Regulatory Compliance

This chapter lists customer, industry, and government requirements met by the Cisco ONS 15454 M2, Cisco ONS 15454 M6, Cisco ONS 15454, Cisco ONS 15454 SDH, Cisco ONS 15216, Cisco ONS 15327, Cisco ONS 15600, Cisco ONS 15600 SDH, Cisco ONS 15310-CL, and Cisco ONS 15310-MA.

Homologation

This section lists the different optical platforms and the countries for which they are currently approved (Table 1-1).

Table 1-1 Platform Approvals

Platform	Countries
ONS 15454 M2, ONS 15454 M6	Canada, USA, EU, Mexico, Japan (in progress), Republic of Korea (in progress), Hong Kong (in progress), Taiwan (in progress)
ONS 15454	Canada, USA, EU, Mexico, Japan (in progress), Republic of Korea (in progress), Hong Kong (in progress), Taiwan (in progress)
ONS 15454 SDH	Canada, USA, EU, Mexico, Republic of Korea (in progress), Japan
ONS 15600 and ONS 15600 SDH	Belarus, Kazakhstan, Republic of Korea, Mexico, Taiwan, USA, Canada, EU
ONS 15310-CL and ONS 15310-MA	Canada, USA, EU, Japan, Hong Kong (no approval required), Taiwan (no approval required)
ONS 15327	Canada, USA, Japan, Mexico

Standards

This section provides standards information for the following platforms:

Note The standards listed in this document do not specify the revision, issue, and date. This information can be found in the specific test reports, which varies for different products, depending on the test dates.

ONS 15454 M2 and ONS 15454 M6

The ONS 15454 M2 and ONS 15454 M6 meets NEBS Level 3 (SR3580) for use by service providers in a Local Exchange Carrier (LEC) network environment. The ONS 15454 M2 and ONS 15454 M6 meets the following standards:

- ETS 300 019-2-1 (Storage, Class 1.1)
- ETS 300 019-2-2 (Transportation, Class 2.3)
- ETS 300 019-2-3 (Operational, Class 3.1E)

The standards in Table 1-2 apply to the ONS 15454 M2 and ONS 15454 M6.

Table 1-2 ONS 15454 M2 and ONS 15454 M6 Standards

Discipline	Specification
EMC	NEBS Telcordia GR-1089-CORE
	47 CFR Part 15 (Class A)
	CISPR22
	EN55022 (Class A)
	EN300386
	ICES-003 (Class A)
	KN 22 (Class A)
	VCCI (Class A)
	CISPR24
	EN55024
	IEC 61000-6-1
	EN61000-6-1
	IEC61000-6-2
	EN61000-6-2
	EN61000-3-2
	EN61000-3-3

Table 1-2 ONS 15454 M2 and ONS 15454 M6 Standards (continued)

Discipline	Specification
Product Safety	NEBS GR-1089-CORE IEC 60950-1 /EN 60950-1, 2nd Ed. (CB Report / Certificate with all country deviations) UL and cUL / CSA 60950-1 2nd Ed.
Laser Safety	IEC 60950-1 /EN 60950-1, 2nd Ed. 21CFR1040 IEC 60825-1, 2007 IEC 60825-2, 2010
Telecommunications	T1: Canada (CS-03), Hong Kong (HKTA 2028), Japan (JATE Green Book), Taiwan (ID 0002), US (TIA-968), Malaysia (TIA-968)
Environmental	Telcordia GR-63-CORE NEBS ETS 300 019-2-1 (Storage, Class 1.1) ETS 300 019-2-2 (Transportation, Class 2.3) ETS 300 019-2-3 (Operational, Class 3.1E)
Structural Dynamics (Mechanical)	Telcordia GR-63-CORE NEBS AT&T Network Equipment Development Standards (NEDS)
Power & Grounding	SBC Local Exchange Carriers, Network Equipment Power, Grounding, Environmental, and Physical Design Requirements, TP76200MP

ONS 15454

The ONS 15454 meets NEBS Level 3 (SR3580) for use by service providers in a Local Exchange Carrier (LEC) network environment. The ONS 15454 meets the following standards:

- ETS 300 019-2-1 (Storage, Class 1.1)
- ETS 300 019-2-2 (Transportation, Class 2.3)
- ETS 300 019-2-3 (Operational, Class 3.1E)

The standards in Table 1-3 apply to the ONS 15454.

