

# Power Consumption on Polycom® Phones

This engineering advisory shows detailed information about the power consumption of the Polycom SoundPoint® IP, SoundStation® IP, SoundStation Duo™, VVX®, and Polycom CX phones.

This engineering advisory applies to:

- SoundPoint IP, SoundStation IP, and VVX 1500 phones running Polycom UC Software 3.3.0 or later.
- SoundStation Duo phones running UC Software 4.0.0 or later.
- VVX 500 phones running UC Software 4.0.1 or later.
- Polycom CX 500, 600, 700, and 3000 phones.

## Power Dissipation

Testing of the Polycom phones reveals the power consumption data shown in [Table 1: Power Dissipation and Advertisement – Polycom Phones](#).



### Note: When CDP Advertisement Displayed

Only Polycom phones running UC Software 3.3.0 or later will display the CDP Advertisement shown in [Table 1](#).

**Table 1: Power Dissipation and Advertisement – Polycom Phones**

<i>Phone Model</i>	<i>Idle State (minimum power)</i>	<i>Call State (nominal handsfree volume)</i>	<i>Maximum Power</i>	<i>Class Advertisement<sup>1</sup> (IEEE 802.3af)</i>	<i>CDP Advertisement<sup>4</sup></i>
SoundPoint IP					
IP 321	2.1W	2.5W	3.4W	1	3.5
IP 331	2.3W	3.0W	3.7W	1	3.7
IP 335	2.4W	3.3W	4.3W	2	3.9
IP 450	2.2W	3.8W	5.3W	2	5.4



<i>Phone Model</i>	<i>Idle State (minimum power)</i>	<i>Call State (nominal handsfree volume)</i>	<i>Maximum Power</i>	<i>Class Advertisement<sup>1</sup> (IEEE 802.3af)</i>	<i>CDP Advertisement<sup>4</sup></i>
IP 550	2.3W	3.9W	5.6W	0	5.9
IP 560	4.1W	7.3W	8.0W	0	8.3
IP 650	3.5W	4.6W	6.5W	0	6.5, 12.0 <sup>4</sup>
IP 650 Expansion Module (Backlit)	1.4W	n/a	2.0W	0 <sup>3</sup>	<sup>3</sup>
IP 670	4.2W	7.4W	8.4W	0	8.4, 14.0 <sup>4</sup>
IP 670 Expansion Module (Color Backlit) <sup>5</sup>	1.5W	n/a	2.0W	0 <sup>3</sup>	3
<b>SoundStation IP</b>					
IP 5000	3.7W	4.3W	6.0W	2	5.8
IP 6000	4.1W	5.0W	7.0W	0	9.8
IP 7000	4.6W	6.1W	9.9W	0	9.8
Duo	3.0W	4.5W	7.0W	0	7.0
<b>VVX</b>					
VVX 500	2.4W	4.2W	5.0W	4 <sup>2</sup>	8.0
VVX 1500	6.5W	9.4W	10.5W	0	11.8
<b>Polycom CX</b>					
500	2.0W	3.3W	4.3W	2	
600	2.4W	4.5W	4.9W	2	
700	3.1W	4.7W	5.2W		
3000	2.3W	3.3W	5.5W	3	

<sup>1</sup> See [Table 2: PD Power Classification \(IEEE 802.3af\)](#).

<sup>2</sup> VVX500 advertizes as Class 4, in conformance with IEEE802.3at specification (backwards compatible with IEEE802.3af)

- 3 Class/CDP advertised through Host Phone (no native PoE on-board).
- 4 CDP values are reflected for SoundPoint IP phones running SIP 3.1.0. 'EM Power' can be disabled through the phone's menu; this would lower the advertised power in CDP. The higher values reflect 'EM enabled' CDP advertisement (default).
- 5 It is recommended that users use a power supply adapter with the SoundPoint IP 670 when more than one color Expansion Module is attached to the phone.

## PD Power Classification

PD power classification is shown in [Table 2: PD Power Classification \(IEEE 802.3af\)](#). This defines the maximum power levels available at the PD (phone).

