

## Selector Guide for Power over Ethernet Products from

### **SILVER TELECOM**

This document provides a brief feature guide to Silver Telecom's range of Power over Ethernet products. These components are used in Terminal Equipment, which derives operating power from Local Area Network supplies.

The information in this document is a guide. Complete electrical and mechanical data is contained in the relevant product's datasheet. Up-to-date versions of all datasheets and application notes are available from the company website. See [www.silvertel.com](http://www.silvertel.com) for further details.



## Low Cost PoE Extraction Modules

PD Module Feature	Ag8000 Series			Ag8100 Series (high efficiency)			Ag8200 Series (high efficiency)		
	Ag8012	Ag8005	Ag8003	Ag8112	Ag8105	Ag8103	Ag8212	Ag8205	Ag8203
Package options	SIL or DIL	SIL or DIL	SIL or DIL	SMT	SMT	SMT	SIL or DIL	SIL or DIL	SIL or DIL
Compliant to IEEE 802.3af Standard	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes <sup>1</sup>
Provides PoE Signature to PSE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Class programming capability	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DC output voltage to the Terminal Equipment (typical)	12.0V	5.0V	3.3V	12.0V	5.0V	3.3V	12.0V	5.0V	3.3V
Output voltage adjustable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Range of DC output voltage adjustment	7.5V Min to 13.0V Max	4.5V Min to 7.5V Max	2.5V Min to 4.5V Max	7.5V Min to 14.0V Max	4.5V Min to 7.5V Max	2.5V Min to 4.5V Max	7.5V Min to 14.0V Max	4.5V Min to 7.5V Max	2.5V Min to 4.5V Max
Maximum power available to the Terminal Equipment	12W	6W	5W	12W	7W	5.25W	12W	9W	6.6W
Module provides 1500V isolation barrier	No <sup>1</sup>	No <sup>1</sup>	No <sup>1</sup>	No <sup>1</sup>	No <sup>1</sup>	No <sup>1</sup>	No <sup>1</sup>	No <sup>1</sup>	No <sup>1</sup>
Overload and short-circuit protection on-board	Yes	Yes	Yes	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes <sup>3</sup>
Bridge rectifiers fitted on module	Yes	Yes	Yes	No <sup>2</sup>	No <sup>2</sup>	No <sup>2</sup>	No <sup>2</sup>	No <sup>2</sup>	No <sup>2</sup>
Number of additional components required	One <sup>4</sup>	One <sup>4</sup>	One <sup>4</sup>	Three <sup>5</sup>	Three <sup>5</sup>	Three <sup>5</sup>	Three <sup>5</sup>	Three <sup>5</sup>	Three <sup>5</sup>

Note 1: If full compliance to IEEE 802.3af is required, designers of Terminal Equipment using Ag8000, Ag8100 and Ag8200 Series components have to ensure that their hardware achieves the required 1500V isolation by the use of non-conductive casing and has no user accessible external connections.

Note 2: Externally fitted, low cost, bridge rectifiers are required with the Ag8100 and Ag8200 Series to ensure that the polarity of the 48V input voltage to the PD equipment is correct.

Note 3: The Ag8100 and Ag8200 series devices require a low cost, over-voltage clamping device to limit any ESD voltage to 80V. E.g. SMAJ58 at 10 cents each.

Note 4: A low cost smoothing capacitor is to be fitted across the output. See Datasheet for details.

Note 5: Along with a capacitor, as in note 1, two bridge rectifiers are required. See Datasheet for details.

## Isolated PoE Extraction Modules

PD Module Feature	Ag9000 Series			Ag9200 Series (High Efficiency)		Ag9400 Series (Low Cost)		
	Ag9120S	Ag9050S	A9033S	Ag9205	Ag9203	Ag9412S	Ag9405S	A9403S
Package options	SIL	SIL	SIL	SIL	SIL	SIL	SIL	SIL
Compliant to IEEE 802.3af Standard	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Provides PoE Signature to PSE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Class programming capability	Yes	Yes	Yes	Yes	Yes	Class 0	Class 0	Class 0
DC output voltage to the Terminal Equipment (typical)	12.0V	5.0V	3.3V	5.0V	3.3V	12.0V	5.0V	3.3V
Output voltage adjustable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Range of DC output voltage adjustment	9.0V min to 13.15V max	4.5V min to 5.5V max	3.1V min to 4.70V max	4.2V min To 6.0V max	3.0V min To 3.5V max	11.5V min to 12.5 V max	4.75V min to 5.25V max	3.1V min to 3.5V max
Maximum power available to the Terminal Equipment	12W	9W	6W	13W	10W	12W	10W	6.6W
Module provides 1500V isolation barrier	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Overload and short-circuit protection on-board	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bridge rectifiers fitted on module	Yes	Yes	Yes	No	No	No	No	No
Number of additional components required to complete PD Module	One <sup>1</sup>	One <sup>1</sup>	One <sup>1</sup>	Three <sup>2</sup>	Three <sup>2</sup>	One <sup>3</sup>	One <sup>3</sup>	One <sup>3</sup>

Note 1: A low cost smoothing capacitor is to be fitted across the output of the Ag9000 Series parts. It should be 470 microfarads minimum and 16 volt rating.

Note 2: Along with a capacitor, as in note 1, two bridge rectifiers are required.

Note 3: Only a low cost smoothing capacitor, as in note 1, is required for Ag94xx-2BR but Ag94xx-S requires the capacitor and two bridge rectifiers as note 2.

## Isolated PoE Extraction Modules Including DC and AC Input

PD Module Feature	Ag9300 Series
	Ag9312S
Package options	DIL
DC input voltage	12Vdc to 48Vdc
AC input voltage	18Vac to 30Vac
Compliant to IEEE 802.3af Standard	Yes
Provides PoE Signature to PSE	Yes
Class programming capability	Yes
DC output voltage to the Terminal Equipment (typical)	12.0V
Output voltage adjustable	Yes
Range of DC output voltage adjustment	8.8V to 13.4V
Maximum power available to the Terminal Equipment	12W
Module provides 1500V isolation barrier	Yes
Overload and short-circuit protection on-board	Yes
Bridge rectifiers fitted on module	No
Number of additional components required to complete PD Module	Five <sup>1</sup>

Note 1: Low cost bridge rectifiers and smoothing capacitors is to be fitted, see datasheet for details.

## Isolated PoE + Extraction Modules

PD Module Feature	Ag5000 Series
	Ag5000
Package options	DIL
Compliant to IEEE 802.3af Standard	Yes <sup>1</sup>
Provides PoE Signature to PSE	Yes
Class programming capability	Yes
DC output voltage to the Terminal Equipment (typical)	12.0V or 24.0V
Output voltage adjustable	Yes
Range of DC output voltage adjustment (Parallel)	9V to 14.5V
Range of DC output voltage adjustment (Series)	18V to 29V
Maximum power available to the Terminal Equipment	30W
Module provides 1500V isolation barrier	Yes
Overload and short-circuit protection on-board	Yes
Bridge rectifiers fitted on module	No
Number of additional components required to complete PD Module	Five <sup>2</sup>

Note 1: This is a dual IEEE 802.3af but will accept high power PoE on data pair or spare pair or both.

Note 2: Low cost bridge rectifiers and smoothing capacitors are to be fitted, see datasheet for details.