Inbound Supply Chain Shipping Label and Traceability Requirements for Cisco Suppliers

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Abstract

This specification establishes Cisco System's minimum Shipping Label content requirements to enable component traceability on Cisco's inbound supply chain. This specification applies to Over-packs, Shipping boxes, Inner Box Labels and any label attached to any Tape & Reel, Bag, Dry Pack Bag.

Revision History

Rev	Date	Author	Comments
A0	Mar 6, 2003	K.N. Balasubramanian	Initial Release
A1	Aug 19, 2003	K.N. Balasubramanian	Tier 1, 2 and 3 defined
A2	Oct 15, 2003	K.N. Balasubramanian	Supplier classification to support traceability added
A3	Nov 1, 2003	K.N. Balasubramanian	Note on Country of Origin added
A4	Dec 12, 2004	K.N. Balasubramanian	Tier 1, 2 and 3 dropped
B0	July 15, 2009	Dave Wooldridge	Total rewrite to define and clarify requirements across commodity types,
B1	May 4, 2010	Jon Glommen	• Clarified definition of "supplier" in 3.51 • Updated date code format, Section 7.2 • PO number removed from UPP label, section 7.8.7 • Updated all data identifier tables • Clarify UPP definition for tubes, section 3.2 • Updated all label graphics throughout
C0	TBD, 2014	Amy Story, Jason Stuck and Venky Thirunavukkarasu	• Modified document name from "Cisco Component Supplier Shipping Label Format, Contents and Traceability Requirements" to "Inbound Supply

			Chain Shipping Label and Traceability Requirements for Cisco Suppliers" • Rewritten to simplify use of document. • Consolidated a majority of Traceability requirements into a single section. • Clarified that shipping label requirements apply to all inbound shipments, replacing the "Exempt" language in prior version. • Added guidance on traceability requirements when date code / lot code is not required, including class codes that may require unique serialization, in Appendix A. • Traceability requirements shall be specified within supplier Quality Management Systems, Section 4.3. • Standardized Date Code format, Section 4.7. • Removed requirement that Quantity must be split by Traceability Code within single field, Section 4.12.5. • Moved major tables into Appendix, flow improved flow of reading the document. • Updated Class Code list, Appendix A & B. • Replaced "mixed load" label with more generic Over Pack label, in Section 9. • Added the ability to signal warehouse personnel that shipping box contains inner cartons suitable for short hauls, Section 5.2.2.3. • Use labels to signal warehouse personnel which boxes cannot be opened, Section 8.4. • Replace the 5S, 4S, 3S terminology with Over-Pack, Shipping Box, and Inner Cartons. • Update Label samples pictures to reflect requirement changes in this document and Country of Origin label requirement changes. • Additional minor changes to update specification to current practices
C1	Oct 2014	AnuDeep Chahal	• Added scope of the document • Added the serialized components' traceability section • Updated the reference sections • Modified the requirements for programmable parts
C2	Dec 2014-Feb 2015	AnuDeep Chahal	• Implemented the review comments • Updated the table in Appendix A

C3	March 10, 2020	Rana Kassis	• Modified the barcode requirements to include the addition of 2D barcode data element to existing labels • Updated label samples to show the minimum requirements • Updated Appendix C - Programmable Parts to include the word “Raw” to the MPN and CPN” on supplier labels • Updated traceability requirements for newly created class codes 300, 301,302,303,304, and 305 in appendix A
C4	Oct 28, 2020	Rana Kassis	• Modified Country of Origin label requirements to be required in 1D and 2D formats • Clarified Shipping label requirements for the Programmed parts and added a sample label • Updated the Shipping label requirements table to add the data identifier “Q” for Qty • Clarified 2D barcode requirements and added an example
C5	Sep 26,2022	Rana Kassis	• Updated Date Code and Traceability information in appendix A for class codes 10 and 341 • Update Country of Origin requirement Per China's new compliance requirement

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1. Purpose

This specification includes label requirements for two programs within Cisco's inbound supply chain: 1) the package labels for inbound logistics and 2) the component traceability program.

1.1 Package Labels for Inbound Logistics

Establish requirements for package and shipping labels used in Cisco's inbound supply chain. This includes all shipments of component, and sub-assembly products shipping from suppliers to Hubs or Manufacturing Partners.

1.2 Component Traceability Program

Define requirements for a component traceability program to ensure that component origin information from the component supply base reaches Cisco and Cisco's Electronic Manufacturing Service (EMS) partners. The component traceability program will help with the following items:

1.2.1 Improve failure reporting from both manufacturing (DPPM) and field service or repair.

1.2.2 Reduce risk of exposure for Cisco and Cisco's Suppliers in the event of component quality or compliance issue.

1.2.3 Improve the ability to perform inventory control processes.

A. Tracking deviation and/or wavier material throughout the manufacturing process and into the field.
B. Positive ability to ensure that material identified for a "Hold" is not on the manufacturing floor or in shipped Cisco products.
C. Tracking of component replacement efforts.
D. Positive assurance that a component purge has been executed and material disposition completed as directed.
E. Enhance the ability to perform field replacement of problem components by precisely identifying the effected Cisco products.

1.2.4 Include traceability in quality management system

A. Forward traceability
B. Reverse traceability

2. Scope

2.1 The requirements in this document applies to all serialized and non-serialized components being shipped from supplier sites to any of Cisco's Hubs or EMS partners

2.2 The document defines the specifications of the shipping and packaging labels

2.3 The document does not cover the labels that are placed on the serialized modules and assemblies, including the engraved device markings.

2.4 The document does not include OEM/ODM products and suppliers of these products

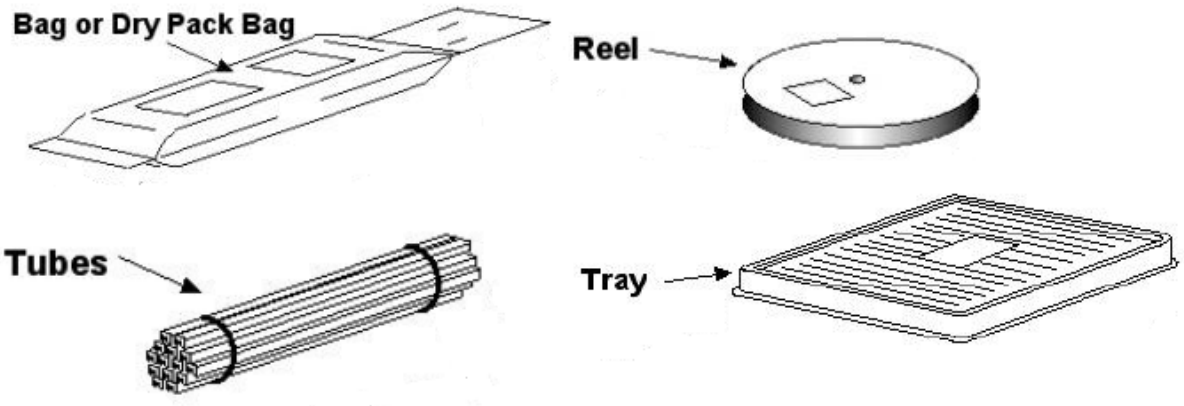
3. Levels of Packaging Labels

This specification does not apply to individual component marking or labels. This specification establishes requirements for the following package labels:

3.1 Unit Product Package Labels

Unit Product Package labels are affixed to component product including bags, tape and reel, trays, and tubes. If product is inside a moisture barrier bag, the UPP label can be on the moisture barrier bag.

Packages that require a Unit Product Package Label:



3.2 Shipping Box Labels

Shipping Box Labels are affixed to boxes containing the component product directly. These boxes directly contain bags, tape and reel, trays or tubes. Boxes containing component product directly can be inner cartons or boxes that are designed for shipping.

Inner cartons are boxes that directly contain product.

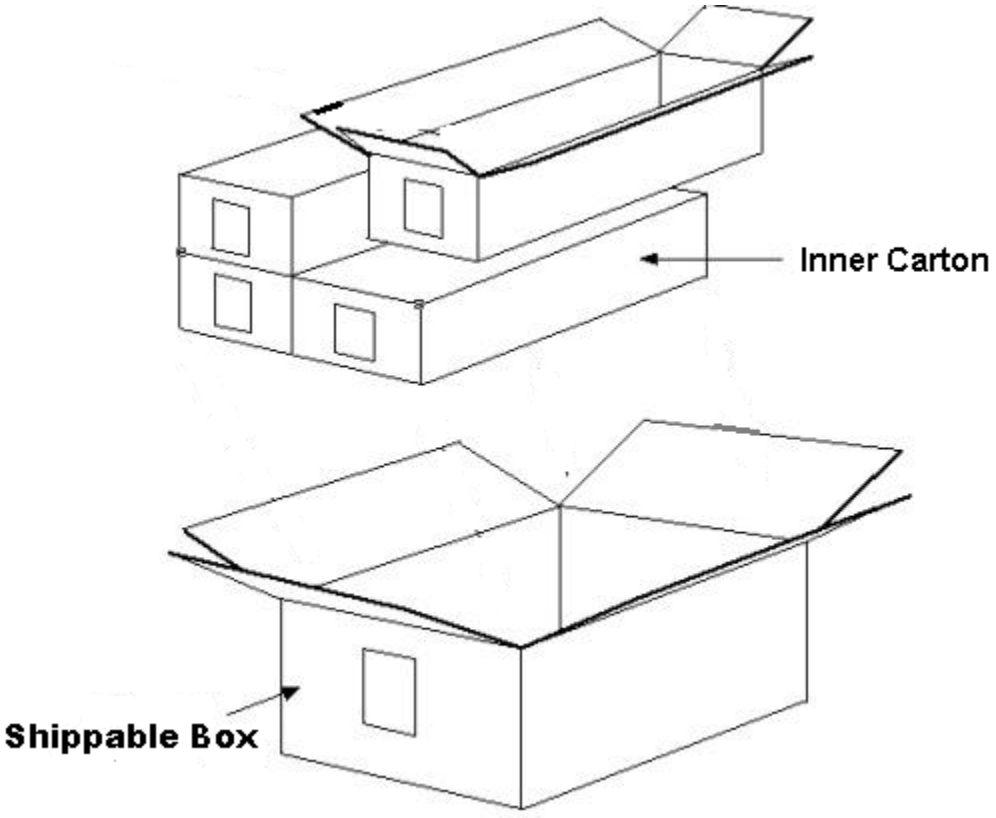
3.2.1 There is no mixing of part numbers or purchase orders in an inner carton

3.2.2 Inner cartons are suitable for short-haul transportation handling – they can be handled inside a warehouse and placed on truck for short distances

3.2.3 Shipping boxes may contain inner cartons or directly contain product

3.2.4 A shipping box containing inner cartons shall have a label that clearly states "**Contains Inner Cartons**". This allows the VMI Hub to open the shipping box and receive product in at the inner carton level.

