

# UMS SUMMARY TEST REPORT

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ISSUED BY:  
CRANAGE EMC TESTING LIMITED  
WALLACE WAY  
TERN VALLEY BUSINESS PARK  
MARKET DRAYTON  
SHROPSHIRE, TF9 3AG



Report No: **U0093R** Date of Issue: **29<sup>th</sup> November 2018**

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

Tested & Inspected for: **Chubb Systems Limited,  
Shadsworth Road,  
Blackburn,  
BB1 2PR.**

Test Dates: **12<sup>th</sup> November 2018 – 19<sup>th</sup> November 2018.**  
Receipt Date of Test Item: **12<sup>th</sup> November 2018**

## Sample 1

Test Item Description: **Television Outstation used in the Highways England CCTV network**  
Manufacturer: **Chubb (TVBU) & Hikvision (Camera)**  
Model Numbers/Names: **TVBU & DS-2DF823615X-AELW (Camera)**  
Serial Numbers: **SK-11-18-389 (TVBU) & 188447398 (Camera)**

## Sample 2

Test Item Description: **Television Outstation used in the Highways England CCTV network**  
Manufacturer: **Chubb (TVBU) & Hikvision (Camera)**  
Model Numbers/Names: **TVBU & DS-2DF823615X-AELW (Camera)**  
Serial Numbers: **SKE-1128400 (TVBU) & 222121635 (Camera)**

## Sample 3

Test Item Description: **Television Outstation used in the Highways England CCTV network**  
Manufacturer: **Chubb (TVBU) & Hikvision (Camera)**  
Model Numbers/Names: **TVBU & DS-2DF823615X-AELW (Camera)**  
Serial Numbers: **SK-11-18-385 (TVBU) & 222121625 (Camera)**

## Sample 4

Test Item Description: **Television Outstation used in the Highways England CCTV network**  
Manufacturer: **Chubb (TVBU) & Hikvision (Camera)**  
Model Numbers/Names: **TVBU & DS-2DF823615X-AELW (Camera)**  
Serial Numbers: **SK-11-18-386 (TVBU) & 222121643 (Camera)**

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## Sample 5

Test Item Description: **Television Outstation used in the Highways England CCTV network**  
Manufacturer: **Chubb (TVBU) & Hikvision (Camera)**  
Model Numbers/Names: **TVBU & DS-2DF823615X-AELW (Camera)**  
Serial Numbers: **SK-11-18-387 (TVBU) & 222121623 (Camera)**

### Peripheral Equipment Used

**HP Compaq Small Form Factor Desktop Personal Computer**  
Model: **dc7900**  
Serial Number: **CZC0035M5W**

**Samsung Monitor**  
Model: **GH19LS**  
Serial Number: **HA19HTBP115697X**

**USB Keyboard & Mouse**

Approved Signatories: M. Richens - Technical Director

Handwritten signature of M. Richens in black ink.

APPROVED SIGNATORY

Verification Signatories: K. Richens – Managing Director

Handwritten signature of K. Richens in black ink.

VERIFICATION SIGNATORY

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**Mode 1:** The television base unit (TVBS) was connected to the camera unit. The TVBS was supplied with the required 210 – 250V AC 50 Hz for the purpose of the testing. In accordance with the customer's instructions the video settings were set to the highest resolution (See photo below) as this is how it will be commissioned and used only (H.264 video encoding 1920\*1080P 25 FPS). The camera was set in daytime active mode (Infra-red disabled). Link established via a LAN connection between the TVBS and a peripheral desktop PC. Chubb Systems TVOS Test Facility was used on the peripheral laptop to control and operate camera.

**Mode 2:** As mode 1, but with the IR 'On'.

**Mode 3:** As mode 1, but with the Wiper 'On'. This mode was only measured for sample 1.

**Mode 4:** As mode 1, but with the Zoom In/Off 'Active'. This mode was only measured for sample 1.

**Mode 5:** As mode 1, but with the panning 'Active'. This mode was only measured for sample 1.

**Mode 6:** As mode 1, but with the tilt 'Active'. This mode was only measured for sample 1.

**Test Condition:** - Stabilisation period of 30 minutes given prior to measurements at 230V 50Hz. Measurements were subsequently taken after 15 minutes at each voltage level. This was found to be an adequate time window for the purpose of the test measurements.

