

APP Certificate of Compliance

Doc # : ALMA-05.11.00.06-0001-A-GEN

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ALMA Phasing Project

Certificate of Compliance

ALMA-05.11.00.06-0001-A-GEN 2014-Dec-02

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Change Record

Revision	Date	Affected Paragraphs(s)	Reason/Initiation/Remarks
A.01	2014-Dec-2	All	Initial draft



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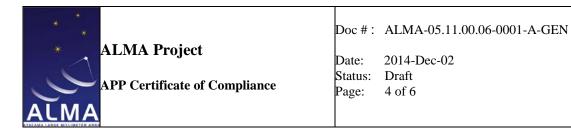
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1.0 GENERAL

1.1. Purpose and Scope

This information previously appeared in Table 3 of safety document RD-01 as a convenient place for presentation during design reviews. This Certificate supersedes the table 3 information in RD-01.

1.2. Applicable Documents

Table 1: Applicable Documents

Reference	Document Title	ALMA Doc. Number
	none	

1.3. Reference Documents

Table 2: Reference Documents

Reference	Document Title	ALMA Doc. Number
[RD-01]	APP Hazard Analysis and Safety Compliance Plan	ALMA-05.11.10.01-0003-A-PLA

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2.0 CERTIFICATIONS

2.1. APP Custom Supplied Equipment

Most of the equipment supplied to ALMA by the APP was produced commercially. Integration of the commercial equipment required printed circuit board fabrication and custom wiring in racks and sub-assemblies. APP partners applied best practices for engineering and safety established within their own institutions. Printed circuit board assemblies were fabricated to IPC-A-610 specifications. Wiring in racks and subassemblies was performed according to best practices established under ALMA; much of which was done progressively on site, available for ALMA review and inspection.

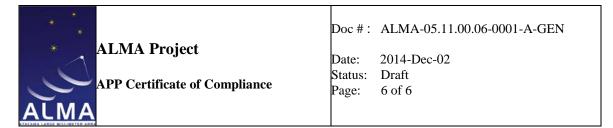
2.2. APP Vendor Supplied Equipment

The following table lists certifications for purchased equipment.

Item	Certifications
T4 Science	CE EN 55022-B (Radiated and conducted EMI)
I3000 Maser	CE EN 55024 (Information)
	CE EN 61326-1 (Equipment for measurement,
	control, lab use)
Xytronix Research X-DAQ-2R1-	FCC 47CFR15 Class B, IEC CISPR 22, CISPR
4T-E, web enabled temperature	24 (EMC), EN55024, EN55022 (EU EMC)
monitor (Proposed)	Safety IEC 60950-1 / EN 60950-1
Eaton-Pulizzi TPC2365/MTD	TUV Rheinland (C US) of NA, CE, RoHS
intelligent power strip (Proposed)	2002/95/CE
Western Digital	Canada ICES-003 Class B / NMB-003 Class B
Black & Blue Disk Drives	(EMC)
	CE (directives unspecified in data sheet)
	RoHS Directive 2011/65/EU
Cosel PBA10F Power Supply in	UL "Recognized Component"
XW-100 Optical chassis	FCC Part15 classB
	CE EN55022-B, EN55011-B (Radiated and
	conducted EMI)
	Japan VCCI-B (Radiated and conducted EMI)
	UL60950-1, C-UL(CSA60950-1), EN60950-1,

Table 3 Certifications of Suppliers

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	ENICO170 Committee mittee DENLAN
	EN50178 Complies with DEN-AN
San Ace 80, fan in XW-100 Optical	Flammability: UL94V-0 (frame), UL94V-1
chassis	(impeller)
	UL "Recognized Component", UL Certified
	RoHS 2002/95/EC
	CSA Certification
	TUV EN 61058-1, for low voltage appliances
Sumitomo 10GB-SR SXP3100SX	CL 1 Laser Compliant per FDA, EN (IEC) 60825
optical transceiver in XW-100	(and FDA)
Chassis (Preliminary)	RoHS 2002/95/EC
	FCC Class B, per CENELEC EN50 081 and 082
	IEC 61000-4-3 (80- 1000MHz, Test Level 3) and
	GR-1089 (RFI Immunity)
	IEC 61000-4-2 (ESD Immunity)
Sumitomo 10GB-XR SXP3102DA-	Laser Safety Class 1 per IEC60825-1 and
Fxxx optical transceiver in XW-100	FDA/CDRH 21 CFR 1040
Chassis (Preliminary)	
Mellanox Optical transceiver,	Laser safety Class 1 per EN (IEC) 60825 (and
MFM1T02A-SR	FDA), TUV and CSA
	Electrical Safety EN (IEC) 60950
Sunpower ATX PS	EMI: EN 55022 CLASSB, FCC CFR 47 PART 15
-	CLASS B, CNS 13438. CLASS B, Compliance to
	EN61000-3-2 CLASSD, EN61000-3-3
	EN 55024: EN 61000-4-2,3,4,5,6,8,11
	UL 60950-1 2nd, GSA C22.2 No. 60950-1-07 2nd,
	TUV EN 60950-1 :2006+A11, IEC 60950-1:2005,
	approved
Symmetricon	UL, C-UL: UL 1950/CSA 22.2 950, Standard for
1530-602-1 XL-GPS Receiver	Safety, Information Technology Equipment (ITE)
	FCC Part 15, Subpart B
	89/336/EEC EMC Directive
	73/23/EEC Low Voltage Safety Directive
	IEC 60950 Safety of Information Technology
	Equipment (ITE)