3.2.5 Shipping boxes are suitable for long-haul transportation moves



3.3 Over-Pack Labels

Over-pack Labels are affixed to boxes containing smaller shipping boxes. This package label is useful when consolidating shipments going to one location.

3.3.1 The Over-pack label is used when shipping boxes are consolidated for shipment to one location.

3.3.2 A Shipping Box label is used when the inner cartons it contains are not suitable for long-haul logistics moves.

3.3.3 Over-pack label clearly states, “Over Pack”. Note: This replaces the “Mixed Load” from the previous version of this specification since “Over Pack” more clearly describes the contents (consolidated shipping boxes)

3.3.4 The shipping boxes contained within the over-pack can have the same part number and same purchase order number OR can have different part numbers and different purchase order numbers.

3.3.5 Over-packs are opened at VMI hubs and received in at the lower shipping box

4 Inbound Component Shipments Requiring these Labels

The inbound label requirements apply to both serialized and non-serialized components being shipped to any of Cisco’s hubs or EMS partners. However, depending on the commodity, there might be additional requirements outside of this spec.

4.1 The package label requirements for inbound logistics apply to ALL inbound components being shipped from supplier sites to any of Cisco’s Hubs or EMS partners. Examples include:

4.1.1 EMS Partner shipping to another EMS Partner

4.1.2 Component Supplier shipping to a Hub

4.1.3 3rd Party provider shipping to a Hub

4.1.4 Broker shipping to a Hub, EMS Partner or distributor

4.1.5 Distributor shipping to EMS Partner, etc.

4.2 The component traceability requirements apply only to those component products marked “Required” in the Component Commodity Table listed in Appendix A. These are in addition to the package label requirements mentioned in 4.1.

4.2.1 The requirements are applicable to all electrical, electro-mechanical, optical, passive and active components including electronic sub-assemblies and modules.

4.2.2 For commodities where component origin (traceability) information is not required, the supplier must still adhere to all package label requirements.

4.2.3 For serialized components, the traceability requirements could be different from a non-serialized component. Refer to Appendix A to

determine the traceability information applicable for each commodity.

5 Component Traceability Label Elements

Cisco requires traceability for all electrical components, PCB's, and sub-assemblies used within the products. The requirements in this document ensure that the component origin information, as communicated from Cisco's Suppliers on the packaging labels, can be accurately captured by Cisco's supply chain and EMS partners.

5.1 The following five key elements for traceability must be communicated from Component Suppliers for non-serialized (PCBA) components to Cisco's downstream supply chain partners, per class code requirements in Appendix A:

- Cisco Part Number (CPN)
- Manufacturer Part Number (MPN)
- Manufacturer
- Date Code
- Traceability Code or Lot Code

5.2 The defined traceability data must appear on all labels; shipping box, inner box, and unit product package (i.e. trays, tubes, reels, etc.).

5.3 Required capability within Supplier's Quality Management System to maintain traceability.

5.3.1 Supplier shall have a system of maintaining traceability records and shall promptly retrieve and transmit such records and data to Cisco upon request. Supplier shall archive all data for a minimum of five (5) years for component origin information on shipments to Cisco, or as otherwise agreed to by Cisco in writing.

5.3.2 Supplier shall have a procedure in place on component traceability details: what to track, how to track, frequency and mechanism to verify if traced information is correct, retention of traceability information, and process on when changes are needed.

5.3.3 Supplier Quality Management System shall address pushing Supplier's traceability requirements to sub-suppliers.

5.3.4 If supplier cannot meet the above requirements, then it must go through a deviation process by providing all the relevant details and

justification to Cisco and getting an approval during the label review process.

5.4 Access to information

5.4.1 Supply Chain partners, including component manufacturers, suppliers and EMS Partners, shall provide Cisco access to traceability in support of containment, corrective action and other requests.

5.4.2 Distributors, Brokers or other supply chain partners other than the Manufacturer shall maintain the Manufacturer's key traceability information on packaging labels or otherwise maintain a linkage between the packaging label information and the Manufacturer's information. The intent is to not break the chain of traceability between the original component Manufacturer and Cisco EMS Partner.

5.4.3 Forward traceability: Where Suppliers provide traceability information to downstream supply chain partners, Cisco's partners should be able to reference the information to track the further shipment, inventory location or usage of parts.

5.4.4 Reverse traceability: the supplier shall be able to access information on shipments and related traceability data based on Cisco or downstream supply chain partners providing the traceability information captured from the Supplier's packaging labels.

5.5 Part Numbers

5.5.1 CPN: The Cisco Part Number shall be provided on the packaging labels

5.5.2 MPN: The Manufacturer Part Number as it appears on the purchase order placed with the supplier shall be provided on the packaging labels

5.5.3 Both CPN and MPN shall be bar coded in separate fields.

5.5.4 MPN barcode shall not include any additional revision details or additional characters for internal tracking. The barcoded value of MPN must match the MPN as it appears on the PO.

5.5.5 Requirement of MPN to match the Purchase Order does not apply to class code 28- and class code 17-. For class code 28-(PCB), supplier may use their own MPN value. For class code 17- (also referred to as programmable parts) refer to Appendix C for details.

5.6 Manufacturer

5.6.1 The Manufacturer Name shall be provided on each label types (Unit product package label, Shipping box label & Over-pack Label)

5.6.2 Manufacturer name shall be bar coded in a separate field.

5.7 Date Code (applicable for non-serialized components)

5.7.1 The component Date Code denotes a period of time during which the component was processed through a major manufacturing operation, determined by the manufacturer. Date Code on packaging labels usually align to the component or device marking.

5.7.2 Date Code shall follow the four-digit **YYWW** format**.** Example: Date Code of 1211 refers to the eleventh calendar week of year 2012.

5.7.3 Waivers in cases where a different Date Code format is used must be highlighted to Cisco for review.

5.7.4 Date Code must consist of numeric characters, no special characters. Examples: blank spaces, hyphens, commas are not allowed. Characters for Year (YY) and Week (WW) must be numeric.

5.7.5 Maximum range of Date Codes within a package level shall be limited to:

- Shipping Box: no limit
- Unit Product Package/Inner Box, with exception of secure devices: Eight (8) consecutive calendar weeks, example: 1236 to 1244
- For secure devices: Unit Product Package/Inner Box, the date code range is limited to 13 consecutive calendar weeks.

5.7.6 In cases where components from multiple date codes are packaged in a single Unit Product Package/Inner Box, all the individual date codes must be listed on the label separated by a “/”. The barcoded value must also include the character “/”. Example:
1236/1237

5.7.7 Maximum numbers of date codes allowed in a single Unit Product Package/Inner box are defined in Appendix B.

5.7.8 More than one Traceability Code having the same Date Code is allowed. Example:

Traceability:	Date Code:
120828A	1236
120908A	1237
120910B	1237

5.8 Traceability Code (applicable for non-serialized components)

5.8.1 Traceability for a manufacturing batch or grouping of components: The traceability code is the appropriate internal supplier identifier linking to the component's manufacturing origin. Along with the other key traceability elements (Section 4.1), it enables precision containment of a sub-group of components in the event of a quality or compliance issue.

5.8.2 Traceability Codes are associated with manufacturing operations in a specific time period and shall not be repeated or reused at a later time.

5.8.3 Traceability Codes shall be a maximum of 48-characters.

5.8.4 Refer to Appendix A for commodities requiring batch-level traceability. For example, Class Code 11-, for the Commodity Group "E/M – Capacitors," Date Code and Traceability Code are listed as "Required" fields on the packaging labels.

5.8.5 Refer to Appendix B for information to be used as Traceability Code by commodity.

5.8.6 For secure devices: Both the physical reel and moisture barrier bag must feature a label clearly stating the reel number of that manufacturing lot.

5.8.7 Cisco should communicate any additional commodity-specific requirements. For example, memory modules and cards have additional requirements including serialization and device labeling in EDCS 651800 "Memory Module/Card Traceability."

5.9 Serial Number

5.9.1 For serialized components that are used in PCB assembly, the serial number should be printed at a minimum on the UPP label. The serial number shall be printed instead of the Trace code field on the label.

5.9.2 If feasible, the serial number shall also be printed on the shipping box. However, in cases where multiple serialized units are packed in a single shipping box, all the serial numbers need not be printed on the shipping box as long as this information is available on the UPP label

5.9.3 For serialized components used in Direct Fulfillment, the serial number must be printed on the device label.

5.9.4 Device label and serial number format is not a part of the scope of this document. The supplier must comply with spec number 95-1766-01 for the serial number requirements.

5.9.5 This document covers only the shipping box and UPP label requirements for the serialized parts.

5.10 Traceability Quantity

5.10.1 The package quantity shall be provided on the packaging labels per minimum requirements in Table 5.1.

5.10.2 Quantity shall be bar coded in a separate field.

5.11 Mixing Requirements

5.11.1 For Traceability Code and Mixing Limits, See Appendix B.

5.11.2 Total quantity shall be clearly identified and scan-able on all relevant container labels.

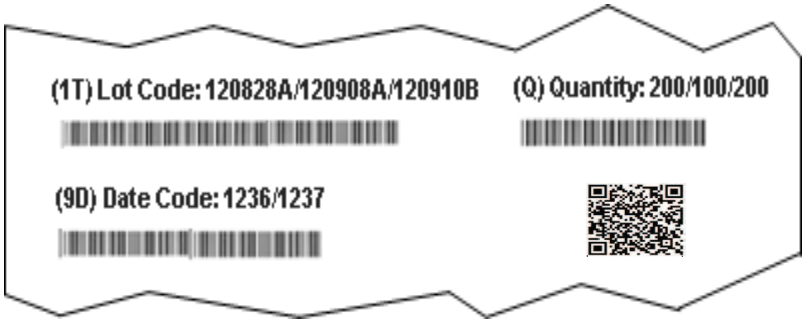
5.11.3 For multiple traceability in a single reel, tray or bag ALL **traceability codes** shall be combined in the bar code using a “/” (slash) character as the delineation (space between traceability).