Table 1-3 ONS 15454 Standards

Discipline	Specification
EMC (Class A)	NEBS Telcordia GR-1089-CORE 47 CFR Part 15 (Class A) CISPR22 EN55022 (Class A) EN300386 ICES-003 (Class A) KN 22 (Class A) VCCI (Class A) CISPR24 EN55024 IEC 61000-6-1 EN61000-6-1 IEC61000-6-2 EN61000-6-2 EN61000-3-2 EN61000-3-3
Product Safety	NEBS GR-1089-CORE IEC 60950-1 /EN 60950-1, 2nd Ed. (CB Report / Certificate with all country deviations) UL and cUL / CSA 60950-1 2nd Ed.
Laser Safety	IEC 60950-1 /EN 60950-1, 2nd Ed. 21CFR1040 IEC 60825-1 IEC 60825-2
Telecommunications	T1: Canada (CS-03), Hong Kong (HKTA 2028), Japan (JATE Green Book), Taiwan (ID 0002), US (TIA-968), Malaysia (TIA-968)
Environmental	NEBS Telcordia GR-63-CORE ETS 300 019-2-1 (Storage, Class 1.1) ETS 300 019-2-2 (Transportation, Class 2.3) ETS 300 019-2-3 (Operational, Class 3.1E)
Structural Dynamics (Mechanical)	Telcordia GR-63-CORE NEBS AT&T Network Equipment Development Standards (NEDS)
Power & Grounding	SBC Local Exchange Carriers, Network Equipment Power, Grounding, Environmental, and Physical Design Requirements, TP76200MP

ONS 15454 SDH

Table 1-4 lists the regulatory compliance and safety approval requirements met by the ONS 15454 SDH.

Table 1-4 ONS 15454 SDH Standards

Discipline	Specification
EMC (Class A)	NEBS Telcordia GR-1089-CORE 47 CFR Part 15 CISPR22 EN55022 (Class A) EN300386 ICES-003 (Class A) KN 22 (Class A) VCCI (Class A) CISPR24 EN55024 IEC 61000-6-1 EN61000-6-1 IEC61000-6-2 EN61000-6-2 EN61000-3-2 EN61000-3-3
Product Safety	IEC 60950-1 /EN 60950-1, 2nd Ed. (CB Report/Certificate with all country deviations) UL / CSA 60950-1 1st Ed.
Laser Safety	IEC 60950-1 /EN 60950-1, 2nd Ed. UL / CSA 60950-1 21CFR1040 EN or IEC 60825-1 EN or IEC 60825-2

Table 1-4 ONS 15454 SDH Standards (continued)

Discipline	Specification
Telecommunications	T1: Canada (CS-03), Hong Kong (HKTA 2028), Japan (JATE Green Book), Taiwan (ID 0002), US (TIA-968), Malaysia (TIA-968)
	T3: Japan (JATE Green Book), Malaysia (ITU-T G.703)
	E1: Australia (S016), EU (TBR 12, TBR 13)
	E3: Australia (S016), EU (TBR 24)
	STM-1E: EU (ITU-T G.703)
	GigE (optical): Japan (JATE Green Book)
	OC-3, 12, 48, 192: Telcordia GR-253
	STM-1, 4, 16: Brazil (225-100-509), EU (ITU-T G.707, ITU-T G.825, ITU-T G.957), Japan (JATE Green Book)
	STM-64: Brazil (ITU-T G.691, ITU-T G.707, ITU-T G.825), Japan (JATE Technical Requirement)
Environmental	ETS 300 019-2-1 (Storage, Class 1.1) ETS 300 019-2-2 (Transportation, Class 2.3) ETS 300 019-2-3 (Operational, Class 3.1E)
Power & Grounding	SBC Local Exchange Carriers, Network Equipment Power, Grounding, Environmental, and Physical Design Requirements, TP76200MP

