



KEMA HIGH-VOLTAGE LABORATORY

SUMMARY

Order no.: 70870109

CLIENT

KYLAND Technology Co., Ltd.
Beijing, China

SUMMARY OF TEST REPORT NO.

08-1441 (Environmental tests)
08-2380 (Functional tests)

MATERIAL TESTED

SICOM3024P Ethernet Switch
Firmware version: 1.2.10
Hardware version: 1.4

TEST PROGRAMME

Complete test program according IEC 61850-3 and IEEE 1613 (see annex)

DATE AND PLACE OF THE TEST

27 October until 7 November 2008 in the KEMA High-Voltage Laboratory, Arnhem, the Netherlands.

PERSONS ATTENDING THE TESTS

Mr Zhang Guogang

KYLAND Technology Co., Ltd.
Beijing, China

THE TESTS WERE CARRIED OUT BY

Mr Dick van Aartrijk
Mr Herman Koerts

KEMA High-Voltage Laboratory,
Arnhem, the Netherlands

SUMMARY AND CONCLUSION

The results obtained relate only to the work ordered and the material tested. The mechanical tests will be performed in the period from 24 November 2008 until 26 November 2008, the other tests were passed.

KEMA Nederland B.V.

S.A.M. Verhoeven
KEMA High-Voltage Laboratory

Arnhem, 7 November 2008

Test	IEC 61850-3 / IEEE 1613	SICOM3024P		Result
		220VDC		
		PSU	RJ45	
Climatic tests				
Low temperature use	5.2 / 4.1.1	IEC 60068-2-1; Ab; -40°C 16 hours IEC60870-2-2 CLASS C3(3K7) –40°C		Pass
Low temperature storage	5.2 / 4.1.2	IEC 60068-2-1; Ab; -40°C 16 hours IEC 60870-2-2 CLASS Ct1(2K4) -40°C		Pass
High temperature use	5.2 / 4.1.1	IEC 60068-2-2;Bd; +85°C 16 hour IEC60870-2-2 others +85°C		Pass
High temperature storage	5.2 / 4.1.2	IEC 60068-2-2;Bd; +85°C 16 hour IEC60870-2-2 others +85°C		Pass
Damp heat	5.3 / 4.1.3	IEC 60068-2-78; Cab; +55 95%; 24 hours		Pass
Mechanical tests				
Vibration	5.5 / 10	Class Cm:(3M6,4M6)		Inconclusive
Shock	5.5 / -	Class Cm:(3M6,4M6)		Inconclusive
Free fall	5.5 / 10	Class Cm:(3M6,4M6)		Inconclusive
Static load	5.5 / -	Class Cm:5kPa		Inconclusive
EMC tests				
Electrostatic discharge	- / 9	IEC61000-4-2 8kV contact; 15kV air		Pass
EM fields	5.7.2 / 9	IEC61000-4-3 80 MHz – 2000 MHz; 10V/m; AM 80% 1kHz		Pass
Fast transient	5.7.1.4 / 7	IEC 61000-4-4 4kV CM; TM	IEC 61000-4-4 2kv CM	pass
Surge	5.7.1.2 / -	IEC 61000-4-5 4kV LG; 2kV LL	IEC 61000-4-5 4kv LG	pass
Induced disturbances by RF fields	5.7.1.1 / -	IEC 61000-4-6 150 kHz -80 MHz; 10V; AM80% 1kHz		Pass
PF magnetic field	5.7.3 / -	IEC 61000-4-8 100 A/m continuous and 1000A/m 1s to 3s		Pass
100kHz oscillatory H-field	5.7.1.3 / -	IEC61000-4-12 2.5 kV CM; 1.25 kV DM		Pass
1MHz oscillatory H-field	5.7.1.3 / -	IEC61000-4-12 2.5 kV CM; 1.25 kV DM		Pass
100kHz oscillatory wave	5.7.1.3 / -	IEC61000-4-12 2.5 kV CM; 1.25 kV DM		Pass
1MHz oscillatory wave	5.7.1.3 / 7	IEC61000-4-12 2.5 kV CM; 1.25 kV DM		Pass

Test	IEC 61850-3 / IEEE 1613	SICOM3024P		Result
		220VDC		
		PSU	RJ45	
Induced CM voltage	5.7.3 / -	IEC 61000-4-16 50 Hz, 30 V cont., 300 V 1s	IEC 61000-4-16 50 Hz, 30 V cont., 300 V 1s	Pass
PSU variations				
Variations	6.2 / 5.1, 5.3	IEC 60870-2-1 AC: 220V DC: 220V Tolerances AC supply class ACX(+20% to -60%); Tolerances DC supply class DCX(+60% to -40%);		Pass
Earthing DC supply	6.2 / -	E+		Pass
Polarity reversal	6.2 / -	polarity reversal		Pass
Interruptions	6.4 / -	IEC 60870-2-1/IEC61000-4-11/IEC61000-4-29 Interruptions: 100ms for DC & AC supply dips AC supply class ACX 40% any cycles 70% any cycles 80% any cycles dips DC supply class DCX 40% 100ms 70% any cycles 80% any cycles		Pass
Ripple	6.5 / 5.2	VR3; <=5% Unom		pass
Emission				
Conducted	5.8 / -	CISPR22/Class A & B		Pass
Radiated	5.8 / -	CISPR22/Class A & B		Pass
Dielectric tests				
Dielectric test	- / 6.2	2 kV	0,5 kV	Pass
Impulse voltage test	- / 6.3	5 kV	-	Pass
Functional tests				
VLAN tagging	- / -	Yes		Pass
Priority tagging	- / -	Yes		Pass
Dt-Ring	- / -	Yes		Pass