5.11.4 For multiple traceability codes, the barcoded value on the label shall also include the “/” (slash) character.

5.11.5 For multiple traceability codes in a single reel, tray or bag the Quantity shall be represented in a single barcode. The quantity could either be the total quantity including all traceability codes or give the individual quantity split using “/” character

For Unit Product Packages: Option #1 – Single Quantity

For Unit Product Packages: Option #2 – Split Quantity, by traceability code



5.12 Process to review and approve label formats

5.12.1 Cisco will require an acknowledgement of receipt from the component Suppliers, verifying that the specification document was received, and the requirements understood. The approval of label samples will be handled through an online questionnaire and a review process.

5.12.2 Label samples will be requested for review against logistics and traceability requirements against this specification.

5.12.3 Suppliers shall notify Cisco of significant changes to label format that introduce or remove of the minimum required fields (Table 5.1).

5.12.4 Supplier shall respond to requests for further information including audits of traceability within the Supplier Quality Management System.

6 General Label Format Requirements

6.1 Bar Code:

6.1.1 Code 39 is the preferred format, as defined in CEA 556-C.

6.1.1.1 Start and Stop code shall be “*” character.

6.1.1.2 Code 128 acceptable, as defined in CEA 556-C.

6.1.1.3 Start and Stop code for Code 128 shall be in compliance with ANSI MH10.8.2-2010.

6.1.2 Contrast, line widths and spacing between bars shall conform to CEA 556-C.

6.1.3 The QR code will be used on all existing labels

6.1.3.1 Encode all the required label's data elements with Data identifiers into the QR code with the comma-separated values (CSV) format. No specific order for data elements is required.
Example of QR code data output: Supplier1,1P12-9876-01,P12-4567-89,1T271490000,9D1246,Q100,4LUS.

6.1.3.2 QR code size:
Greater or = to (13mm X 13mm) Less than or = to (15mm X 15mm)

6.1.4 All bar codes shall be 1D and 2D, as defined in CEA 556-C.

6.1.5 All bar codes shall be of a size that is scan-able by commonly available 1D and 2D barcode readers.

6.2 Human Readable Content:

6.2.1 English language only

6.2.2 Preferred font is Arial.

6.2.3 Size should be a minimum of 10 points.

6.2.4 Human readable content should be printed either immediately above or below the corresponding bar code.

6.3 Label stock shall be white or buff in color.

6.4 Printing shall be black in color.

6.5 The label shall be pasted flat on one side of the box and not roll across the edges.

6.6 RoHS Marking Requirements: See Cisco EDCS 493962 -RoHS Packaging and Part Marking Policy.

6.7 Data Identifiers

6.7.1 Data Identifiers are to be used as the first character(s) immediately after the start code unless specifically stated where they are not to be used for each packing label level.

6.7.2 Data Identifiers will appear in the "Field Name or Title" as the leading characters bracketed by parenthesis, i.e. (1T) Traceability Code in the Human Readable portion and without parenthesis in the bar code.

6.7.3 Inclusion of each Data Identifier is controlled by the Data Identifier table for each package level.

Data Identifiers used by Cisco Table

Label Content	Data Identifier
Ship to Address	None
Ship from Address	None
Country of Origin	4L
Purchase Order Number (PO)	None
Manufacturer Name	None
Manufacturer Part Number (MPN)	1P
Cisco Part Number (CPN)	P

Date Code	9D
Traceability Code	1T or S*
Quantity	Q
Box Count (Box X of Y)	None
Supplier Name	None
Supplier Part Number	None

NOTES: * Use 1T for non-Serialized components and S for Serialized components.

7 Country of Origin labeling requirements

7.1 Refer to Cisco 95-1728-01 for the detailed requirements on Country of Origin labeling.

7.2 General guidance to explain the label samples contained in this document:

7.2.1 Human readable text shall conform to Cisco specification 95-1728-01. Examples include but are not limited to “Country of Origin U.S.A”, “Made in China,” “Made in Mexico,”: “Made in Malaysia,” etc.

7.2.2 The barcode shall contain the data identifier and 2-digit country code, per ISO 3166. Not using the 2-digit country code may result in data capture errors for the receiving party. For example, a label with human-readable text of “Made in China” must contain “CN” within the Country-of-Origin barcode.

7.2.3 Per China’s new compliance requirement, the country of origin must be printed as specified in the Country Of Origin Table when the product has country of origin equals to Taiwan and shipping to China or Hong Kong.

Country Of Origin Table

PRODUCT'S COO and Ship-to location	COO = TW	CO = Other countries
1. **Ship-to China or Hong Kong location**	Made in Chinese Taipei	Made in **xxx***
2. **Ship-to other locations**	Made in Taiwan	Made in **xxx***

Note: * Where **XXX** is the Territory_Short_Name from the ISO country code list.

8 Serialized Components

This section of requirements applies to the parts such as sub-assemblies, modules and accessories that are shipped to Cisco's Direct Fulfillment partners. These parts may or may not be serialized. Shipping carton label requirements apply to all parts, however the serialized parts have additional requirements as detailed below.

8.1 Shipping Carton Label Details

8.1.1 This label must be affixed to all the shipping boxes and inner cartons, if used.

8.1.2 Each inner carton must contain this label even though it will be placed inside of a shipping box.

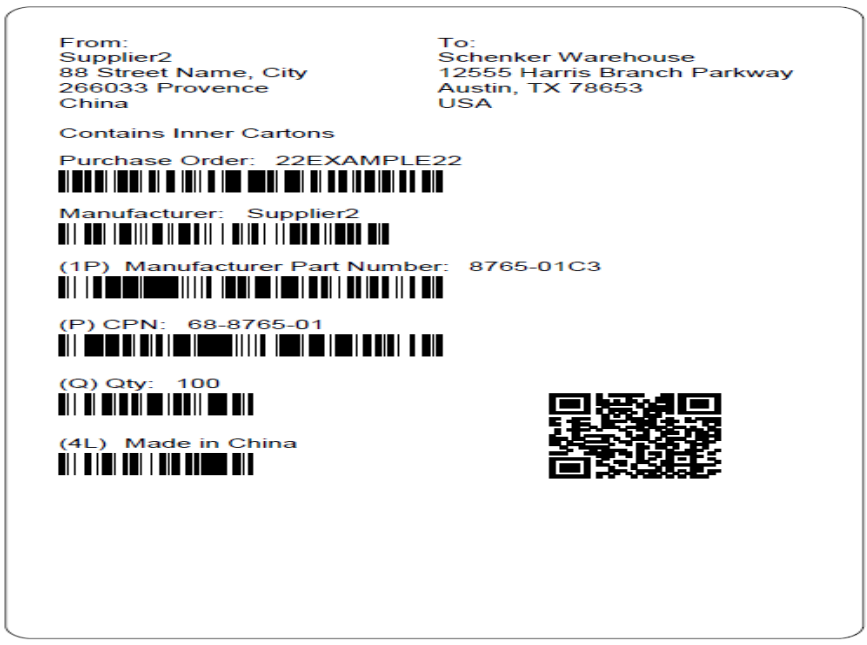
8.1.3 Each shipping box must contain this label whether or not this shipping box will ultimately be placed in an over pack.

8.1.4 A shipping box will not be opened at a VMI Hub unless the words "Contains Inner Cartons" are indicated on the label. It is assumed that without these words, the box is at its lowest level and cannot be broken down further.

Field Name/Content	**Data Format**	**Data Identifier**	**Description**
Ship to Address	Human Readable	None	The address of the shipment recipient.
Ship from Address	Human Readable	None	The address of the originator organization.
Label ID- Must print "**Contains Inner Cartons**"	Human Readable	None	If the shipping box contains inner cartons that can withstand short-haul handling, print "Contains Inner Cartons" on the shipping box label.
Country of Origin	Human Readable and Bar Code	4L	Examples: "Country of Origin U.S.A", "Made in China," "Made in Mexico,": "Made in Malaysia," etc. The barcode is the 2-digit country code, per ISO 3166.
PO Number	Human Readable and Bar Code	None	Purchase Order given by Cisco or Manufacturing Partner to Component Supplier
Manufacturer Name	Human Readable and Bar Code	None	Component, Module or Assembly supplier's name

Manufacturer's Part Number (MPN)	Human Readable and Bar Code	1P	Component, Module or Assembly supplier's orderable part number. This MPN must exactly match the Purchase Order placed with the supplier. Non-compliance will result in shipment rejection at Incoming Inspection at Cisco's Manufacturing Partners or Hubs.
Cisco Part Number (CPN)	Human Readable and Bar Code	P	The part number assigned by Cisco
Quantity	Human Readable and Bar Code	Q	Total quantity in the package. Alternatively, it can be the component quantity for each Traceability or Date Code, where the sum is the total quantity in the Package.
Box Count (Box # of Total Boxes)	Human Readable (Bar Code Optional)	None	The box or container number in the total number of boxes or containers packed for this shipment.
QR Code	Comma Separated Values (CSV)	None	Encode all required 1D barcode data elements with Data identifiers into QR code separated by commas. (Example: PO Number, COO, Manufacturer Name, Manufacturer's Part Number (MPN), Cisco Part Number (CPN), and Quantity) Refer to section 6.1.3 for details

Example of a shipping label,



8.2 Over Pack Label Details

8.2.1 This label allows for consolidation of shipping boxes at the supplier site for shipment to the same destination.

8.2.2 The shipping boxes contained within the over-pack box do not have to be the same part number or PO number.

8.2.3 The over-pack label will contain the words "**Over Pack**" on the label

8.2.4 The VMI Hubs will see the "**Over Pack**" label and understand that they can open these boxes and find shipping boxes contained within.