ONS 15216

The ONS 15216 series products meet the following regulatory compliance and safety approval requirements:

- EMC (Class A)—NEBS Telcordia GR-1089-CORE
- Product Safety—UL60950-1 IEC 60950-1 2nd Ed
- Environmental—Telcordia GR-63-CORE NEBS

ONS 15310-CL and ONS 15310-MA

The ONS 15310-MA is Telcordia GR-3108-CORE (Class 2) compliant when enclosed in a Telcordia GR-487-CORE compliant cabinet. The ONS 15310-MA is Class A emissions compliant as described in FCC part 15 and Telcordia GR-1089-CORE (sec.3.1.3).

The ONS 15310-MA requires an operating environment that maintains a temperature between -40 degrees Celsius and 65 degrees Celsius.

The ONS 15310-MA network equipment ports are classified as Type 2 and Type 4 ports as described in Telcordia GR-1089-CORE when installed indoors. For example, central office.

DS1 ports are classified as Type 5 ports as described in GR-1089-CORE when the ONS 15310-MA is installed in the OSP (outside plant). The ONS 15310-MA EIAs and the OSP cabinet are equipped with primary and secondary protections. In addition, isolation transformers are also provided.

Table 1-5 lists the regulatory compliance and safety approval requirements met by the ONS 15310-CL and ONS 15310-MA.

Table 1-5 ONS 15310-CL and ONS 15310-MA Standards

Discipline	Specification
EMC (Class A)	EN-300-386
	NEBS GR-1089-CORE
	CISPR 22, CISPR24
	ICES-003
	FCC 47CFR15
	EN55022, EN55024
	EN61000-3-2, EN61000-3-3 (AC products)
	EN61000-6-1
	VCCI (Japan)
Product Safety	NEBS GR-1089-CORE (Level 3, Type 2, Type 4, and Type 5 for OSP installations)
	IEC 60950-1 /EN 60950-1, 2nd Ed. (CB Report / Certificate with all country deviations)
	UL and cUL / CSA 60950-1 2nd Ed.
Laser Safety	IEC 60950-1 /EN 60950-1, 2nd Ed.
	21CFR1040
	EN or IEC 60825-1
	EN or IEC 60825-2
Telecommunications	T1: Canada (CS-03), Hong Kong (HKTA 2028), Japan (JATE Green Book), Taiwan (ID 0002), US (TIA-968), Malaysia (TIA-968)
	T3: Japan (JATE Green Book), Malaysia (ITU-T G.703)
	E1: Australia (S016), EU (TBR 12, TBR 13)
	E3: Australia (S016), EU (TBR 24)
	STM-1E: EU (ITU-T G.703)
	GigE (optical): Japan (JATE Green Book)
	OC-3, 12, 48, 192: Telcordia GR-253
	STM-1, 4, 16: Brazil (225-100-509), EU (ITU-T G.707, ITU-T G.825, ITU-T G.957), Japan (JATE Green Book)
	STM-64: Brazil (ITU-T G.691, ITU-T G.707, ITU-T G.825), Japan (JATE Technical Requirement)
Environmental	Telcordia GR-63-CORE NEBS
	GR-3108 (OSP installation, Class 2)
	GR- 487 (OSP installation)
	ETS 300 019-2-1 (Storage, Class 1.1)
	ETS 300 019-2-2 (Transportation, Class 2.3)
	ETS 300 019-2-3 (Operational, Class 3.1E)

Table 1-5 ONS 15310-CL and ONS 15310-MA Standards

Discipline	Specification
Structural Dynamics (Mechanical)	Telcordia GR-63-CORE NEBS GR-3108 (OSP installation, Class 2) GR- 487 (OSP installation) AT&T Network Equipment Development Standards (NEDS)
Power & Grounding	SBC Local Exchange Carriers, Network Equipment Power, Grounding, Environmental, and Physical Design Requirements, TP76200MP

ONS 15310-MA OSP Statements

This section provides standards information for the ONS 15310-MA OSP installation.