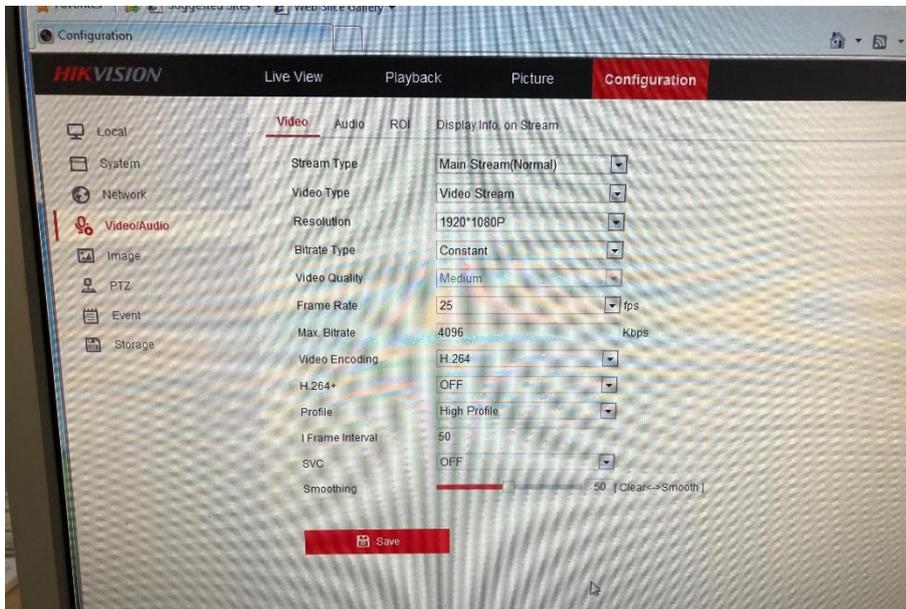
All results are rounded to 2 decimal places.

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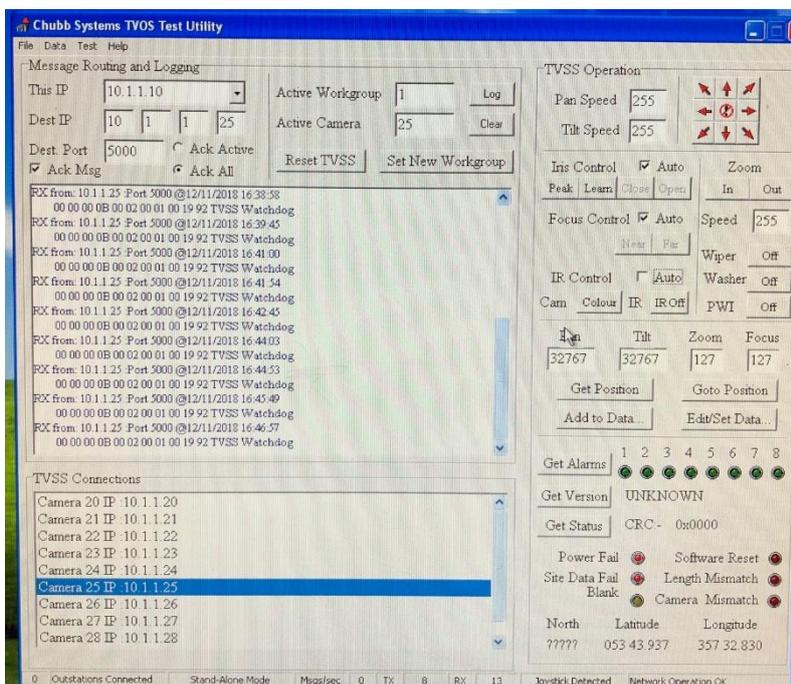
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Above: Camera configuration. Settings above are defined by the manufacturer and will not change. This cannot be adjusted within the TVBS system.