8.2.5 Over Pack Label minimum contents:

Field Name or Label Content	**Data Format**	**Data Identifier**	**Description**
Ship to Address	Human Readable	None	The address of the shipment recipient
Ship from Address	Human Readable	None	The address of the originator organization
Country of Origin	Human Readable and Bar Code	4L	Examples: "Country of Origin U.S.A", "Made in China," "Made in Mexico,": "Made in Malaysia," etc. The barcode is the 2-digit country code, per ISO 3166.
Label ID - Must print "**OVER PACK**"	Human Readable	None	Identifier notifying Hub that the shipment contains multiple shipping boxes. Triggers package breakdown for proper receipt.
Manufacturer Name	Human Readable and Bar Code	None	Component, Module or Assembly supplier's name.
QR Code	Comma Separated Values (CSV)	None	Encode all required 1D barcode data elements with Data identifiers into QR code separated by commas. (Example: Manufacturer Name, COO) Refer to section 6.1.3 for details

Example of an over-pack label

8.3 Device label

All suppliers shipping serialized parts are required to comply with the serial number format requirements as specified by Cisco. Refer to Appendix A to verify if your components fall under serialized category. Serial number requirements are defined in spec 95-1766-01. Supplier should reach out to mailer Traceability @cisco.com to get the latest copy of the spec or get further information for the requirements.

9 Non-serialized Components

9.1 Label Format Summary

	Package Level		
Label Content	**Unit Product Package (9.2)**	**Shipping Box (includes Inner cartons) (9.3)**	**Over Pack (9.4)**
Ship to Address		X	X
Ship from Address		X	X
Country of Origin	X	X	X
Label ID		X	X
Purchase Order Number (PO)	P	X	
Manufacturer Name	X	X	X
Manufacturer Part Number (MPN)	X	X	
Cisco Part Number (CPN)	X	X	
Date Code	T	T	
Traceability Code	T	T	
Serial number (in place of date code/lot code)	T	P	
Package Quantity	X	X	
Box Count (Box X of Y)		X	
Supplier Name	S	S	S
Supplier Part Number	S	S	

Legend:
X = Required
P = Preferred, if available
T = Traceability field if required, per Appendix A
S = Required if components are shipped from supplier that is not manufacturer

9.2 Unit Product Package Label Details

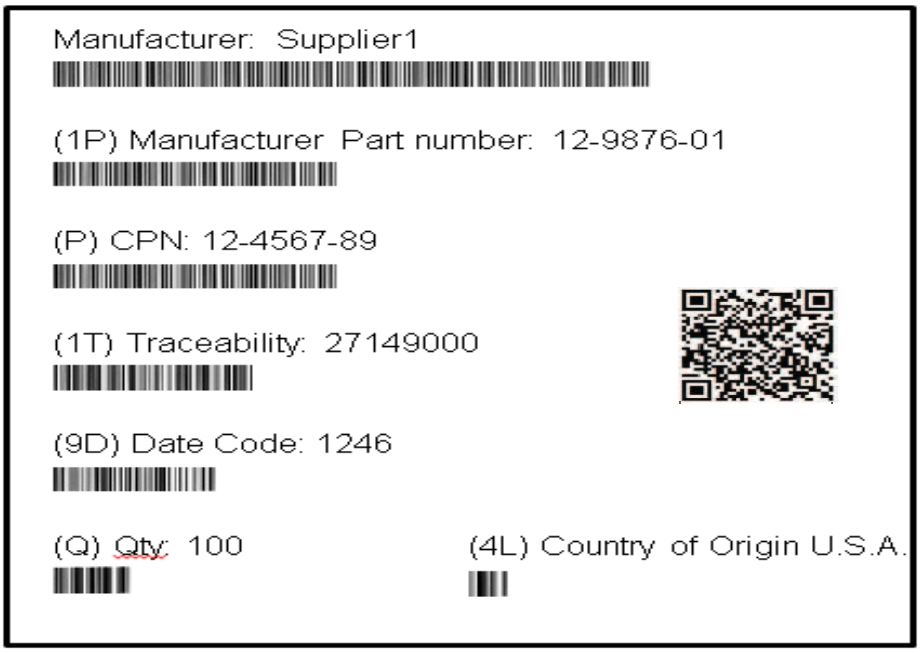
9.2.1 Traceability Mixing in Unit Product Packages shall follow the table in Appendix B.

9.2.2 Unit Product Package label minimum contents:

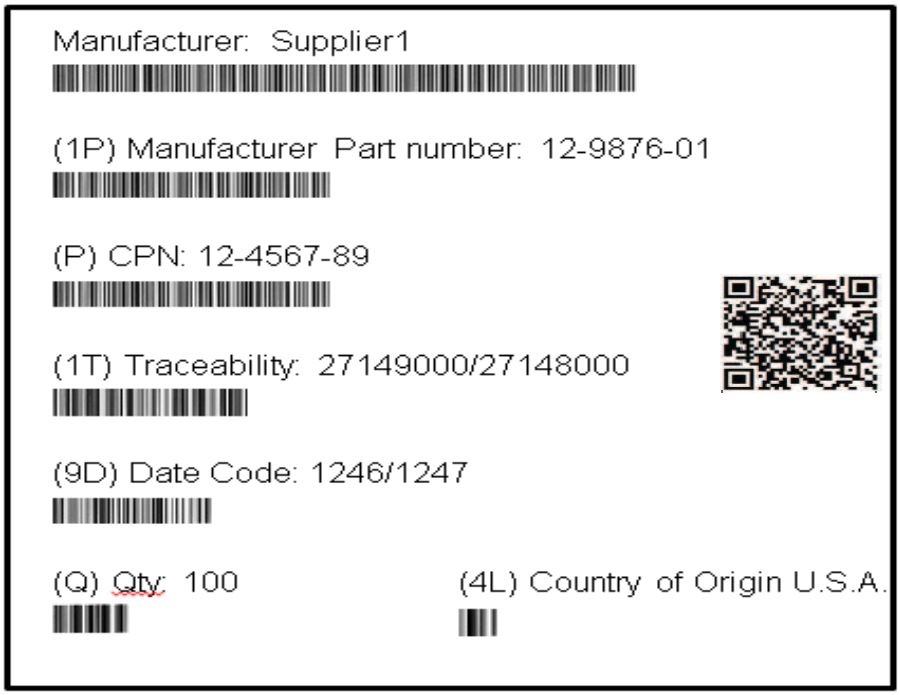
Field Name/Content	Data Format	Data Identifier	Description
Country of Origin	Human Readable and Bar Code	4L	Examples: “Country of Origin U.S.A”, “Made in China,” “Made in Mexico,”: “Made in Malaysia,” etc. The barcode is the 2-digit country code, per ISO 3166.
Manufacturer Name	Human Readable and Bar Code	None	Component, Module or Assembly supplier’s name
Manufacturer Part Number (MPN)	Human Readable and Bar Code	1P	Component, Module or Assembly supplier’s orderable part number. This MPN must exactly match the part number listed on the purchase order. Non-compliance will result in shipment rejection at Incoming Inspection at Cisco’s Manufacturing Partners or Hubs.
Cisco Part Number (CPN)	Human Readable and Bar Code	P	The part number assigned by Cisco
Date Code	Human Readable and Bar Code	9D	Manufacturer’s date code
Traceability Code	Human Readable and Bar Code	1T or S	The information that allows the full access to the component’s manufacturing history (ie, lot code). Use 1T for non-serialized parts and S for Serialized parts.
Quantity	Human Readable and Bar Code	Q	Total quantity in the package. Alternatively, it can be the component quantity for each Traceability or Date Code, where the sum is the total quantity in the Package.
Supplier Name (if not shipped from mfr)	Human Readable and Bar Code	None	Name of the Distributor, Broker, EMS or Hub, if different than the manufacturer
Supplier Part Number	Human Readable and Bar Code	None	Part number assigned to a component by a Distributor, Broker, Cisco’s Manufacturing Partner or Hubs.
QR Code	Comma Separated Values (CSV)	None	Encode all required 1D barcode data elements with Data identifiers into QR code separated by commas. (Example: Manufacturer Name, Manufacturer Part Number (MPN), Cisco Part Number (CPN), Date Code, Traceability Code, Quantity, Supplier Name and Supplier Part Number, COO) Refer to section 6.1.3 for details

***Note: For programmed parts (class code 17-xxxx-xx), please refer to Appendix C for additional details on field descriptions.*

Example of Unit Product Package Label for one Traceability or Date Code:
Drawing Not to Scale



Example of Unit Product Package Label for two Traceability or Date Codes:
Drawing not to scale



9.2.3 Although not preferred, partial containers are allowed in Unit Product Packages for commodities limited to one (1) Traceability code per package, per Appendix B. For example, in Appendix B the Traceability Mixing Limits for CPN 15-XXXX-XX, representing memory Component Group Modules – All (except Non-Volatile Memory and PLD), the Traceability Mix allowed in a Package (Date Code / Mfg Lots) is listed as 1/1.

9.2.4 Unit Product Packages containing two or more Traceability or Date Codes:

- The information for all Traceability Codes shall be contained in one bar code, the data being delimited by a "/" (slash) character.
- The information for all Date Codes shall be contained in one bar code, the data being delimited by a "/" (slash) character. The data ordering must match the order listed for the Traceability Code field.

9.2.5 There are two options for listing the Quantity data.

- The Quantity may be the total quantity for the UPP.
- If the label breaks out the quantity data for each Traceability or Date Code, it should also be contained in a single bar code with the data being delimited by a " / " (slash) character. The data ordering must match the order listed for the Traceability Code field.

9.2.6 In cases where the label size will not fit on the UPP the human readable content font size may be reduced to allow for a smaller label. This reduction must be readable with no more than a 5X magnification. All bar codes must remain scan-able by standard bar code readers.

9.2.7 For RoHS markings, refer to Cisco EDCS 493962 - RoHS Packaging and Part Marking Policy.

9.2.8 Any necessary Moisture Sensitivity Level warnings or declarations must be on a separate label attached to the Unit Product Package and comply with the requirements established in Section 11.

9.2.9 Any necessary ESD Sensitivity markings or warnings must be on a separate label attached to the Unit Product Package.

9.3 Shipping Box Label Details – non-serialized components

9.3.1 This label must be affixed to all inner cartons and shipping boxes.

9.3.2 Each inner carton must contain this label even though it will be placed inside of a shipping box.

9.3.3 Each shipping box must contain this label whether or not this shipping box will ultimately be placed in an over pack.

9.3.4 A shipping box will not be opened at a VMI Hub unless the words "**Contains Inner Cartons**" are indicated on the label. It is assumed that without these words, the box is at its lowest level and cannot be broken down further.

