

## Product Carbon Footprint Verification Statement

The inventory of Product Carbon Footprint emissions of  
**D-Link Ethernet Switch (DGS-1005D V.F1)**  
which is made by

### **Alpha Networks Inc.**

No. 8, Li-shing 7th. Rd., Science-based Industrial Park,  
Hsinchu, Taiwan, R.O.C.

has been verified meeting the requirements of

### **PAS 2050:2008**

Total GHG emissions per one D-Link Ethernet Switch  
(DGS-1005D V.F1) of  
**65.46** metric kilograms of CO<sub>2</sub>e

For the life cycle assessment of product  
**Business to Customer**

Authorized by



Dennis Yang  
Chief Operation Officer of Eastern Asia

Date: 25 November 2010

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## Statement TW10/00031PA, continued

SGS has been commissioned by Alpha Networks Inc. (hereinafter referred to as "Alpha"), No. 8, Li-shing 7th. Rd., Science-based Industrial Park, Hsinchu, Taiwan, R.O.C., for the verification the life cycle Greenhouse Gas emissions of product as provided by Alpha in accordance with

**PAS 2050:2008****Roles and responsibilities**

The management of Alpha is responsible for the organization's GHG information system, the development and maintenance of records and reporting procedures in accordance with that system, including the calculation and determination of the life cycle GHG emissions of product information and the reported life cycle GHG emissions of product.

It is SGS's responsibility to express an independent GHG verification opinion on the life cycle GHG emissions of D-Link Ethernet Switch (DGS-1005D V.F1).

SGS conducted a third party verification of the provided GHG assertion against the principles of PAS 2050:2008, ISO 14064-3: 2006, ISO 14040: 2006 and ISO 14044: 2006 in the period from 02 September 2010 to 10 September 2010. The verification was based on the verification scope, objectives and criteria as agreed between Alpha and SGS.

**Level of Assurance**

The level of assurance agreed is that of reasonable assurance.

**Scope**

Alpha has commissioned an independent verification by SGS Taiwan of reported the life cycle GHG emissions of product of Alpha arising from the manufacture of D-Link Ethernet Switch (DGS-1005D V.F1) product activities, to establish conformance with PAS 2050 principles within the scope of the verification as outlined below.

This engagement covers verification of emission from full life cycle of the product of greenhouse gases included within the organization's boundary and is based on PAS 2050:2008.

- Title or description activities: GHG verification of the life cycle GHG emissions of D-Link Ethernet Switch (DGS-1005D V.F1).
- Product Catalog Rule: there was not relevant PCR can be considered.

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- Functional unit : one of D-Link Ethernet Switch (DGS-1005D V.F1).
- System boundary : Covers a business to customer assessment of the full life cycle emissions, the system boundary be clearly defined in accordance with ISO 14040:2006 and PAS 2050:2008. All GHG's enlisted on Appendix A of PAS 2050:2008.
- Use phase : The use profile states in Taiwan.
- Retail locations : UK and Taiwan
- Data resources : The primary data collection from manufacture and own operation phase. The secondary data collection from Ecoinvent 2.2 databases.
- Life cycle assessment tool and index using :
  - Software applied SimaPro 7.2 version.
  - IPCC 2007 GWP values are applied in this inventory.
- Cut-off rules : For any impact category, if the sum of various impacts from a specific process/activity is less than 1% of the impact equivalent in that category, and the sum of total impacts is less than 3% excluded use phase.
- Allocation rules :
  - Multi-output: The allocations are based on the changes in the resource consumption and pollutant emissions following the changes in the studied system's output product, or function or economical relationship.
  - Multi-input: The allocation is based on actual relationship. For example, the manufacturing process's emissions may be affected by the change in waste flow input.
- Manufacturing locations: Alpha Networks (Dongguan) Co., Ltd., Xin'an Area, Chang An, Dongguan City, Guangdong Province, China.
- GHG emissions arising from the life cycle of product included: Sources as presented in the inventory spreadsheet provided by Alpha.
- Types of GHGs included: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, Substances controlled by the Montreal Protocol, HFCs, PFCs, Fluorinated ethers, Perfluoropolyethers, Hydrocarbons compounds.
- Directed actions: There is not GHG emissions offsetting be used at any point in the life cycle of the product.
- GHG information for the following production period was verified: 01 April 2010 to 31 July 2010, emissions covered the particular period.
- Intended user of the verification statement: Private