Above: Chubb Systems TVOS Test Facility.

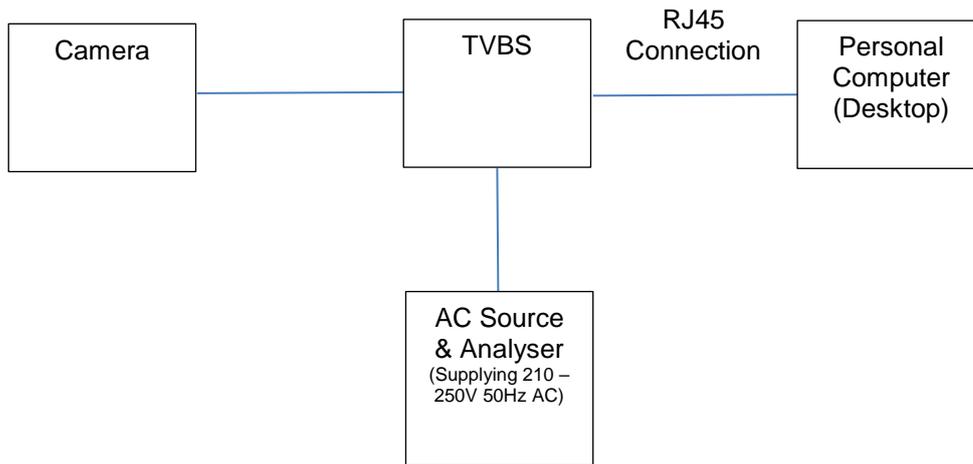
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## Block Diagram



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## Mode 1

Watts					
Voltage (Vrms)	Sample No.				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
210	23.84	23.40	23.56	23.62	23.34
220	23.87	23.47	23.58	23.69	23.36
230	23.91	23.58	23.69	23.75	23.43
240	24.09	23.73	23.81	23.85	23.59
250	24.25	23.88	24.01	23.98	23.78

VA					
Voltage (Vrms)	Sample No.				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
210	44.61	43.47	43.44	43.67	43.66
220	46.04	44.94	44.85	45.11	45.08
230	47.48	46.47	46.35	46.59	46.58
240	49.12	48.04	47.91	48.11	48.19
250	50.72	49.60	49.50	49.67	49.82

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## Mode 2

Watts					
Voltage (Vrms)	Sample No.				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
210	49.02	49.08	49.32	48.80	48.89
220	48.57	48.71	48.96	48.39	48.50
230	48.28	48.39	48.68	48.10	48.22
240	48.03	48.18	48.48	47.90	48.07
250	47.92	48.06	48.34	47.76	48.07

VA					
Voltage (Vrms)	Sample No.				
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
210	73.82	73.59	73.79	73.33	73.53
220	74.71	74.62	74.69	74.28	74.54
230	75.79	75.67	75.78	75.35	75.63
240	76.93	76.88	76.98	76.64	77.01
250	78.23	76.16	78.22	77.90	78.50

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## Mode 3

Watts	
Voltage (Vrms)	Sample No.
	<b>Sample 1</b>
<b>210</b>	<b>26.17</b>
<b>220</b>	<b>26.54</b>
<b>230</b>	<b>26.62</b>
<b>240</b>	<b>26.70</b>
<b>250</b>	<b>26.81</b>

VA	
Voltage (Vrms)	Sample No.
	<b>Sample 1</b>
<b>210</b>	<b>47.28</b>
<b>220</b>	<b>49.12</b>
<b>230</b>	<b>50.61</b>
<b>240</b>	<b>52.10</b>
<b>250</b>	<b>53.64</b>

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## Mode 4

Watts	
Voltage (Vrms)	Sample No.
	<b>Sample 1</b>
<b>210</b>	<b>25.09</b>
<b>220</b>	<b>25.07</b>
<b>230</b>	<b>25.17</b>
<b>240</b>	<b>25.25</b>
<b>250</b>	<b>25.26</b>

