

Description

HomePNA gets more and more popular in home networking market because of its using current telephone line (easy install) and enjoying 10 times more throughput than traditional modem. The character of HomePNA is that the data download from ISP will be much more than upload, and it always being requested the reliability of mass data download.

HomePNA converter is designed for the media conversion (Ethernet cabling to telephone cabling) and/or speed conversion (100 to 10 or 10 to 1). Because the transmission speed might be unbalanced and also the traffic, so the two port bridge which used in this converter should have a special mechanism to make sure the transmission quality.

The TC6102 which uses 1 Mbyte (two 256K X 16) EDODRAM can provide 512 packet buffers to store more incoming data for increasing download performance, and a special back_pressure (flow control) algorithm to prevent from packet loss which can provide the best reliability for download data integrity. More than that, in your hardware design, you can share the same clock (25MHz) with the 100M Phy (for 100/10 media converter only; if it used in the 1/10 converter, the clock should be 2.5M Hz) to lower the material cost and minimize the EMI issue. And its 100 pin QFP package makes your PCBA as small as possible. The HomePNA application of TC6102 has been site approved in USA & Korean market, it is the best cost/performance solution which you will have interests.

Application note

Regarding the application of TC6102 on HPNA, please note these points below:

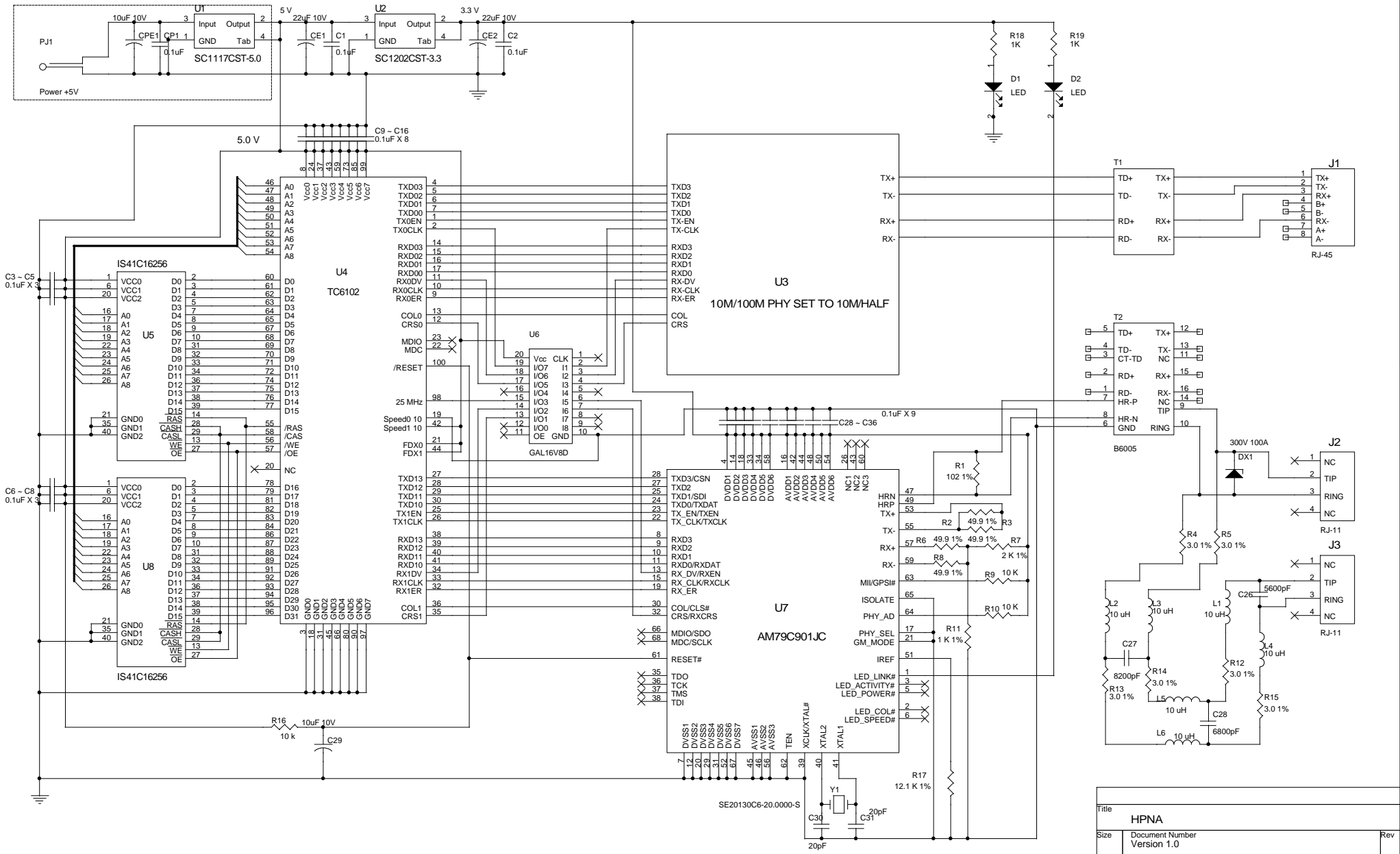
1. Down the clock to 2.5MHz .
2. Set speed to 100Mb/s at 10M side, 10Mb/s at 1M side.
3. Set Duplex of both side to half duplex.
4. Keep MDC and MDIO pin to open.
5. If the CRS of PHY drop before RX_DV of PHY, you will need OR gate (like 74HCT32) ORed CRS and RX_DV or GAL gate (described on the circuit) to produce CRS of TC6102

A

B
GAL16V8 Note:

I/O7=I1, I/O6=I2, I/O5=I2#3, I/O3=I1, I/O2=I5, I/O1=I5#6

If the CRS and RX-DV of U2 10M/100M PHY signals drop at the same time then you can tie CRS of U2 to CRS0 of TC6102 and tie RX-DV of U2 to RX0DV of TC6102 directly



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Title	HPNA	
Size	Document Number	Rev
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Date:	Friday, June 02, 2000	Sheet 1 of 1