1. The 15310-MA can be installed in OSP with a sealed/weatherproof and GR-487-CORE compliant OSP cabinet.
2. 2. The 15310-MA is tested and qualified to OSP requirements and WW EMC with the following OSP cabinet and accessories:
   - 15310-(E)-MA-SA(=)
   - 15310-MA-FTA(=)
   - 15310-EIA-HD-A(=)
   - 15310-EIA-HD-B(=)
   - 15310E-EIA-HDA(=)
   - 15310E-EIA-HDB(=)
   - 15310(E)-28WBE-3BBE(=)
   - 15310(E)-84WBE-3BBE(=)
   - 15310-CE-MR-6(=)
   - 15310-CTX-2500-K9(=)
   - 15310E-CTX-K9(=)
3. Purcell FLX25GT GR-487 compliant outdoor enclosure includes:
   - Purcell 25RU FLX25GT Equipment Bay
   - 25RU Blank Equipment Bay Door
   - Battery Bracket Kit
   - GT 14” Battery Pedestal
   - 25RU GT 16” PMTM – w/Battery Pedestal
   - 8 Position AC Load Center w/ TVSS (Transient Voltage Suppression Module for AC power) PN #AC2050M-07 (NEBS and WW)
   - AC load center (Europe and WW) – PN MCD-01-950-01 w/ Surge Srrestors DEHNguard T275, DEHNgap TC255
   - 25RU GT Solar Shield- with 14” Battery pedestal
   - Heat Exchanger 80W/C (1539 watts-GR-487) (Rear door)

- GT Anchor Plate – 1EB + 16” PMTM Left
- DS1 100-Pair Protector Blocks e/w 710 connectors PN #6659 1 105-00/06A
- ADC CPAUS240A1 DS1 Protectors
- ADC DS1 Cross-connect block – Per-Term Assy. NT 28-ckt PN #6634 1 971-07
- ADC DS3 Protector Module Mounting Panels – P3C-175002
- ADC DS3 Protector Modules – P3M-PB2001
- ADC 23” 84 position DSX-1 panel – DI-G2CU1
- 4ft. F/M 32 Pair (Champ) Amp Extension cables
- Hubbell Gen Plug and Cover (60A)
- Valere Power Plant e/w: 3-20Amp Rectifiers, AC Cords, Controller, Temp. Probe and Alarm Cable – Shelf CD8D-ANN-VC
- Cylix DS1 Secondary Protection Module #050-612-00 (NEBS)
- ADC DI-M3GU1 Front cross connect 84 ckt, Cisco WW & 64 AMP DSX-1
- PCI Alarm Panel for 15310 and cable
- 8-hour Battery Backup NorthStar NSB 170FT
- DS1 Cables from 15310 to DS1 Secondary Protector Module – HRC-2835-005
- DS1 Cables from DS1 Secondary Protector Module to Primary Protector Module – HRC 2835-006
- OSP DS1 50-pins/25-pair cables with 3M “710” connectors – HRC-2840-030: shielded cables with shield ground-terminated both ends
- Steward ferrites PN 28B2000-100 applied to OSP DS1 cables (2 turns) on the cabinet unshielded section
- Flat copper braids 1 inch wide (Tested braids are Consolidated (Electronic Wire and Cable) Flat Tinned Copper Braid part# 1398, see www.conwire.com) for grounding the OSP cabinet, bonding of different cabinet sections, and grounding the ONS 15310-MA chassis.
- 50ft. DS3 BNC-BNC cables
- 3ft. DS3 BNC-BNC (15310 to DS3 Secondary Protection Module)
- 3ft. DS3 BNC-BNC (DS3 Secondary Protection Module to DS3 non-prot. x-conn. Block)