VA	
Voltage (Vrms)	Sample No.
	<b>Sample 1</b>
<b>210</b>	<b>46.06</b>
<b>220</b>	<b>47.41</b>
<b>230</b>	<b>48.94</b>
<b>240</b>	<b>50.42</b>
<b>250</b>	<b>51.82</b>

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## Mode 5

Watts	
Voltage (Vrms)	Sample No.
	<b>Sample 1</b>
<b>210</b>	<b>26.51</b>
<b>220</b>	<b>26.55</b>
<b>230</b>	<b>26.61</b>
<b>240</b>	<b>26.75</b>
<b>250</b>	<b>26.84</b>

VA	
Voltage (Vrms)	Sample No.
	<b>Sample 1</b>
<b>210</b>	<b>47.72</b>
<b>220</b>	<b>49.14</b>
<b>230</b>	<b>50.62</b>
<b>240</b>	<b>52.17</b>
<b>250</b>	<b>53.66</b>

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## Mode 6

Watts	
Voltage (Vrms)	Sample No.
	<b>Sample 1</b>
<b>210</b>	<b>27.14</b>
<b>220</b>	<b>27.13</b>
<b>230</b>	<b>27.23</b>
<b>240</b>	<b>27.30</b>
<b>250</b>	<b>27.43</b>

VA	
Voltage (Vrms)	Sample No.
	<b>Sample 1</b>
<b>210</b>	<b>48.44</b>
<b>220</b>	<b>49.81</b>
<b>230</b>	<b>51.33</b>
<b>240</b>	<b>52.80</b>
<b>250</b>	<b>54.35</b>

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**Ambient temperature range recorded during test period:**  
20.0°C

## Test Equipment

Asset Number	Description	Calibration Date	Calibration Due
AN288	Power Source	-	-
AN1162	Power Analyser	05/12/2017	-

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## Photographs of the Test Item



Above: Test Setup

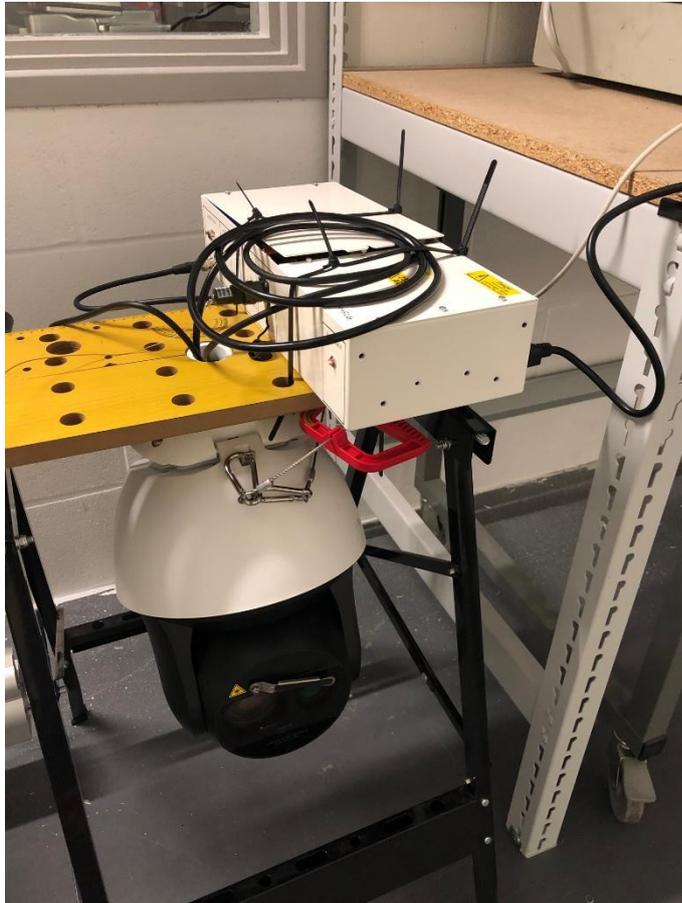
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**Above: System under test**

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**Above: Peripheral Desktop**

## **Measurement Uncertainty**

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

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