**Objective**

The purposes of this verification exercise are, by review of objective evidence, to independently review:

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- Whether the life cycle GHG emissions of product are as declared by the organization's GHG assertion
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

**Criteria**

Criteria against which the verification assessment is undertaken are the principles of PAS 2050:2008.

The IPCC 2007 AR4 GWP values are applied in this assessment of life cycle GHG emissions for the product.

**Materiality**

The materiality required of the verification was considered by SGS to 5%, based on the needs of the intended user of the GHG Assertion.

**Conclusion**

Alpha provided the GHG assertion based on the requirements of PAS 2050:2008. The life cycle GHG information of product for the production period from 01 April 2010 to 31 July 2010 disclosing emissions of 65.46 metric kilograms of CO<sub>2</sub> equivalent, excluded use phase emissions of 20.84 metric kilograms of CO<sub>2</sub> equivalent are verified by SGS to a reasonable level of assurance, consistent with the agreed verification scope, objectives and criteria.

The life cycle GHG emissions of product are described as below:

- R&D phase emissions of 6.46 metric kilograms of CO<sub>2</sub>e
- Material phase emissions of 13.83 metric kilograms of CO<sub>2</sub>e
- Manufacture phase emissions of 0.54 metric kilograms of CO<sub>2</sub>e
- Distribution phase emissions of 0.03 metric kilograms of CO<sub>2</sub>e
- Use phase emissions of 44.62 metric kilograms of CO<sub>2</sub>e
- Disposal phase emissions of 0.00 metric kilograms of CO<sub>2</sub>

SGS's approach is risk-based, drawing on an understanding of the risks associated with reporting the life cycle GHG emissions of product information and the controls in place to mitigate these. Our examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the organization's reported the life cycle GHG emissions of product.

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We planned and performed our work to obtain the information, explanations and evidence that we considered necessary to provide a reasonable level of assurance that the life cycle GHG emissions of D-Link Ethernet Switch (DGS-1005D V.F1) are fairly stated.

We conducted our verification with regard to the GHG assertion of Alpha which included assessment of GHG information system, monitoring and reporting plan/protocol. This assessment included the collection of evidence supporting the reported data, and checking whether the provisions of the protocol reference, were consistently and appropriately applied

In SGS's opinion the presented GHG assertion

- is materially correct and is a fair representation of the GHG data and information, and
- is prepared in accordance with PAS 2050:2008 on GHG quantification, monitoring and reporting.

This statement shall be interpreted with the GHG assertion of Alpha as a whole, this result shall be valid for a maximum period of two years, where there is a change described under PAS 2050:2008 clause 7.5 to the life cycle of the product, GHG emission shall be re-assessed.

Note: This Statement is issued, on behalf of Client, by SGS Taiwan Ltd. ("SGS") under its General Conditions for Green Gas Verification Services available at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). The findings recorded hereon are based upon an audit performed by SGS. A full copy of this statement, the findings and the supporting GHG Assertion may be consulted at Alpha Networks Inc., No. 8 Li-shing 7th. Rd., Science-based Industrial Park, Hsinchu, Taiwan, R.O.C. This Statement does not relieve Client from compliance with any bylaws, federal, national or regional acts and regulations or with any guidelines issued pursuant to such regulations. Stipulations to the contrary are not binding on SGS and SGS shall have no responsibility vis-à-vis parties other than its Client.