4. NEBS compliance covers FCC and other WW EMC requirements (based on CISPR22 and IEC 61000-4-2 to12 standards).
5. To install the 15310-MA in the OSP with a different cabinet in compliance with NEBS, the cabinet must be GR-487 compliant. In this case, the complete system must be tested to NEBS requirements. The following minimum set of accessories must be installed:
   - DS1 primary and secondary surge protection modules.
6. To install the 15310-MA in the OSP with a different cabinet in safety compliance with UL 60950-1, the following accessories must be installed:
   - secondary surge protection module (including insulation transformer rated 1500 Vac rms) Cylix PN PCI 050-628-02 and DS1 Prymary protection modules.
   - secondary surge protection module (including insulation transformer rated 1500 Vac rms) Cylix PN PCI 050-631-01 and DS3 primary protection modules.

7. To install the 15310-MA in the OSP with a different cabinet, which does not require NEBS compliance, and if FCC and or other WW EMC requirements must be covered, the following primary surge protection modules must be installed:
   - DS1
   - DS3

Caution To reduce the risk of fire, use only No. 26 AWG or larger (e.g., 24 AWG) UL Listed or CSA Certified Telecommunication Line Cord.

8. The 15310E-MA OSP is tested and qualified to the weather-protected locations environmental requirements of the EN300-019-1-3 and EN300-019-2-3 (Class 3.3).
9. The following additional conditions and configurations are required to comply with IEC/UL 60950-1:
   - This product is a modular optical shelf product intended for use in Restricted Access Locations. This product must include an optical shelf, secondary isolation and protectors for DS1/E1 ports, and secondary isolation and protectors for DS3/E3 ports.
   - The product is intended for use on the following power systems: DC mains supply
   - The equipment disconnect device and short circuit overcurrent protection devices used in the cabinet must be UL Listed and IEC Certified.
   - The following ports can be connected only to SELV Circuits/ports: LAN, Craft, UDC, BITS, Alarm Out, and Alarm Min.
   - To reduce the risk of fire, use only No. 26 AWG or larger (e.g., 24 AWG) UL Listed or CSA Certified Telecommunication Line Cord for DS1/E1 and DS3/E3 ports.
   - A suitable outdoor enclosure shall be provided with the end product. The enclosure shall be suitable as a fire, mechanical, and electrical enclosure.
   - Consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer. If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be higher.
   - Model 15130-MA OSP is intended for installation in an enclosure. The inside of which is only accessible by a service person.
   - This product and components provide protective earth terminals to be connected to the end product enclosure. The end product shall conduct Earthing test.
   - This product was evaluated for DC Mains input. Transient overvoltage shall be considered at the end product if unit is powered by other means.

ONS 15327

This section lists the regulatory compliance and safety approval requirements met by the ONS 15327.