9.3.5 Shipping Box Label minimum contents:

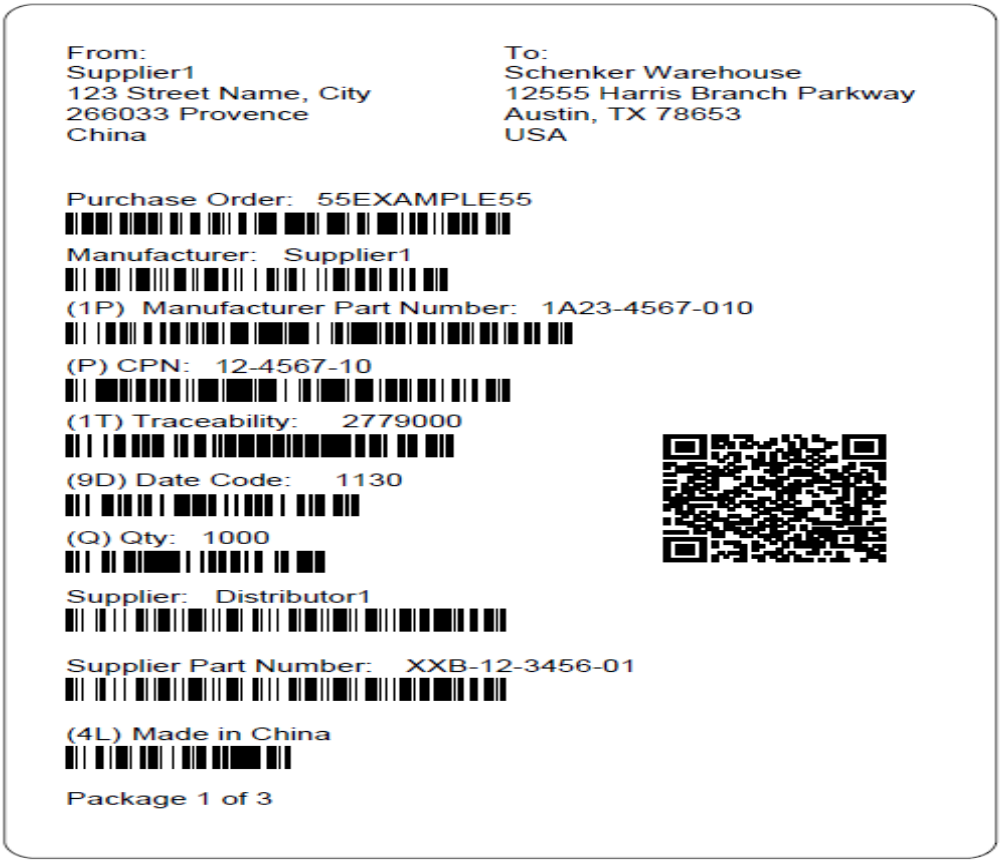
Field Name/Content	**Data Format**	**Data Identifier**	**Description**
Ship to Address	Human Readable	None	The address of the shipment recipient.
Ship from Address	Human Readable	None	The address of the originator organization.
Label ID- Must print "**Contains Inner Cartons**"	Human Readable	None	If the shipping box contains inner cartons that can withstand short-haul handling, print "Contains Inner Cartons" on the shipping box label.
Country of Origin	Human Readable and Bar Code	4L	Examples: "Country of Origin U.S.A", "Made in China," "Made in Mexico,": "Made in Malaysia," etc. The barcode is the 2-digit country code, per ISO 3166.
PO Number	Human Readable and Bar Code	None	Purchase Order given by Cisco or Manufacturing Partner to Component Supplier
Manufacturer Name	Human Readable and Bar Code	None	Component, Module or Assembly supplier's name
Manufacturer's Part Number (MPN)	Human Readable and Bar Code	1P	Component, Module or Assembly supplier's orderable part number. This MPN must exactly match the part number listed on the Purchase Order placed with the supplier. Non-compliance will result in shipment rejection at Incoming Inspection at Cisco's Manufacturing Partners or Hubs.

Cisco Part Number (CPN)	Human Readable and Bar Code	P	The part number assigned by Cisco
Date Code	Human Readable and Bar Code	9D	Manufacturer's date code
Traceability Code	Human Readable and Bar Code	1T or S	The information that allows the full access to the component's manufacturing history. Use 1T for non-serialized parts and S for Serialized parts.
Quantity	Human Readable and Bar Code	Q	Total quantity in the package. Alternatively, it can be the component quantity for each Traceability or Date Code, where the sum is the total quantity in the Package.
Box Count (Box # of Total Boxes)	Human Readable (Bar Code Optional)	None	The box or container number in the total number of boxes or containers packed for this shipment.
Supplier Name	Human Readable and Bar Code	None	Name of the Distributor, Broker, EMS or Hub, if different than the manufacturer
Supplier Part Number (if not shipped from mfr)	Human Readable and Bar Code	None	Part number assigned to a component by a Distributor, Broker, Cisco's Manufacturing Partner or Hubs.
QR Code	Comma Separated Values (CSV)	None	Encode all required 1D barcode data elements with Data identifiers into QR code separated by commas. (Example: PO Number, Manufacturer Name, Manufacturer Part Number (MPN), Cisco Part Number (CPN), Date Code, Traceability Code, Quantity, Supplier Name and Supplier Part Number, COO) Refer to section 6.1.3 for details

** For programmed parts (class code 17-xxxx-xx), please refer to Appendix C for additional details on field descriptions.*

Example: Shipping Box Label

- Contains only one Traceability or Date Code
- Shipped by someone other than the Manufacturer
- Cannot be opened at VMI Hub as it is already at its lowest level (i.e. product is directly inside)



Example: Shipping Box Label

- Contains two Traceability or Date Codes separated by “/”

Contains Inner Cartons suitable for short-hauls and will be opened at

*** Note: If label cannot have “Contains Inner Cartons” printed on it, then affix a separate label with the printed text “Contains Inner Cartons”.*

9.4 Over Pack Label Details

9.4.1 This label allows for consolidation of shipping boxes at the supplier site for shipment to the same destination.

9.4.2 The shipping boxes contained within the over-pack box do not have to be the same part number or PO number.

9.4.3 The over-pack label will contain the words "**Over Pack**" on the label

9.4.4 The VMI Hubs will see the "**Over Pack**" label and understand that they can open these boxes and find shipping boxes contained within.

9.4.5 Over Pack Label minimum contents:

Field Name or Label Content	**Data Format**	**Data Identifier**	**Description**
Ship to Address	Human Readable	None	The address of the shipment recipient
Ship from Address	Human Readable	None	The address of the originator organization
Country of Origin	Human Readable and Bar Code	4L	Examples: "Country of Origin U.S.A", "Made in China," "Made in Mexico,": "Made in Malaysia," etc. The barcode is the 2-digit country code, per ISO 3166.
Label ID - Must print "**OVER PACK**"	Human Readable	None	Identifier notifying Hub that the shipment contains multiple shipping boxes. Triggers package breakdown for proper receipt.
Manufacturer Name	Human Readable and Bar Code	None	Component, Module or Assembly supplier's name.
Supplier Name (if not shipped from mfr)	Human Readable and Bar Code	None	Name of the Distributor, Broker, EMS or Hub, if different than the manufacturer
QR Code	Comma Separated Values (CSV)	None	Encode all required 1D barcode data elements with Data identifiers into QR code separated by commas. (Example: Manufacturer Name, Supplier Name (if not shipped from mfr) and COO). Refer to section 6.1.3 for details

Example: Over-pack Label

10 Reduction of Hazardous Substances (RoHS) Label Requirements

Refer to Cisco EDCS-493962 for the RoHS Packaging and Part Marking policy

11 Moisture Sensitivity Level Label Requirements

11.1 All inner boxes and Unit Product Package, regardless of commodity type, shall comply with the requirements set forth in IPC/JEDEC J-STD-033A

11.2 A “Moisture Sensitive Identification” (MSID) label, as specified in JEDEC JEP113, must be affixed to the inner boxes containing a moisture barrier bag (dry pack bag).

11.3 A “Moisture Sensitivity Caution” label, as specified in JEDEC JEP113, must be affixed to the moisture barrier bag (dry pack bag).

12 Order of Precedent for other Label Specifications

12.1 This document also supersedes any EMS Partner Purchase Order document for shipping and packing label requirements

12.2 Any Cisco Hub generated label specification

12.3 Any EMS generated label specification

12.4 Cisco EDCS-663884 “Inbound Material Bar Code Specification for Global Hub”, OBSOLESCED by this document

13 Roles and Responsibilities

13.1 Cisco Logistics and Traceability teams

13.1.1 Provide document to all suppliers.
13.1.2 Clarify the requirements per this document.
13.1.3 Revise this document as needed and maintain consistency with current supply practices and Cisco requirements.
13.1.4 Accountable for monitoring compliance.

13.2 Suppliers

13.2.1 Review all requirements. If any discrepancies are found communicate to Cisco for resolution. Contact traceability@cisco.com for inquiries.
13.2.2 Respond to the online survey that accompanies the spec launch and provide label samples for review and approval.
13.2.3 Suppliers are required to provide Cisco and its EMS Partners with documentation defining the format of manufacturing lot code and date code as well as the interpretation of the data.
13.2.4 Suppliers must conform to all shipping and information requirements specified on the individual Purchase Orders as well as any called out conditions to the shipment.
13.2.5 The Supplier will make available information on Cisco shipments, including all the minimum required fields, on the request of Cisco or its supply chain partners in the event of a containment action.
13.2.6 It is highly preferred that the required traceability information be maintained on the packaging labels from the original manufacturer. If the Supplier's traceability information is on the packaging labels, includes date code and lot code, Supplier systems must be able to track between the Manufacturer's and Supplier-assigned information.

13.3 Cisco Hub partner

13.3.1 In cases where components are repackaged for shipment into new boxes, Hub partners must add shipping labels that are compliant to this spec.
13.3.2 If the original packaging and incoming supplier label is intact and no transformation or repackaging is done on the components, then Hub partners are not required to add additional labels with same information. However they must scan the incoming label and store

the data for future reference up to a period of 7 years or as otherwise agreed to by Cisco in writing.

13.3.3 In cases where components are transformed to other entities (via board sub-assembly or via programming), Hubs must record traceability information from incoming supplier labels and store it for future reference up to a period of 7 years or as otherwise agreed to by Cisco in writing. When these transformed components are shipped to Cisco's EMS partners, the shipping labels must comply to the requirements in the spec. Hubs must track gaps in supplier label traceability data, initiate corrective actions, set forth timelines to close such gaps and if necessary, inform Cisco of suppliers consistently not meeting Cisco label specification requirements.

