



### General Description

Software can determine the port link status using registers internal to the KS8995M.

There are two scenarios to consider. The first is where auto-negotiation (AN) is successful, and the second is where auto-negotiation is disabled or fails.

The software reads bit 6 in register 0x1E (for port 1) to determine if auto-negotiation is completed or not.

#### Scenario 1: Auto-Negotiation Successful

If Auto-Negotiation (AN) is successfully completed, the user's software is able to read register 0x1E (for port 1) to determine the link status. This applies to the other ports as well. The auto-negotiation algorithm links to the highest capability possible for the link partner by design.

#### Scenario 2: Auto-Negotiation is Disabled or Fails

Failed or disabled auto-negotiation includes instances where the link partner or the KS8995M is placed in forced mode. In this case, the link status cannot be determined from the registers in the KS8995M. The user can implement status registers in an FPGA by reading the LED signals into a register and then polling these registers in the FPGA with the CPU.

### Conclusion

Using these scenarios, the CPU connected to the KS8995M can determine the link status of a successfully auto-negotiated port.

If the port is placed in a forced mode, the CPU reads internal registers to determine what state the port is forced to. This information is useful to the CPU if there is a network disruption or a link failure.

If auto-negotiation is not successful, the system designer needs to use external logic to read the LED signals into a register for determining the link status of a port.

Please contact your local Micrel FAE or salesperson if you have any questions.

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