Table 1-6 ONS 15327 Standards

Discipline	Specification
EMC (Class A)	EN-300-386
	NEBS GR-1089-CORE
	CISPR 22, CISPR24
	ICES-003
	FCC 47CFR15
	EN55022, EN55024
	EN61000-3-2, EN61000-3-3 (AC products)
	EN61000-6-1
	VCCI (Japan)
Product Safety	NEBS GR-1089-CORE
	IEC 60950-1 /EN 60950-1, 2nd Ed. (CB Report / Certificate with all country deviations)
	UL and cUL / CSA 60950-1 2nd Ed.
Laser Safety	IEC 60950-1 /EN 60950-1, 2nd Ed.
	21CFR1040
	EN or IEC 60825-1
	EN or IEC 60825-2
Telecommunications	T1: Canada (CS-03), Hong Kong (HKTA 2028), Japan (JATE Green Book), Taiwan (ID 0002), US (TIA-968), Malaysia (TIA-968)
	T3: Japan (JATE Green Book), Malaysia (ITU-T G.703)
	E1: Australia (S016), EU (TBR 12, TBR 13)
	E3: Australia (S016), EU (TBR 24)
	STM-1E: EU (ITU-T G.703)
	GigE (optical): Japan (JATE Green Book)
	OC-3, 12, 48, 192: Telcordia GR-253
	STM-1, 4, 16: Brazil (225-100-509), EU (ITU-T G.707, ITU-T G.825, ITU-T G.957), Japan (JATE Green Book)
	STM-64: Brazil (ITU-T G.691, ITU-T G.707, ITU-T G.825), Japan (JATE Technical Requirement)
Environmental	NEBS Telcordia GR-63-CORE
	EN 300 019-2-1 (Storage, Class 1.1)
	EN 300 019-2-2 (Transportation, Class 2.3)
	EN 300 019-2-3 (Operational, Class 3.1E)
	EN 300 019-1-3, EN 300 019-2-3 (Class 3.3)
	EN 300 019-2-4 (Class T 4.2 H and 4M5)

Table 1-6 ONS 15327 Standards (continued)

Discipline	Specification
Structural Dynamics (Mechanical)	Telcordia GR-63-CORE NEBS AT&T Network Equipment Development Standards (NEDS)
Power & Grounding	SBC Local Exchange Carriers, Network Equipment Power, Grounding, Environmental, and Physical Design Requirements, TP76200MP

ONS 15600 and ONS 15600 SDH

Table 1-7 lists the regulatory compliance and safety approval requirements met by the ONS 15600 and ONS 15600 SDH.

Table 1-7 ONS 15600 and ONS 15600 SDH Standards

Discipline	Specification
EMC (Class A)	EN-300-386 NEBS GR-1089-CORE CISPR 22, CISPR24 ICES-003 FCC 47CFR15 EN55022, EN55024 EN61000-3-2, EN61000-3-3 (AC products) EN61000-6-1 VCCI (Japan)
Product Safety	NEBS GR-1089-CORE IEC 60950-1 /EN 60950-1, 2nd Ed. (CB Report / Certificate with all country deviations) UL / CSA 60950-1 1st Ed.
Laser Safety	IEC 60950-1 /EN 60950-1, 2nd Ed. UL / CSA 60950-1 21CFR1040 EN or IEC 60825-1 EN or IEC 60825-2

Table 1-7 ONS 15600 and ONS 15600 SDH Standards (continued)

Discipline	Specification
Telecommunications	T1: Canada (CS-03), Hong Kong (HKTA 2028), Japan (JATE Green Book), Taiwan (ID 0002), US (TIA-968), Malaysia (TIA-968)
	T3: Japan (JATE Green Book), Malaysia (ITU-T G.703)
	E1: Australia (S016), EU (TBR 12, TBR 13)
	E3: Australia (S016), EU (TBR 24)
	STM-1E: EU (ITU-T G.703)
	GigE (optical): Japan (JATE Green Book)
	OC-3, 12, 48, 192: Telcordia GR-253
	STM-1, 4, 16: Brazil (225-100-509), EU (ITU-T G.707, ITU-T G.825, ITU-T G.957), Japan (JATE Green Book)
	STM-64: Brazil (ITU-T G.691, ITU-T G.707, ITU-T G.825), Japan (JATE Technical Requirement)
Environmental	Telcordia GR-63-CORE NEBS
	EN 300 019-2-1 (Storage, Class 1.1)
	EN 300 019-2-2 (Transportation, Class 2.3)
	EN 300 019-2-3 (Operational, Class 3.1E)
	EN 300 019-1-3 and EN 300 019- 2-3 (Class 3.3)
	EN 300 019-1-4 and EN 300 019- 2-4 (Class T 4.2H , M5)
Structural Dynamics (Mechanical)	Telcordia GR-63-CORE NEBS
	AT&T Network Equipment Development Standards (NEDS)
Power & Grounding	SBC Local Exchange Carriers, Network Equipment Power, Grounding, Environmental, and Physical Design Requirements, TP76200MP

Japanese Approvals for the ONS 15454

Table 1-8 lists the ONS 15454 card approvals for Japan.

