

**COMMUNICATIONS
ALLIANCE LTD**



AUSTRALIAN STANDARD

AS/CA S043.1:2015

Requirements for Customer Equipment for
connection to a metallic local loop interface of a
Telecommunications Network— Part 1: General

Australian Standard – Requirements for Customer Equipment for connection to a metallic local loop interface of a Telecommunications Network— Part 1: General

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FOREWORD

General

This Standard was prepared by the **Addressable Devices** Working Committee (CECRP/WC10) and most recently revised by the **VDSL2 and Vectoring** Working Committee (WC58). It is one of a series of Telecommunication Standards developed under the Memorandum of Understanding between the Australian Communications Authority (ACA) and Australian Communications Industry Forum.

Note: On 1 July 2005 the ACA became the Australian Communications and Media Authority (ACMA) and the Memorandum of Understanding continues in effect as if the reference to the ACA were a reference to the ACMA.

Communications Alliance was formed in 2006 and continues the functions previously fulfilled by ACIF.

This Standard is a revision of AS/ACIF S043.1:2003 **Requirements for Customer Equipment for connection to a metallic local loop interface of a Telecommunications Network— Part 1: General** Australian Standard.

This Standard is the result of a consensus among representatives on the Communications Alliance Working Committee to produce it as an Australian Standard.

The requirements in this Standard are consistent with the aims of s376 of the *Telecommunications Act 1997*. Specifically these aims are:

- (a) protecting the integrity of a telecommunications network or facility;
- (b) protecting the health and safety of persons;
- (c) ensuring access to emergency services; and
- (d) ensuring interoperability with a standard telephone service.

It should be noted that some Customer Equipment (CE) may also need to comply with requirements in other Standards or other Parts of this Standard.

AS/CA S043 consists of the following parts under the general title **Requirements for Customer Equipment for connection to a metallic local loop interface of a Telecommunications Network**:

- Part 1: General
- Part 2: Broadband
- Part 3: DC, low frequency AC and voiceband

Applicable electrical safety Standards, EMC and EMR Standards may apply under Commonwealth or State/Territory laws, or both.

Intellectual property rights

Equipment which is manufactured to comply with this Standard may require the use of technology which is protected by patent rights in Australia. Questions about the availability of such technology, under licence or otherwise, should be directed to the patent holder or Australian licensee (if known) or through enquiry at IP Australia which incorporates the Patent, Designs and Trade Marks Offices. Further information can be found at www.ipaustralia.gov.au.

Standards revision

Australian Standards (AS/ACIF and AS/CA Standards) developed by the Communications Alliance are updated according to the needs of the industry, by amendments or revision. Users of these Standards should make sure that they possess the latest amendments or editions. Representations concerning the need for a change to this AS/CA Standard should be addressed to:

The Project Manager
Customer Equipment and Cable Reference Panel
Communications Alliance
PO Box 444
Milsons Point NSW 1565

Regulatory notice

This document will be submitted to the ACMA, for making as a technical standard under s376 of the *Telecommunications Act 1997*. Until it is made by the ACMA compliance with this Standard is voluntary.

The ACMA is a Commonwealth authority with statutory powers to impose requirements concerning telecommunications Customer Equipment and Customer Cabling.

The ACMA requires Australian manufacturers and importers, or their Australian agents, of specified items of Customer Equipment and Customer Cabling to establish compliance with Standards such as this. Items are required to be labelled in accordance with the applicable labelling notices.

Details on current compliance arrangements can be obtained from the ACMA website at <http://www.acma.gov.au> or by contacting the ACMA below at:

Australian Communications and Media Authority
PO Box 13112
Law Courts PO
Melbourne VIC 8010
Australia

Telephone: +61 3 9963 6800
Facsimile: +61 3 9963 6899
TTY: +61 3 9963 6948
Email: info@acma.gov.au

Introduction

This introduction for the AS/CA S043.1 **Requirements for Customer Equipment for connection to a metallic local loop interface of a Telecommunications Network—Part 1: General** Standard is not an authoritative section of this Standard and is only provided as guidance for the user of the Standard to outline its objectives, the factors that have been taken into account in its development and to list the principal differences between the new and the previous edition.

The reader is directed to the clauses of this Standard for the specific requirements and to the ACMA for the applicable telecommunications labelling and compliance arrangements.

Note: Further information on the telecommunications labelling and compliance arrangements can be found in *The Telecommunications Labelling (Customer Equipment and Customer Cabling) Notice* (the TLN). The TLN can be obtained from the ACMA website at www.acma.gov.au.

The objective of this Standard is to provide the requirements and test methods for Customer Equipment (CE) that is designed or intended for connection to a Telecommunications Network via a metallic local loop interface in order to meet the regulatory arrangements for such equipment in Australia. Additional requirements for specific technologies are addressed in other Parts of this Standard.

The objective of this revision is to update to the current template at the same time that revisions were being made to other parts of AS/CA S043.

The principal differences between this edition of AS/CA S043.1 and the previous edition are:

- (i) Editorial updates; and
- (ii) Update to the current document template for Communications Alliance.

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1 INTERPRETATIVE GUIDELINES

1.1 Categories of requirements

This Standard contains mandatory requirements as well as provisions that are recommendatory only. Mandatory requirements are designated by the words '**shall**' or '**shall not**'. All other provisions are voluntary.

1.2 Compliance statements

Compliance statements, in italics, suggest methodologies for demonstrating CE's compliance with the requirements.