13.4 Cisco EMS partner

13.4.1 Receive and review this document.

13.4.2 Provide Cisco part number on the PO when placing order to component supplier.

13.4.3 Communicate any discrepancies or gaps between this specification and the standard operating procedure used by the EMS Partner at incoming inspection and receiving to Cisco.
Contact traceability@cisco.com for inquiries.

13.4.4 Collect and record at incoming and through the entire manufacturing process the information identified in this document as the minimum required content.

13.4.5 Contact Manufacturers and Suppliers regarding instances of non-compliance. Escalate to Cisco when needed.

Appendix A: Cisco Class Code Designations

Traceability information requirements by Cisco Commodity Group
The table below delineates what type of traceability information Cisco requires, based on commodity. The other minimum label contents in section 8 for serialized and section 9 for non-serialized components are still required, even if batch-level (Date Code and Traceability Code) or individual device serial number (Traceability Code) is "Not Required."

Cisco Class Code	Cisco Part Number (CPN)	Component Group	Types of Information Required	
			Date Code and Traceability Code	Unique Serial Number
1	01-XXXX-XX	ASIC Module	Required	Not Required
5	05-XXXX-XX	Optical Passives	Required	Required
6	06-XXXX-XX	E/M - Audio Equipment	Required	Not Required
7	07-XXXX-XX	E/M – RF Equipment	Required	Not Required
8	08-XXXX-XX	ASIC	Required	May be required, depends on CPN
9	09-XXXX-XX	Capacitor Network	Required	Not Required
10	10-XXXX-XX	Optical Active	Required	Required
11	11-XXXX-XX	Capacitors	Required	Not Required
12	12-XXXX-XX	Resistors	Required	Not Required
13	13-XXXX-XX	Diodes	Required	Not Required
14	14-XXXX-XX	Resistor Network	Required	Not Required
15	15-XXXX-XX	IC – All (except Assembly Modules and CPUs used in DF)	Required	Not required
15	15-XXXX-XX	MPUs, CPUs (assembled in DF)	Not Required	Required
15	15-XXXX-XX	Assembly Modules – All (except Non-Volatile Memory)	Required	Required
16	16-XXXX-XX	Programmable Devices (discrete package)	Required	Not Required
16	16-XXXX-XX	Assembly Modules – Flash Cards (All types)	Required	Required
17	17-XXXX-XX	Programmed Devices (discrete package)	Required	Not Required
17	17-XXXX-XX	Assembly Modules – Programmed Flash Cards	Required	Required
18	18-XXXX-XX	Magnetics-Delay Line	Required	Not Required
19	19-XXXX-XX	Crystal-Oscillator-SAW Oscillator	Required	Not Required
20	20-XXXX-XX	Transistors	Required	Not Required
21	21-XXXX-XX	Filter-Circuit Protection	Required	Not Required
22	22-XXXX-XX	Switch	Required	Not Required
23	23-XXXX-XX	Relay	Required	Not Required
24	24-XXXX-XX	Transformer-Inductor-Toroid	Required	Not Required
25	25-XXXX-XX	LED	Required	Not Required
26	26-XXXX-XX	Socket	Required	Not Required
28	28-XXXX-XX	PCB	Required	Required for S-grade PCBs
29_27	29-XXXX-XX	Connector-Header-Terminal	Required	Not Required
30	30-XXXX-XX	Telecommunication Modules	Required	Required
31	31-XXXX-XX	Raw Wire-Raw Cable	Not Required	Not Required
33	33-XXXX-XX	Fans, Blowers	Not Required	Required
34	34-XXXX-XX	Off the Shelf Power Supply	Required	Required
341	341-XXXX-XX	Custom Power Supply	Required	Required

35	35-XXXX-XX	Battery	Required	Not Required
36	36-XXXX-XX	Ferrite Array	Required	Not Required
37	37-XXXX-XX	Jack-Power Cord	Not Required	Not required
39	39-XXXX-XX	Optical Connector-Cable	Not Required	Required
40	40-XXXX-XX	Recording Media	Not required	Not Required
43	43-XXXX-XX	Sensor/Lens, Camera-Lens-Image Sensor, and Display	Required	Not Required
47	47-XXXX-XX	Labels Std	Not Required	Not Required
48	48-XXXX-XX	Screw	Required	Not Required
49	49-XXXX-XX	Nut-Washer	Required	Not Required
50	50-XXXX-XX	Standoff-Spacer	Required	Not Required
51	51-XXXX-XX	General Hardware-Heatsink-Gasket	Required	Not Required
52	52-XXXX-XX	Clip-Clamp	Required	Not Required
53	53-XXXX-XX	Accessory Kit	Not Required	May be Required, depends on CPN
54	54-XXXX-XX	Heat Shrink Tubing	Required	Not Required
55	55-XXXX-XX	Packaging (Corr., Foam, Plastic)	Required	Not Required
56	56-XXXX-XX	Labels Product Level (Artwork, Plastic)	Not Required	Not Required
57	57-XXXX-XX	Software	Not Required	Not Required
58	58-XXXX-XX	Hard Disk Drive	Not Required	Required
60	60-XXXX-XX	Cisco Use Only	Not Required	Not Required
61	61-XXXX-XX	Cisco Use Only	Not Required	Not Required
62	62-XXXX-XX	Cisco Use Only	Not Required	Not Required
64	64-XXXX-XX	Literature	Not Required	Not Required
66	66-XXXX-XX	Pluggable Optics	Not Required	Required
67	67-XXXX-XX	PCB components kit	Not Required	Not Required
68	68-XXXX-XX	EMS Partner – Assemblies	Not Required	Required
69	69-XXXX-XX	Mechanical Assemblies	Not Required	Not Required
72	72-XXXX-XX	Cable	Not Required	May be required, depends on CPN
73	73-XXXX-XX	Mech. Assemblies	Not Required	Required
74	74-XXXX-XX	ODM/OEM Assemblies (except Adapter Card Assemblies)	Required	Not Required
74	74-XXXX-XX	ODM/OEM Adapter Card assemblies	Not Required	Required
78	78-XXXX-XX	Accessory Kit (CDOCS)	Not Required	Not Required
79	79-XXXX-XX	Tools	Not Required	Not Required
80	80-XXXX-XX	IC – Memory Modules (Obsolete)	Not Required	Not Required
83	83-XXXX-XX	Top Level CDOC Assy	Not Required	Not Required
84	84-XXXX-XX	Packaging Assemblies	Not Required	Not Required
85	85-XXXX-XX	SW Assembly	Not Required	Not Required
90	90-XXXX-XX	Claim Certificates, Right to Use, End User License Agreements	Not Required	Not Required
92	92-XXXX-XX	Cisco Use Only	Not Required	Not Required
95	95-XXXX-XX	Cisco Use Only	Not Required	Not Required
100	100-XXXX-XX	Other – Unidentified	Not Required	Not Required
300	300-xxxx-xx	Liquid Cooling Assy	Not Required	Required
301	301-xxxx-xx	Custom Quick Disconnect Coupling	Required	Not Required
302	302-xxxx-xx	Quick Disconnect Coupling	Required	Not Required
303	303-xxxx-xx	Tubing	Not Required	Not Required
304	304-xxxx-xx	Pump	Not Required	Required
305	305-xxxx-xx	Coolant	Required	Not Required
471	471-XXXX-XX	Labels Std	Not Required	Not Required
473	473-XXXX-XX	Labels Anti-Counterfeit	Not Required	Not Required
501	501-XXXX-XX	Packaging (Foam)	Required	Not Required
502	502-XXXX-XX	Packaging (Plastic Bags)	Required	Not Required
503	503-XXXX-XX	Wood for Packaging	Required	Not Required
504	504-XXXX-XX	OEM Packaging Data	Not Required	Not Required

700	700-XXXX-XX	Fabs, EMI Gaskets, Hardware	Required	Not Required
781	781-XXXX-XX	Customer Documentation, Commodity Drawing	Not Required	Not Required
800	800-XXXX-XX	Fab/Custom	Not Required	Required
951	951-XXXX-XX	Specification Assembly	Not Required	Not Required

How to use this table:

a. The column at the far left is the list of commodities by Cisco Class Code.
b. The two columns, labeled CPN and Commodity Group, provide additional information to define and further breakdown the Class Code into a logical grouping of commodity. In some cases a class code will have multiple Commodity Groups. One example is the class code 15 for Memory, with a CPN of the format 15-XXXX-XX, which contains Commodity Groups of both IC and Modules.
c. The final columns define the requirements for the types of Traceability information required by Cisco depending on the Commodity Group. There four possibilities for how much traceability information is required:
    i. Date Code and Lot Code only
    ii. Serial Number* only
    iii. Date Code and Lot Code + Serial Number*
    iv. None, where traceability is not applicable to a particular commodity
    v. For some Class Codes, the Serial Number requirement may not be required for all components and vary depending on the sub-commodity.