Table 1-8 ONS 15454 Card Approvals

Card	Certificate Number
15454-DS1-14	L02-0014
15454-DS3E-12	L02-0013
DS3N-12	L00-0285
15454-OC3-4IR 1310	L00-0265
15454-OC12IR 1310	L00-0266
15454-OC12-4 IR	D02-0423JP
15454-OC48IR 1310	L00-0267

Table 1-8 ONS 15454 Card Approvals (continued)

Card	Certificate Number
15454-OC48IR 1310AS	L02-0012
15454-G1000-4	D02-0642JP

Japanese Approvals for the ONS 15327

Table 1-9 lists the ONS 15327 card approvals for Japan.

Table 1-9 ONS 15327 Card Approvals

Card	Certificate Number
MIC-28-3-A/B	L01-0055
OC12 IR 1310	L01-0052
OC48 IR 1310	L01-0053

Japanese Labels for the ONS 15454

The following ONS 15454 labels are authorized for use in Japan.

Figure 1-1 Japan Label (ONS 15454)

Figure 1-2 Electrical Card 15454-DS1-14

Figure 1-3 Electrical Card 15454-DS3E-12

Figure 1-4 Electrical Card 15454-DS3N-12

Figure 1-5 Optical Card 15454-OC3-4IR1310

Figure 1-6 Optical Card 15454-OC12IR1310

Figure 1-7 Optical Card 15454-OC12-4IR

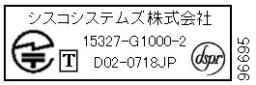


Figure 1-8 Optical Card 15454-OC48IR1310

Figure 1-9 Optical Card 15454-OC48IR1310AS

Japanese Labels for the ONS 15327

The following ONS 15327 labels are authorized for use in Japan.

