

# Intel<sup>®</sup> Ethernet Controller I225

Specification Update, Revision 1.0

---

Intel Corporation

*March 2020*



## Revision History

---

Revision	Date	Comments
1.0	March 27 <sup>th</sup> , 2020	Initial Release

# 1. Introduction

---

This document applies to the Intel® Ethernet Controller I225. It covers product level details, and an erratum related to IEEE behavior in 2.5Gbps mode.

## 1.1 Product Code and Device Identification

**Product Codes:** I225.

The following tables and drawings describe the various identifying markings on each device package:

**Table 1-1 I225 Part Identification Summary**

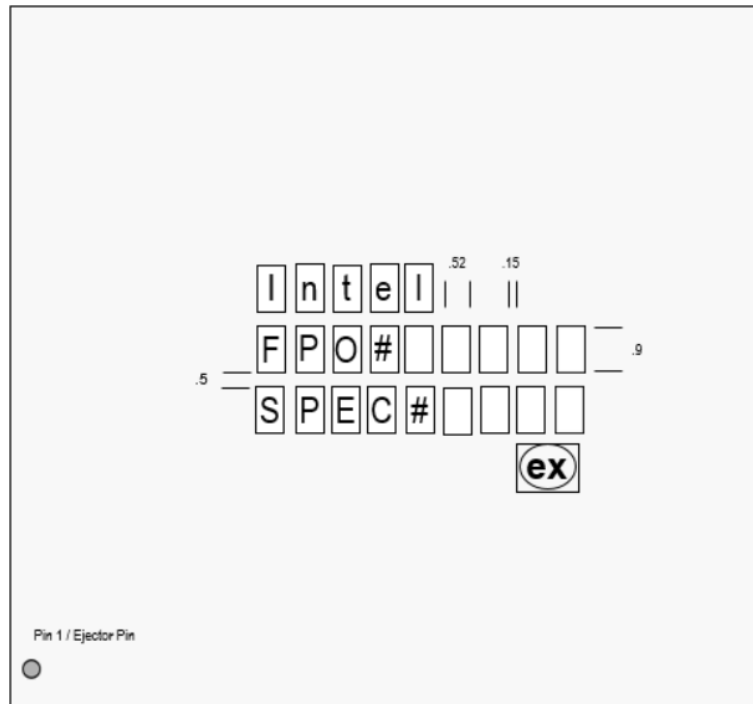
Part #	Version	Intel MM #	Spec Code	Type	Network Driver Branding String
I225-LM	V1	999JW1	SLN9B	T&R	Intel(R) Ethernet Controller I225-LM
I225-LM	V1	999JW0	SLN9A	Tray	Intel(R) Ethernet Controller I225-LM
I225-V	V1	999JW7	SLN9D	T&R	Intel(R) Ethernet Controller I225-V
I225-V	V1	999JW5	SLN9C	Tray	Intel(R) Ethernet Controller I225-V
I225-LM	V2	99A1TL	SLNJW	T&R	Intel(R) Ethernet Controller (2) I225-LM
I225-LM	V2	99A1T7	SLNJV	Tray	Intel(R) Ethernet Controller (2) I225-LM
I225-V	V2	99A1VF	SLNJV	T&R	Intel(R) Ethernet Controller (2) I225-V
I225-V	V2	99A1V1	SLNJV	Tray	Intel(R) Ethernet Controller (2) I225-V

Figure 1-1 shows a snapshot of the I225 device:



**Figure 1-1 Snapshot of I225**

## 1.2 Marking Diagrams



**Figure 1-2 I225 Marking Pattern**

### Notes:

- LINE1: Logo - Intel Swirl Logo
- LINE2: FPO# - Assembly lot marking, 8 characters
- LINE3: Spec#
- LINE4: e# - Pb-free symbol
- LINES OF TEXT ARE CENTERED ON THE PACKAGE AND LEFT JUSTIFIED
- Zero should have a slash "/" in the middle.



- Pb- free symbols



## 2. Erratum

### 2.1 I225 v1 Minimum Supported Receive Inter-Packet Gap (IPG) is 8 bytes instead of 5 bytes

#### Problem Summary:

The minimum received inter packet gap (IPG) in the GMII interface between the PHY and the MAC is 8 bytes. This minimum gap is specified through 1Gbps operation. For a controller to operate at 2.5Gbps, the IEEE standard requires that the MAC be able to tolerate a minimum IPG of 5 bytes.

The I225 v1 silicon supports an IPG down to 8 bytes, but not down to 5 bytes in 2.5Gbps operation.

#### Implications:

Packets received by the I225 v1 product link partner (the switch, router, or back-to-back controller it is connected to) that are received with a smaller IPG than 8 bytes on the MAC/PHY interface are dropped. When this occurs, the network connectivity is reduced from 2.5Gbps to below 1Gbps operation. In some scenarios with certain link partners, the operation can be as low as 1-10Mbps.

#### Workaround:

The impact of this IPG issue can be mitigated when connected through a switch/router by setting the link speed in the driver (Windows or Linux) to 1Gbps operation to enable a 1Gbps line rate.

Also, the latest Windows drivers and I225 firmware available for download (driver version 1.0.0.30 or later NVM version 1.38 or later) can detect when the IPG packet drops occur and will automatically reset the link speed to 1Gbps. Please see downloads here:

<https://downloadcenter.intel.com/product/184686/intel-ethernet-controller-i225-series>

#### Known Compatible 2.5Gbps Link Partners:

Below is a list of link partners with which Intel has tested I225 v1 to enable 2.5Gbps operation.

<b>Brand*</b>	<b>2.5Gbps Router/Switch or Controller Model(s)</b>
<b>Aruba</b>	2930m, 3810m (Switches)
<b>Asus</b>	Rapture GT-AX11000 (Router)
<b>Buffalo</b>	BS-MP2012, BS-MP2008 (Switches)
<b>Cisco</b>	Catalyst 3850-24XU & 9300-24X UPOE (Switches)
<b>D-Link</b>	DMS-1100-10TP (Switches)
<b>Huawei</b>	S6720-32C-SI (Switches)
<b>Netgear</b>	Nighthawk AX12/RAX120 (Router)
<b>Trendnet</b>	TEG-7080ES, TEG-30102WS (Switches)

#### Status:

Intel has resolved this issue with I225 v2, which is now in production.



## LEGAL

---

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

This document contains information on products, services and/or processes in development. All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest forecast, schedule, specifications and roadmaps.

The products and services described might contain defects or errors which might cause deviations from published specifications. No product or component can be absolutely secure.

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information visit [www.intel.com/benchmarks](http://www.intel.com/benchmarks).

Copies of documents which have an order number and are referenced in this document might be obtained by calling 1-800-548-4725 or by visiting [www.intel.com/design/literature.htm](http://www.intel.com/design/literature.htm).

Intel and the Intel logo are trademarks of Intel Corporation in the U.S. and/or other countries.

\* Other names and brands might be claimed as the property of others.

© Intel Corporation.