**Table 2: PD Power Classification (IEEE 802.3af)**

<i>Class</i>	<i>Usage</i>	<i>Max Power Range used by the PD (phone)</i>
0	Default	0.44 to 12.95W
1	Optional	0.44 to 3.84W
2	Optional	3.84 to 6.49W
3	Optional	6.49 to 12.95W
4	Optional	Reserved for future use (for example: IEEE802.3at)

PSE power classification is shown in [Table 3: PSE Power Classification \(IEEE 802.3af\)](#). This defines the minimum power levels available at the PSE (PoE switch).

**Table 3: PSE Power Classification (IEEE 802.3af)**

<i>Class</i>	<i>Usage</i>	<i>Minimum power levels at output of PSE</i>
0	Default	15.4 Watts
1	Optional	4.0 Watts
2	Optional	7.0 Watts
3	Optional	15.4 Watts

<i>Class</i>	<i>Usage</i>	<i>Minimum power levels at output of PSE</i>
4	Reserved	Reserved for future use (for example: IEEE802.3at)

This is the minimum power at the PSE PI.

The deltas in power level between Tables 2 and 3 provision for voltage and current losses in cabling lengths of up to 100m (330ft) that may be encountered in enterprise installations.

## Test Condition Terminology

The following test condition terminology was used in [Table 1](#).

- Idle State
  - The phone has completed the boot-up process.
  - Ethernet speed at 10/100 Mb/s on LAN port; PC port not connected
  - The idle screen is shown on the LCD.
  - The LCD Backlight (where applicable) was set to default minimum (sleep mode) brightness.
  - There was no call state established.
- Call State
  - Both LAN and PC ports running at max capable data rates.
  - The handsfree transducer was activated for each UUT and was set to default nominal volume.
  - Normal call established in handsfree mode.
  - The LCD backlight set to default maximum brightness.
- Maximum Power
  - All ports and peripherals running at maximum data rates
  - Maximum volume on handsfree transducer, running codec stress tests with select wav files
  - LCD backlight and line LEDs at maximum brightness
- Class Advertisement
  - The Power over Ethernet class advertisement circuitry on-board SoundPoint IP, SoundStation IP and VVX phones
- CDP Advertisement
  - The power requirements for CDP reported by SoundPoint IP, SoundStation IP, and VVX phones running minimum release of SIP 3.1.0 and BootROM 4.1.2.



- Power consumption measured using Power over Ethernet IEEE802.3af standard powering
  - The measurements were taken as average from six IEEE802.3af compliant PoE switches.
  - The power consumption using AC/DC Adapters is similar to above, but must account for approximately 72% efficiency rating from AC source.
  - Power consumption does not include power sourcing to external USB devices (SoundPoint IP 670, VVX500 and VVX-1500 models)
- Power consumption measured at the SoundPoint IP and SoundStation IP phone end
  - 7ft maximum length LAN cord to PoE switch during measurement
  - 2.45W maximum power loss allowable over 100m (330ft) cable lengths

## Trademarks

©2011, Polycom, Inc. All rights reserved.

POLYCOM®, the Polycom "Triangles" logo and the names and marks associated with Polycom's products are trademarks and/or service marks of Polycom, Inc. and are registered and/or common law marks in the United States and various other countries. All other trademarks are property of their respective owners. No portion hereof may be reproduced or transmitted in any form or by any means, for any purpose other than the recipient's personal use, without the express written permission of Polycom.

## Disclaimer

While Polycom uses reasonable efforts to include accurate and up-to-date information in this document, Polycom makes no warranties or representations as to its accuracy. Polycom assumes no liability or responsibility for any typographical or other errors or omissions in the content of this document.

## Limitation of Liability

Polycom and/or its respective suppliers make no representations about the suitability of the information contained in this document for any purpose. Information is provided "as is" without warranty of any kind and is subject to change without notice. The entire risk arising out of its use remains with the recipient. In no event shall Polycom and/or its respective suppliers be liable for any direct, consequential, incidental, special, punitive or other damages whatsoever (including without limitation, damages for loss of business profits, business interruption, or loss of business information), even if Polycom has been advised of the possibility of such damages.

## Customer Feedback

We are constantly working to improve the quality of our documentation, and we would appreciate your feedback. Please send email to [VoiceDocumentationFeedback@polycom.com](mailto:VoiceDocumentationFeedback@polycom.com).



Visit [support.polycom.com](http://support.polycom.com) for software downloads, product document, product licenses, troubleshooting tips, service requests, and more.