Figure 1-10 Ethernet Card ONS 15454

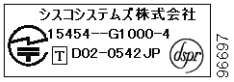


Figure 1-11 Optical Card OC3 IR 4 1310

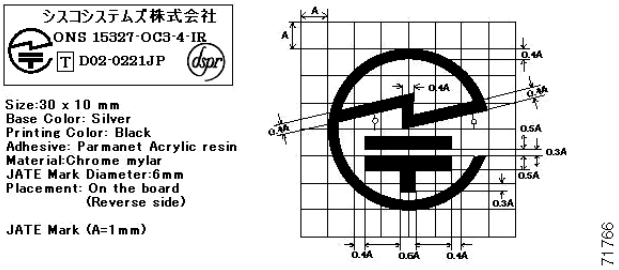


Figure 1-12 Optical Card OC12 IR 1310

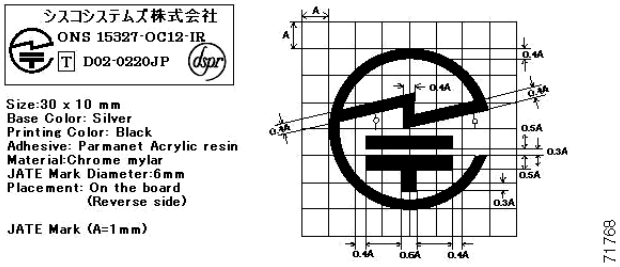


Figure 1-13 Optical Card OC12 LR 1550

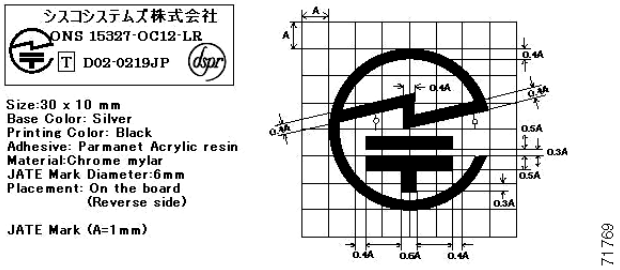


Figure 1-14 Optical Card OC48 IR 1310

Figure 1-15 Optical Card OC48 LR 1550

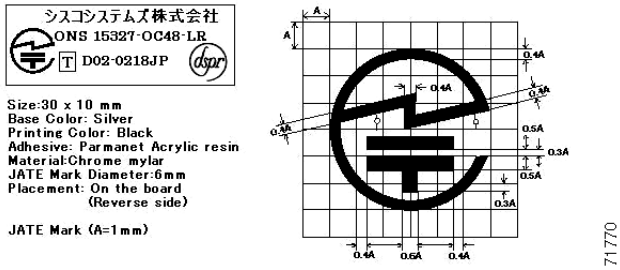


Figure 1-16 Gigabit Ethernet Card G1000-2

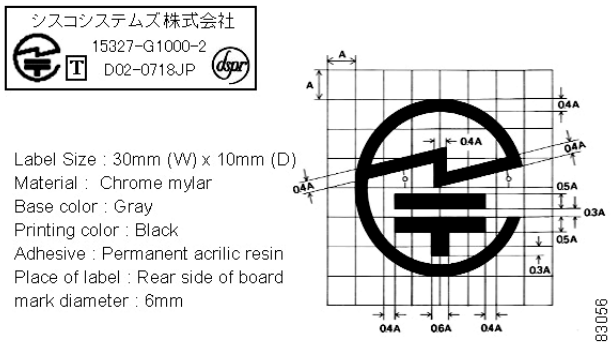


Figure 1-17 Mechanical Interface Card (MIC) (DS-1, DS-3) MIC-28-3-A/B

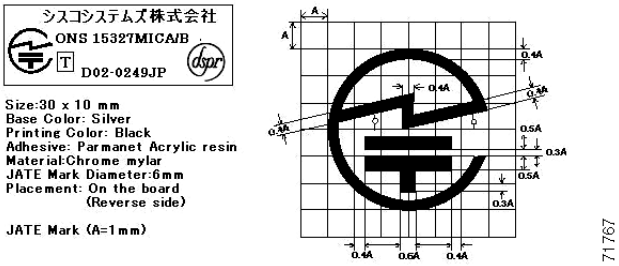
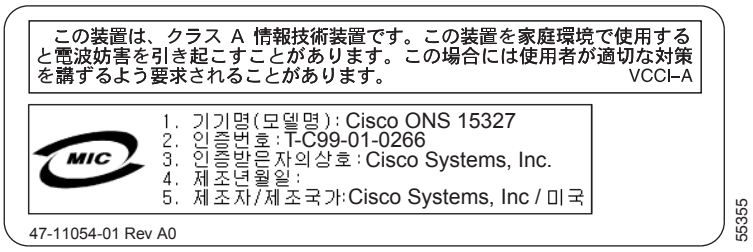


Figure 1-18 Japanese Label (ONS 15327)



Korean Approvals for the ONS 15454

Table 1-10 provides the ONS 15454 approval for Korea.

Table 1-10 Certification of Information and Communication Equipment (ONS 15454)

Model	Certificate Number
ONS 15454	T-C21-00-1434

Korean Approvals for the ONS 15327

Table 1-11 provides the ONS 15327 approvals for Korea.

Table 1-11 Certification of Information and Communication Equipment (ONS 15327)

Model	Certificate Number
ONS 15327	T-C99-01-0266
Cards	
OC12-IR-1310	
OC48-IR-1310	
XTC-14	
MIC-28-3	
E10/100-4	

Korean Labels for the ONS 15454

Figure 1-19 shows the ONS 15454 system label for Korea.

Figure 1-19 Korea Label (ONS 15454)

Korean Labels for the ONS 15327

Figure 1-20 shows the ONS 15327 system label for Korea.

Figure 1-20 Korean Label (ONS 15327)