

Amendment to the Certificate on Classification of the Laser Product Family HFCT-5745xx according to IEC 60825-1:2001 / DIN EN 60825-1:2003

Certification no. 933/21205741/050 from 20/11/2006

Amendment no. 933/21205741/051, date: 04/Dec/2006

Certificate holder:

Avago Technologies Singapore Pte. Ltd.
No 1 YISHUN AVENUE 7
Singapore 768 923
SINGAPORE

The laser product family **HFCT-5745xx** now includes:

part	base part	remark
HFCT-5745AP		
HFCT-5745ATP		
HFCT-5745L/P		
HFCT-5745NL		
HFCT-5745NP		
HFCT-5745TL/TP		
HFCT-5745XXX		
HFCT-5745XXX-YYY		
HFCT-5747L/P/TL/TP		
HFCT-57L5ATP		
HFCT-57L5TP		
HFCT-57M5TP		
AFCT-5745XXX-YYY	HFCT-5745XXX	
AFCT-575XXXX-YYY	³⁾ [3] measured:	7/Nov/2006
AFCT-5746XXX-YYY	AFCT-5745XXX-YYY	-40 - 85 °C
AFCT-57L5ATP	HFCT-57L5ATP	
AFCT-57L5ATP-XXY	AFCT-57L5ATP	EEPROM different
AFCT-57L5XXXZ-XXY	HFCT-57L5ATP	
AFCT-57M5TP	HFCT-57M5TP	
AFCT-57M5TP-xyy	AFCT-57M5TP	EEPROM different
AFCT-57M5XXXZ-XXY	HFCT-57M5TP	
AFCT-57R5XXX-YYY	AFCT-57M5XXX-YYY	
SFCT-5799XXX	AFCT-57R5XXX	customer special
SFCT-57xxATP	AFCT-57L5ATP	
SFCT-57xxxTP	AFCT-57M5TP	
QFCT-5745XX		
QFCT-5762TP	HFCT-5745TP	
QFCT-5766LP	HFCT-57M5TP	
QFCT-5766TP	HFCT-57M5TP	
QFCT-5775P	HFCT-5745P	
QFCT-5775TP	HFCT-5745TP	
QFCT-5776TP	HFCT-57M5TP	
QFCT-5777TP	HFCT-57M5TP	
QFCT-57AAL	HFCT-5745L	

part	base part	remark
QFCT-57AATL	HFCT-5745TL	
QFCT-57AML	HFCT-5745L	
QFCT-57AMTL	HFCT-5745TL	
QFCT-57APAP	HFCT-5745AP	
QFCT-57APATP	HFCT-5745ATP	
QFCT-57APP	HFCT-5745P	
QFCT-57APTP	HFCT-5745TP	
QFCT-57XXAP	HFCT-5745AP	
QFCT-57XXATP	HFCT-57L5ATP	
QFCT-57XXP	HFCT-5745P	
QFCT-57XXTP	HFCT-57L5TP	

³⁾ covering parts like **AFCT-5745AULZ** or **AFCT-5745AUPZ** -40°C ... 85 °C [3]

X can be any alphanumeric characters or blank (e. g. A, L, P, D, ...).

Z is the suffix that indicates that the part is RoHS compliant. There is no alteration of the safety relevant laser part according to the declaration of Agilent¹⁾.

-YYY are special customer order codes; no change to laser assembly or output

Parts added [5]: AFCT-5746XXXX-YYY

X can be any alphanumeric characters or blank (e. g. A, L, P, D, Z; ...).

-YYY are customer special order codes

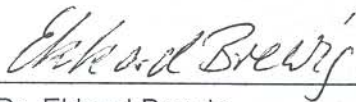
Z if present is the suffix that indicates, that the part is RoHS compliant. There is no alteration of the safety relevant laser part according to the declaration of the certificate holder[5]

The QFCT-57XXXXX family members share the same laser CD header. Customer specials must be described in their documentation. It has to be declared which laser sub-assembly is used (out of certified AVAGO parts).

All of these are 125 Mb/s – 2.7Gb/s Mb/s hot pluggable 125Mb/s - 2.7 Gb/s hot pluggable small form factor optical transceiver modules for long reach SONET OC-48/SDH STM-16 with digital diagnostic monitoring Interface (Part of the Agilent METRAK family). The laser product family remains laser CLASS 1 according to IEC 60825-1:2001 [1] and can be used under laser hazard level 1 conditions according to IEC 60825-2:2005 [2].

Abteilung Immissionsschutz / Lärmschutz

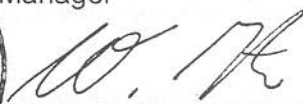
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Dipl.-Ing. Wilhelm Kurtz

Köln, 04/Dec/2006
933/21205741/051

Annex 1: Basics

- [1] **IEC 60825-1 Ed. 1.2:2001-08** „Safety of laser products - part 1: Equipment classification, requirements and user's guide" (DIN EN 60825-1:2001-11 is the German translation of this international standard,
Reference IEC 60825-1:1993+A1:1997+A2:2001)
(The European Standards and their derivatives EN 60825-1:2003 and EN 60825-2:2005 are equivalent to the IEC 60825-1 and IEC 60825-2 mentioned. Therefore the certification is valid also in the sense of the corresponding EN standards.)
- [2] **IEC 60825-2 Ed. 3:2005-07** „ Safety of laser products – Part 2: Safety of optical fibre communication systems (OFCS)" (DIN EN 60825-2:2005 is the German translation)
- [3] **TÜV Certificate** "Certificate on Classification of the Laser Product Family HFCT-5745xx according to IEC 60825-1:2001 / DIN EN 60825-1:2003", no. 933/21205741/050 from 20/Nov/2006 including measurements down to -40°C for parts like AFCT-5745AUPZ
- [4] **Preliminary data sheet: AFCT-5746Z** Family of Single-Mode SFP Transceivers for SONET OC-48 and SDH/STM-16 with Digital Diagnostic Monitoring (DDM) Interface. Part of the Avago METRAK family, 2488 Mb/s, issue AV01-0448EN - September 7, 2006 with alterations
- [5] **Avago's declarations**, by email from 30/Nov/2006 no 2) (adding AFCT-594XXXXX-YYY)