 |
| VA | | | | | |
| Voltage (Vrms) | Sample No. | | | | |
| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
| 210 | 476.74 | 485.93 | 490.61 | 489.82 | 492.10 |
| 220 | 490.57 | 502.05 | 504.43 | 504.79 | 506.82 |
| 230 | 510.97 | 520.68 | 521.98 | 522.64 | 527.29 |
| 240 | 531.76 | 541.16 | 544.11 | 545.16 | 550.68 |
| 250 | 558.62 | 565.72 | 570.45 | 569.76 | 573.83 |

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Mode 2

| Watts | | | | | |
|-------------------|------------|----------|----------|----------|----------|
| Voltage (Vrms) | Sample No. | | | | |
| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
| 210 | 791.68 | 802.00 | 792.63 | 810.36 | 816.03 |
| 220 | 790.51 | 807.35 | 791.67 | 809.06 | 805.09 |
| 230 | 789.41 | 816.68 | 788.60 | 806.02 | 802.18 |
| 240 | 785.46 | 803.63 | 786.86 | 796.57 | 811.66 |
| 250 | 784.53 | 786.30 | 786.16 | 792.30 | 815.13 |
| VA | | | | | |
| Voltage (Vrms) | Sample No. | | | | |
| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
| 210 | 904.60 | 914.81 | 907.90 | 923.90 | 931.29 |
| 220 | 916.64 | 932.44 | 919.76 | 934.70 | 932.30 |
| 230 | 933.54 | 956.06 | 932.61 | 944.90 | 945.09 |
| 240 | 946.04 | 959.88 | 948.86 | 952.98 | 971.16 |
| 250 | 965.16 | 961.07 | 966.35 | 968.72 | 994.74 |

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Mode 3

| Watts | |
|-------------------|-----------------|
| Voltage (Vrms) | Sample No. |
| | Sample 1 |
| 210 | 800.65 |
| 220 | 798.45 |
| 230 | 813.82 |
| 240 | 802.33 |
| 250 | 792.92 |
| VA | |
| Voltage (Vrms) | Sample No. |
| | Sample 1 |
| 210 | 891.87 |
| 220 | 900.34 |
| 230 | 927.88 |
| 240 | 928.83 |
| 250 | 933.54 |

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Mode 4

| Watts | |
|-------------------|-----------------|
| Voltage (Vrms) | Sample No. |
| | Sample 1 |
| 210 | 794.11 |
| 220 | 801.50 |
| 230 | 789.91 |
| 240 | 778.82 |
| 250 | 777.45 |
| VA | |
| Voltage (Vrms) | Sample No. |
| | Sample 1 |
| 210 | 885.59 |
| 220 | 903.58 |
| 230 | 904.34 |
| 240 | 904.81 |
| 250 | 917.19 |

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Mode 5

| Watts | |
|----------------|-----------------|
| Voltage (Vrms) | Sample No. |
| | Sample 1 |
| 210 | 796.19 |
| 220 | 794.75 |
| 230 | 791.08 |
| 240 | 788.62 |
| 250 | 789.03 |
| VA | |
| Voltage (Vrms) | Sample No. |
| | Sample 1 |
| 210 | 887.25 |
| 220 | 896.39 |
| 230 | 904.51 |
| 240 | 914.08 |
| 250 | 928.26 |

Ambient temperature & humidity range recorded during test period:
18°C - 22°C

Test Equipment

| Asset Number | Description | Calibration Date | Calibration Due |
|--------------|----------------|------------------|-----------------|
| AN288 | Power Source | - | - |
| AN1162 | Power Analyser | 06/09/2016 | - |
| AN452 | Timer | - | - |

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Peripheral Equipment

There was no peripheral equipment used with the test item.

Photographs of the Test Item



LCD Screen x 2 Active – Mode 2 Showing
'Old Mount Cider' tested 14/12/16.

Measurement Uncertainty

The 95 % confidence measurement uncertainty for the AC Power Analyser is 0.17%.