

The Ag1170 on-board DC/DC converter can be powered down to reduce the operating supply current when the system is in idle mode. This can be done with a transistor as shown in AN1170-12 or with a diode as shown in Figure 1.

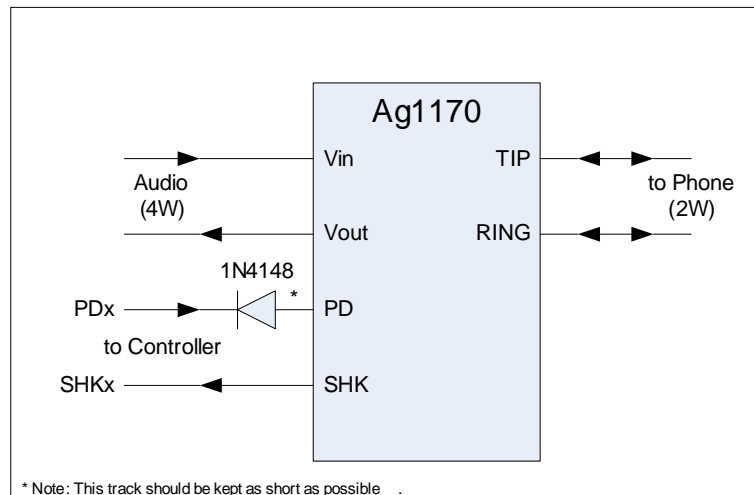


Figure 1: Ag1170 power down circuit using a diode

Idle or Stand-by mode is when the phone connected to TIP – RING is On-Hook. In this state the Ag1170 DC/DC converter can be powered down to conserve power.

However the DC/DC converter must be switched on for the SHK output to detect when the phone goes Off-Hook. So the PDx output from the controller must be driven high periodically to allow the Ag1170 to power up and the SHK output to be tested.

The SHK output does go high for approximately 25ms on power up so the controller must allow at least this length of time before testing the status of the SHK output.

If the SHK is low then the phone is still On-Hook and the PDx output can be taken low again, putting the Ag1170 back into power down mode.

If the SHK output is high then the phone is now Off-Hook and the PDx output must remain high. The SHK output should be monitored and when it goes low again the PDx output can be set low and the controller can return back into its idle cycle (be careful to allow enough time to handle pulse dialling).

Figure 2 shows how the PDx output should be set and the SHKx response with the phone On-Hook and Off-Hook.

Ideally the Off time should not be longer than 1 second, as the phone response will be delayed until the PDx is set high.

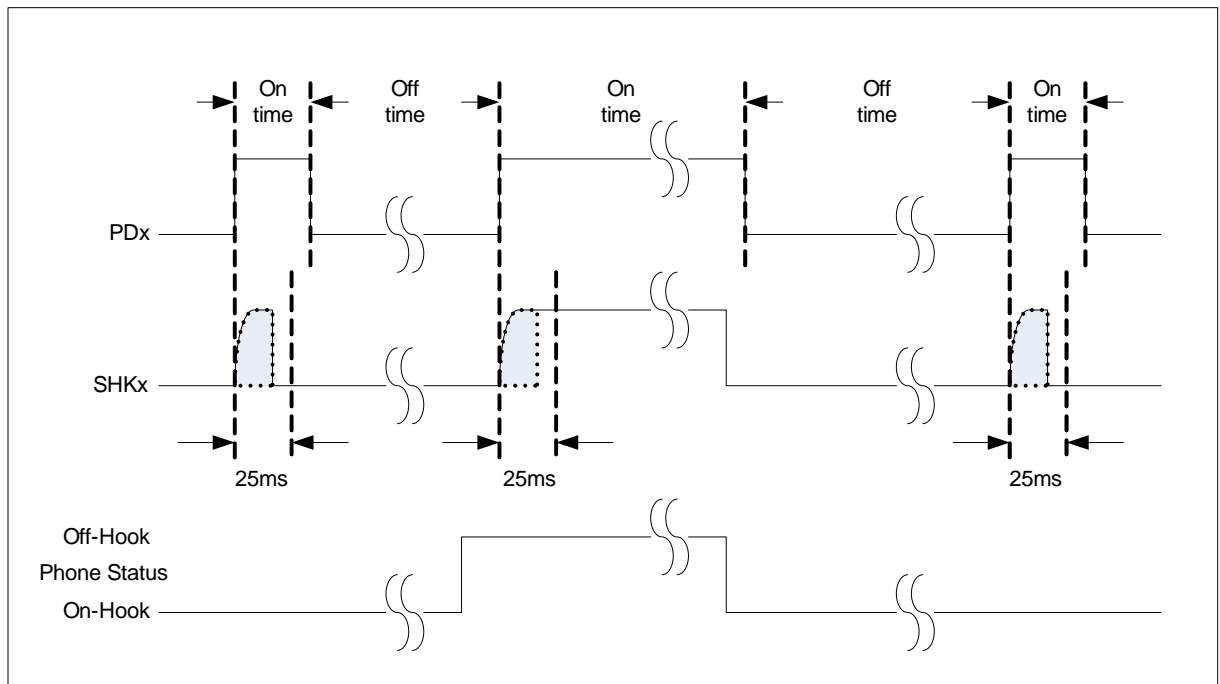


Figure 2: PDx and SHKx timing

If the controller has limited capability to continuously poll the PD input, then an alternative hardware solution is shown in AN1170-29.

In a system that has multiple channels the PDx outputs from the controller should be offset to spread the power supply load evenly.