Appendix B: Traceability Code and Mixing Limits

Definition of Traceability Code and Traceability Mixing Limits for each Commodity Code where Date Code & Lot Code are required per Appendix A

Class Code	Component Group	Traceability Code	Traceability Mixing Limits	
			Unit Product Package/Inner Box	Shippable Box with Product
		Source of Traceability Code Information	Traceability Mix allowed in a Package/ Box (Date Codes / Mfg Lots)	Number of mixed Inner Boxes allowed
1	ASIC Module	IC Assembly Lot Number	2 / 3	No Limit
5	Optical Passives	Lot code or Serial Number	1 / 1	No Limit
6	E/M - Audio Equipment	Lot Code		
7	E/M – RF Equipment	Lot Code		
8	ASIC	IC Assembly Lot Number or Serial Number	2 / 3	No Limit
9	Capacitor Network	Lot Code	2 / 3	No Limit
10	Optical Active	Date Code or Serial Number	N/A	No Limit
11	Capacitors	Lot Code	2 / 3	No Limit
12	Resistors	Lot Code	2 / 3	No Limit
13	Diodes	Assembly Lot Number	2 / 3	No Limit
14	Resistor Network	Lot Code	2 / 3	No Limit
15	IC – All (except Assembly Modules and CPUs used in DF)	IC Assembly Lot Number	2 / 3	No Limit
15	MPUs, CPUs (assembled in DF)	Serial Number		
15	Assembly Modules – All (except Non-Volatile Memory)	Serial Number	1 / 1	No Limit
16	Programmable Devices (discrete package)	IC Assembly Lot Number	2 / 3	No Limit
16	Assembly Modules – Flash Cards (All types)	Serial Number	1 / 1	No Limit
17	Programmed Devices (discrete package)	Program Lot Code	1 / 1	No Limit
17	Assembly Modules – Programmed Flash Cards	Serial Number	2 / 3	No Limit
18	Magnetics-Delay Line	Manufacturing Lot Number	2 / 3	No Limit
19	Crystal-Oscillator-SAW Oscillator	Manufacturing Lot Number		
20	Transistors	Assembly Lot Number	2 / 3	No Limit
21	Filter-Circuit Protection	Manufacturing Lot Number	2 / 3	No Limit
22	Switch	Manufacturing Lot Number	2 / 3	No Limit
23	Relay	Manufacturing Lot Number	2 / 3	No Limit
24	Transformer-Inductor-Toroid	Manufacturing Lot Number	2 / 3	No Limit
25	LED	Assembly Lot Number	2 / 3	No Limit

26	Socket	Fabrication Lot Code	1 / 1	No Limit
28	PCB	Fabrication Lot Code or SN for S-grade PCBs	1 / 1	1 (DC)
29_27	Connector-Header-Terminal	Assembly Lot Number or Tracking Number	1 / 1	No Limit
30	Telecommunication Modules	Serial Number	1 / 1	No Limit
33	Raw Wire-Raw Cable	Serial Number		
34	Off the shelf Power Supply	Serial Number	2/No Limit	No Limit
341	Custom Power Supply	Serial Number	1 / 1	No Limit
35	Battery	Manufacturing Lot Number	1 / 1	No Limit
36	Ferrite Array	Manufacturing Lot Number	2 / 3	No Limit
39	Optical Connector-Cable	Serial Number	1 / -	No Limit
43	Sensor/Lens, Camera-Lens-Image Sensor, and Display	Manufacturing Lot Number		
58	Hard Disk Drive	Serial Number and Firmware Rev	1 / 1	No Limit
74	ODM/OEM Assemblies (except Adapter Card Assemblies)	Manufacturing Lot Number or Date Code		
74	ODM/OEM Adapter Card assemblies	Supplier Serial Number, firmware rev and Software rev	1/1	No limit

How to use this table:

a. The column at the far left is the list of commodities by Cisco Class Code.
b. The next Column, labeled Class Code, is the same as in Appendix A. In some cases a class code will have multiple Commodity Groups. One example is the class code 15 for Memory, with a CPN of the format 15-XXXX-XX, which contains Commodity Groups of both IC and Modules.
c. The third Column, labeled “Traceability Code”, identifies the source of information requested. Not all commodities use the same information. Please use the information in this column when asked for “Traceability Code” in the label content descriptions.
d. The two columns under “Traceability Mixing Limits” define the acceptable number of different traceability data Cisco allows in each packing level to minimize risk.
e. Unit Product Package/Inner Box column defines the maximum number of different Date Code limits and Mfg Lots (Traceability Source) may be included in a Bag, Tray, Tape or Tube (Product Package) or Inner Box. The information format is Date Code limit / Mfg Lot limit
f. Shipping Box column establishes any limitation of different traceability in a shippable box. Note: Traceability information is not required on an over pack.

Appendix C: Programmable parts

These requirements are only applicable to the raw 16-xxxx-xx components that are programmed to a 17-xxxx-xx part by Cisco's programming partners. The raw 16-xxxx-xx parts are shipped by component suppliers to the pHub locations and are programmed by the pHub to a 17-xxxx-xx part. As the focus of traceability program is hardware quality, this label is designed to give Cisco better visibility into the origin of the hardware components for better containment in case of any quality concerns.
General requirements related to data identifiers, bar codes and label size requirements are consistent with the other PCBA components but the information required for some of the fields is different as detailed in the image and table below.
The label sample below is for a unit product packaging label (UPP) but the data field description would be applicable to shipping carton labels as well.

Shipping Box Label minimum contents:

Field Name/Content	**Data Format**	**Data Identifier**
Ship to Address	Human Readable	None
Ship from Address	Human Readable	None
Label ID- Must print "**Contains Inner Cartons**"	Human Readable	None
PO Number	Human Readable and Bar Code	None
Manufacturer Name	Human Readable and Bar Code	None
Raw Manufacturer's Part Number (MPN)	Human Readable and Bar Code	1P
Cisco Part Number (CPN)	Human Readable and Bar Code	None
Date Code	Human Readable and Bar Code	9D

Traceability Code	Human Readable and Bar Code	1T or S
Quantity	Human Readable and Bar Code	Q
Country of Origin	Human Readable and Bar Code)	4L
Box Count (Box # of Total Boxes)	Human Readable (Bar Code Optional)	None
Supplier Name	Human Readable and Bar Code	None
Raw Cisco Part Number (CPN)	Human Readable and Bar Code	P
QR Code	Comma Separated Values (CSV)	Encode all required 1D barcode data elements with Data identifiers into QR code separated by commas. (Example: PO Number, Manufacturer Name, Manufacturer Part Number (MPN), Cisco Part Number (CPN), Date Code, Traceability Code, Quantity, Supplier Name and Supplier Part Number, COO). Refer to section 6.1.3 for details

Example of a Shipping Box Label:

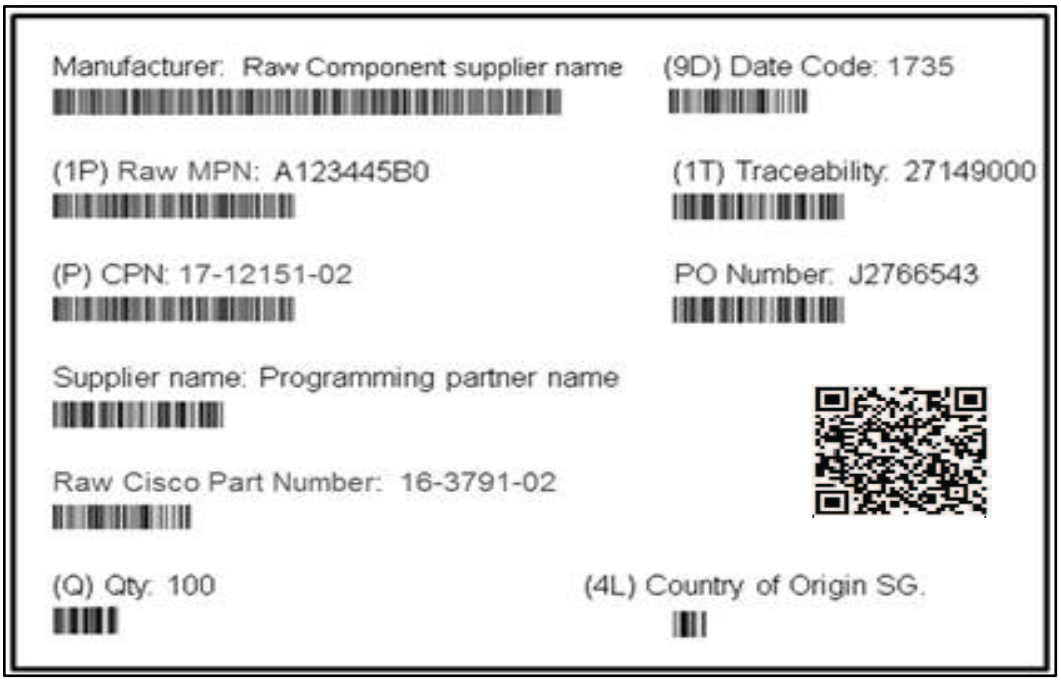
Unit Product Package label minimum contents:

Field Name/Content	Data Format	Data Identifier	Description
PO Number	Human Readable and Bar Code	None	Purchase Order given by Cisco or Manufacturing Partner to Programming Partner
Manufacturer Name	Human Readable and Bar Code	None	Manufacturer of the Raw 16-xxxx-xx hardware
Raw Manufacturer's Part Number (MPN)	Human Readable and Bar Code	1P	Manufacturer Part number of the Raw 16-xxxx-xx hardware

Cisco Part Number (CPN)	Human Readable and Bar Code	None	17-xxxx-xx part number assigned by Cisco for programmed part
Date Code	Human Readable and Bar Code	9D	Original Raw 16-xxxx-xx part number's manufacturing date code
Traceability Code	Human Readable and Bar Code	1T or S	Programming lot code from the Programming Partner's process
Quantity	Human Readable and Bar Code	Q	Total quantity in the package.
Country of Origin	Human Readable and Bar Code)	4L	Country where the original hardware was manufactured Examples: "Country of Origin U.S.A", "Made in China," "Made in Mexico,": "Made in Malaysia," etc. The barcode is the 2-digit country code, per ISO 3166.
Box Count (Box # of Total Boxes)	Human Readable (Bar Code Optional)	None	The box or container number in the total number of boxes or containers packed for this shipment.
Supplier Name	Human Readable and Bar Code	None	Name of the programming partner
Raw Cisco Part Number (CPN)	Human Readable and Bar Code	P	Cisco Part number of the Raw 16-xxxx-xx hardware
QR Code	Comma Separated Values (CSV)	None	Encode all required 1D barcode data elements with Data identifiers into QR code separated by commas. (Example: Manufacturer Name, Raw Manufacturer's Part Number (MPN), PO Number, COO, Cisco Part Number (CPN), Date Code, Traceability Code, Quantity, Supplier Name, Raw Cisco Part Number (CPN)) Refer to section 6.1.3 for details

*** Note*: *Raw Part Number: For programmed parts only. The initial Cisco part number (usually class code 16) used to create the programmed part (class code 17).*

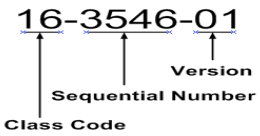
Example of a Unit Product package Label.



Appendix D: Terms and Definitions

1) **Bar Code:** An optical, machine readable representation of data. There are two levels of bar coding; 1D and 2D.
    A. **1D Bar Code:** Data is represented as both line widths and spacing between lines.
    B. **2D Bar Code:** Data is represented in patterns of squares, dots, hexagons and other geometric patterns. The image holding the 2D bar code is commonly referred to as a 2D matrix or symbol.
2) **Box Count:** Defines the number of Shipping Boxes contained in a single shipment. If single shipment has multiple boxes, the format is “Box Number” of “Total Boxes” in the shipment.
    A. **Box Number:** Identifier of a particular box. (Numeric characters)
    B. **Total Boxes:** Total number of boxes in the shipment. (Numeric characters)
3) **Brokers:** An organization that acts as an agent for a customer to locate and supply components when the standard OEM channels are unable to meet either the lead time demand, the requested quantity or are no longer manufactured. Brokers source components from multiple locations or organizations, including excess inventories and returned material.

