



Electronic Test & Calibration Ltd.

D12962

Electrical Power Measurement

Customer

Systems Engineering & Assessment Ltd., Building 660, The Gardens, Bristol Business Park, Coldharbour Lane, Bristol, BS16 1EJ

Location

Electronic Test & Calibration Ltd., Unit 14 Caddsdwn Industrial Park, Clovelly Road, Bideford, EX39 3DX

Dates of test

6th May 2015

Equipment under test

Bus Lane Camera System

Sample	Base Unit	Power Supply	Camera	GSM
Sample 1	977512-017	RB3B131166	425	YB11835
Sample 2	977519-019	RB48011619	421	YB11838
Sample 3	977512-001	RB3B131171	429	YB11837
Sample 4	977512-016	RB48011621	435	YB11834
Sample 5	977512-007	RB48011618	428	YB11833

Disclaimer

The measurements made are valid at the time of measurement and do not represent the EUT characteristics under different operating conditions. Any conclusions drawn from these measurements are based purely on the represented information and are made in good faith. Any recommendations are made without prejudice and any changes in performance must be verified by testing to the appropriate standards. The following results and report are for the EUT tested as stated only and should not be transferred between product families.

Test Engineer

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Signatory & Head of Laboratory

Becky Scott

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Standards and Results Summary

Standard	Description	
TR1100 Issue E : 2013	General Specifications for Motorway Communication Equipment	
Section 6.2	Energy usage and efficiency	
Elexon	Unmetered supply measurement procedure	

Status	Date	Report Name and Version
Original	7 th May 2015	D12962 EMC Test Report_01.pdf

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Equipment configuration

The system was configured as shown in photographs below. The EUT only has one operating state and that is 'on'.



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TR1100 Issue E: 2013 clause 6.2

Elxon - Unmetered supply overview (undated document)

Date of Test	Temperature °C	Humidity %	Pressure mB
6 th May 2015	19	49	988

Equipment used	ID No.
Voltech 3000A power analyser	ETC1356
Kikusui PCR3000LE Power supply	ETC1506
Cables used	
IEC Mains Lead	

Calibration

All equipment used during testing was in current calibration.

Limits

N/A

Deviations

None

Testing

The standard calls for the P, VA, VAr and PF consumption to be measured at 210 V, 220 V, 230 V, 240 V, 250 V, 50 Hz to a minimum accuracy of +/- 2%. A minimum of 5 samples should be tested.

Measurement	Voltage	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Watts	210	36.81	34.52	36.03	35.06	34.05
	220	35.44	35.44	35.64	35.22	34.22
	230	35.36	35.17	36.33	35.54	34.02
	240	35.72	34.64	35.38	35.12	35.35
	250	37.33	37.14	37.57	37.05	36.42
VA	210	43.46	42.5	43.85	42.97	42.01
	220	47.8	44.28	45.04	44.27	43.31
	230	47.46	46.13	46.92	45.75	44.67
	240	50.16	49.55	50.54	49.75	48.56
	250	51.71	51.41	51.82	51.25	50.32
VAr	210	25.49	25.17	25.28	25.01	24.91
	220	27.74	27.23	27.26	26.97	26.84
	230	29.91	30.03	29.45	28.92	29.06
	240	34.99	35.31	34.69	35.12	34.48
	250	37.63	37.51	34.48	35.97	36.9
PF	210	0.824	0.806	0.813	0.813	0.806
	220	0.809	0.794	0.796	0.792	0.786
	230	0.765	0.753	0.777	0.774	0.762
	240	0.698	0.698	0.694	0.696	0.698
	250	0.692	0.664	0.721	0.687	0.678

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Uncertainty of measured voltage 0.2 %

Uncertainty of measured power 1.1 %

Uncertainty of measured VA 1.1 %

The reported uncertainty is based on a standard uncertainty multiplied by the coverage factor $k=2$, providing a level of confidence of approximately 95%.

End of Report