4) **Class Code (CC):** A grouping of commodities using shared features or manufacturing processes for the purpose of Cisco part number generation and business governance.
5) **CM (Contract Manufacturer):** An electronic assembly manufacturing company that provides PCBA assembly and test services for Cisco. Same as EMS Partner.
6) **Commodity:** A grouping of components by type, i.e. PLD, Filters, Capacitors.
7) **Component:** Any device or sub-assembly that performs a specific function. Includes all electrical, optical, mechanical components used by Cisco and/or its contract manufacturers. For the purpose of this document memory modules and flash cards shall be treated as a component.
8) **Country of Origin:** Using the UNCTAD "Substantial Transformation Method", the last country where the product emerged from a process with a distinctive name, character or use. Abbreviations of country code should use ISO 3166.
9) **CPN (Cisco Part Number):** The Cisco Part Number is the unique part number assigned to component and/or sub-assembly that follows the Cisco part numbering scheme. CPN is assigned by Cisco.



Cisco Part Number scheme

10) **Customer:** The organization that issues the purchase orders for the supply of components and/or sub-assemblies. There may be multiple customers for each component and/or sub assembly, including Cisco's contract manufacturers. i.e. ODM, OEM, and etc.
11) **Data Element:** A string of characters that is the actual information identified by a specific Data Identifier. For example, date code, lot code
12) **Data Identifier:** A specific character or string of characters, that defines the intended use of the data element that follows.
13) **Date Code**: A valid Date Code can be as short as a single day, but, shall not exceed one (1) calendar week. A date code denotes a period of time during which a component was processed through a major manufacturing operation, determined by the manufacturer. In cases where the Date Code on the packaging labels does not match the device markings, Supplier internal systems should maintain traceability between the component marking and packaging label values.

    To match component markings, the Date Code usually refers to the work week in which the component was manufactured. This is not the date of packaging or shipping of material. In addition to being a critical attribute for component traceability, date code is also referred to by EMS partners to determine the age of the component for adherence to Cisco's shelf life policy. For programmable parts, the date code on the label refers to the programming date code

14) **Distributors:** These organizations provide components or services, but, act only as a sales channel for manufacturers. Distributors do not manufacture components of any type, but, source their components directly from manufacturers. Cisco maintains a list of approved distributors for each commodity.
15) **Direct Customer Ship:** Parts that are shipped in the manufacturer's box directly to the end customer without Cisco repackaging or additional Cisco branding.
16) **EMS (Electronic Manufacturing Service):** An electronic assembly manufacturing company that provides PCBA assembly and test services for Cisco. For purposes of this specification, this is the same as CM (Contract Manufacturer).
17) **Fabrication Lot:** An alphanumeric number assigned to a grouping of Raw Materials and used for tracking purposes during construction or manufacturing of a component. Also known as "Manufacturing Lot".
18) **G-Hub:** Global Hub, one specific type of VMI Hub operated by Cisco's Supply Chain.
19) **Hub:** The organization or organizations that provide purchasing services, inventory services (quick turn and standard) and drop shipment of purchased components. Cisco maintains different hubs to serve different purposes within the Supply Chain including Memory, Programming, Strategic, and Last Time Buy Hubs.
20) **Inner Carton:** A box directly containing product. The inner carton may withstand handling within a warehouse and short hauls (i.e. moves from VMI Hub to the Manufacturing Partner site). Inner cartons are placed within a shipping box for longer duration shipments.
21) **Lot Code or Number:** Same as Manufacturing Lot Number or Code
22) **Manufacturing Lot Number or Code:** A lot number or code is a unique alphanumeric string that denotes the identification of material being manufactured together as a single group. Lot code structure varies from commodity to commodity. Lot Codes can be created for various stages, i.e. Fabrication, Wafer Fabrication, Assembly, Raw Material, etc.
23) **Manufacturer Part Number (MPN):** This is the unique part number for a component or sub-assembly assigned and controlled by the component manufacturer. MPN is used for both the product identification and product ordering.
24) **Manufacturer:** The organization that last performed a product transforming operation. A manufacturer can be a supplier, a CM or a Hub.
25) **Manufacturing Partner:** A Manufacturing Partner may be an EMS Partner or a Programming Hub (or equivalent), if the Hub provides a service that transforms a component from one class code to another.
26) **ODM (Original Design and Manufacture)/JDM (Joint Development and Manufacture):** A Cisco marketable product designed in collaboration with an external supplier. Cisco retains part, or all, of the IP. The supplier retains BOM and AML control, Cisco may have manufacturing rights for the product.
27) **OEM (Original Equipment Manufacturer) Product**: A supplier designed and manufactured product which the supplier may sell to other customers. Supplier owns the IP (Intellectual Property), AML (Supply Chain), BOM (Bill of Materials), manufacturing processes and product testing.

28) **Over-Pack Label**: This label applies directly to a larger shipping box containing other, smaller shipping boxes. The purpose of this over-pack label is to offer consolidation of smaller boxes shipping to the same destination. The over-pack label shall clearly state "Over Pack".
29) **Programming Batch or Lot Number (Code):** A traceability number (code) assigned to a specific group of components by the Programming Supplier to be programmed at one location (potentially on more than one programming machine) and done consecutively without interruption.
30) **Programming Supplier:** An organization that only provides the service of insertion (programming) and verification of software code into non-volatile memory or programmable logic devices (PLD). Adds value to flash memory devices or programmable logic devices (PLD) by programming per Cisco requirements and supplying directly to Cisco and its CMs. In these cases, 16- class code components (un-programmed) are transformed to 17- class code components (programmed). There is no formal method of assigning a Manufacturer Part Number (MPN) for this process. The 17-class code CPN is commonly used as the orderable MPN.
31) **Purchase Order (PO):** The documentation that identifies the part number, quantity, shipping instructions and other terms of purchase.
32) **Raw Part Number:** For programmed parts only. The initial Cisco part number (usually class code 16) used to create the programmed part (class code 17).
33) **RoHS (Reduction of Hazardous Substances) Marks:** See point 10 for Cisco RoHS specification.
34) **Secure Devices:** Specific commodity with unique requirements as defined by Cisco.
35) **Serialized Components:** Individual components or assemblies with a unique serial number assigned by its manufacturer for identification or tracking purposes.
36) **Ship from Address:** The origin address of the shipper.
37) **Ship to Address:** The destination address of the recipient of a shipment.
38) **Shipping Box:** The final container or box that is sufficiently strong to be used for packing, storing or transporting products.
39) **Shipping Box Label:** Applies to both inner cartons and shipping boxes. This label is sufficient for shipping. It also communicates to the VMI Hub whether or not the shipping box is at its lowest level or can be broken down further. If it is NOT at its lowest level, it will contain a text field which says “Contains Inner Cartons”. This text field communicates to warehouse personnel within the VMI Hub that they may open the shipping box and handle/receive in at the inner carton level.
40) **Standard Operating Procedure:** A document or set of documents that define how an operational step is performed.
41) **Sub Assembly:** Any unit that consists of more than one component and serves a specific function (i.e.: module, power supply, etc.).
42) **Supplier:** The organization that receives and fulfills the purchase orders from customers for the supply of components and/or sub assembly. A supplier may be a component manufacturer, a value add intermediate party such as a flash memory

programming supplier, a distributor, or an EMS Partner. For the purpose of clarification, a supplier is sometimes referred to as a "vendor."

43) Supplier Part Number: This is a unique part number assigned by one of Cisco's Manufacturing Partners to identify a component either purchased in bulk by the Manufacturing Partner, being transferred from the stock of one Manufacturing Partner to another, or to be used by the Programming Hubs (pHub) to identify the Raw Part Number used for programming.

44) Traceability Code: The data or data set that would allow the identification and/or discovery of a single component's and/or sub assembly's full manufacturing information. Identify the processes, materials, measurement(s), operators, equipment, method, and environment (but, not limited to these data).

45) Traceability Data: Any information related to the creation, manufacturing, assembly, testing, marking and shipment of an individual component. Examples of traceability are test lot traveler, operator ID numbers, fabrication traveler, raw material logs, equipment ID numbers, etc.

46) Unit Product Package: The first tie, wrap or container of a single part number (i.e. tape and reel, tray, bag, etc.). A unit product package can be an item packaged singly or a standardized quantity of units.

47) VMI Hub: Vendor Managed Inventory Hub is a lean inventory management approach used by Cisco in its supply chain. Also refer Hub.

Appendix D: Reference Documents

1. **Cisco EDCS 493962** "RoHS Packaging and Part Marking Policy".
2. **Cisco EDCS 561395** "Product Compliance Marking Specification for Chinese Management Methods for Controlling Pollution by Electronic Information Products (aka China RoHS)"
3. **Cisco EDCS 651800** "Memory Module/Card Traceability".
4. **Cisco EDCS 597698** "Memory Module Label Specification".
5. **Cisco EDCS 226406** "Product Change Notification Process (PCN)"
6. **Cisco 95-0650-01** "General Fabrication Specification Rigid Printed Circuit Boards"
7. **Cisco 95-1766-01** "SPEC,LBL,GLOBAL,SN BARCODE,MECH/PCBA" – Provides Cisco format for unique serial numbers.
8. **Cisco 95-1728-01** "SPEC, COUNTRY OF ORIGIN LABEL" – Provides additional requirements for Country of Origin labeling and references ISO 3166 for standard country abbreviations to be used in the label barcode.
9. **ANSI MH10.8.2-2010** "Data Identifier and Application Identifier Standard"
10. **CEA-556-C** Outer Shipping Container Label Standard
11. **EIA-476B** "Date Code Marking," maintained by the Electronic Components Industry Association – Establishes a four-digit Date Code format in accordance with MIL-STD-1285D (Section 5.2.5 of November 2010 release).
12. **JEDEC JEP130A** "Guidelines for Packing and Labeling of Integrated Circuits in Unit Container Packing (Tubes, Trays and Tape and Reel)" – Contains guidance on trace mix limits similar to the Cisco guidelines in Appendix B.