1.3 Definitions, expressions and terms

If there is any conflict between the definitions used in this Standard and the definitions used in the *Telecommunications Act 1997*, the definitions in the Act take precedence.

1.4 Notes

Text denoted as 'Note' is for guidance in interpretation and is shown in smaller size type.

1.5 References

- (a) Applicable editions (or versions) of other documents referred to in this Standard are specified in Section 3: REFERENCES.
- (b) If a document refers to another document, the other document is a sub-referenced document.
- (c) Where the edition (or version) of the sub-referenced document is uniquely identified in the reference document, then that edition (or version) applies.
- (d) Where the edition (or version) of the sub-referenced document is not uniquely identified in the reference document, then the applicable edition (or version) is that which is current at the date the reference document is legislated under the applicable regulatory framework, or for a non- legislated document, the date upon which the document is published by the relevant standards organisation.
- (e) A number in square brackets '[']' refers to a document listed in Section 3: REFERENCES.

1.6 Units and symbols

In this Standard the International System (SI) of units and symbols is used in accordance with Australian Standard AS ISO 1000 [1].

1.7 Parts of Standards

CE scoped by this Standard is to comply with the applicable technology-specific Part(s) of this Standard.

2 SCOPE

- 2.1 This Standard applies to Customer Equipment (CE) that is designed or intended for connection to a Telecommunications Network via a metallic local loop interface.
- 2.2 This Standard does not apply to CE designed or intended for connection to HFC, coaxial cable or wireless local loop.
- 2.2 CE is not excluded from the scope of this Standard by reason only that it is capable of performing functions additional to those described in this Standard.

3 REFERENCES

	Publication	Title
Australian Standards		
[1]	AS ISO 1000-1998	The international System of Unit (SI) and its application. http://infostore.saiglobal.com/store/Details.aspx?ProductID=341659
AS/CA Standards		
[2]	AS/CA S008:2010	Requirement for authorised cabling products http://commsalliance.com.au/Documents/all/Standards/s008
ITU-T Recommendations		
[3]	V.18 (11/2000)	Operational and interworking requirements for DCEs operating in the text telephone mode http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=5241
Federal Communications Commission (FCC) — USA		
[4]	CFR FCC 47 – Part 68.500:October 2000	Code of Federal Regulations Federal Communications Commission Title 47: Telecommunications Part 68: Connection of Terminal Equipment to the Telephone Network Subpart F – Connector Specifications Paragraph 500 - Specifications

4 ABBREVIATIONS AND DEFINITIONS

For the purposes of this Standard, the following abbreviations and definitions and those of Part 1 apply:

4.1 Abbreviations

ACMA	Australian Communications and Media Authority
ACIF	Australian Communications Industry Forum
AS	Australian Standard
CE	Customer Equipment
FCC	Federal Communications Commission
HFC	Hybrid Fibre Coax
ITU-T	International Telecommunications Union – Telecommunications
TTY	Telephone Typewriter

4.2 Definitions

4.2.1 Carrier

Carrier is the holder of a carrier licence in accordance with the *Telecommunications Act 1997*.

4.2.2 Customer Equipment (CE)

Refer to section 21 of the *Telecommunications Act 1997*.

4.2.3 Metallic local loop

Metallic twisted pair communications wire in a carrier's network that provides connectivity between a customer's premises and equipment in the Telecommunications Network.

Note: This definition is intended to exclude other types of local loop including HFC, coaxial cable and wireless local loop that does not use twisted copper or aluminium pair communications wire.

4.2.4 Metallic local loop interface

An interface for the electrical connection to a metallic local loop.

4.2.5 Supplier

A manufacturer or importer of CE or their nominated agent.

4.2.6 Telecommunications Network

Refer to section 7 and subsection 374(1) of the *Telecommunications Act 1997*.

5 REQUIREMENTS

5.1 Emergency services access

5.1.1 General

CE that is capable of voice communication or TTY communication in accordance with ITU-T Recommendation V.18 [3] is to comply with the following requirements:

- (a) CE with a dialling capability and used for voice communication **shall** support the dialling of emergency service number '000'.
- (b) CE with a handset and with a dialling capability **shall** support the dialling of emergency service numbers '000' and '106'.
- (c) (c)TTY terminals or CE with equivalent functionality that can be connected to the Telecommunications Network **shall** support the dialling of emergency service number '106'.

Compliance with Clause 5.1.1 may be checked by operation and inspection.

5.1.2 Access barring

CE should not support access barring of emergency service numbers '000' and '106'.

5.1.3 Loss of mains power

Mains-powered CE should continue to support the dialling of emergency service numbers for at least 30 minutes following the loss of mains power.

5.1.4 Provision of power-fail advice

CE that does not continue to support emergency dialling for at least 30 minutes after loss of mains power **shall** have an appropriately worded warning notice included in or with the CE documentation. The warning notice should also be placed on the outside surface of the CE's packaging. A suggested wording for the warning notice is as follows:

Warning

This equipment will be inoperable when mains power fails.

Compliance with Clause 5.1.4 may be checked by inspection.

5.2 Line polarity and line conductor polarisation

5.2.1 Operation

The operation of CE should be independent of:

- (a) line conductor polarisation, i.e. the connection of specific conductors of the line pairs to specific line terminals of the CE; and
- (b) the polarity of any voltage on any specific line conductor.

5.2.2 Line polarity reversal

Normal operation of CE should be independent of, and should remain unaffected by, any reversal (momentary or otherwise) in line polarity.

5.3 Line connection

CE should terminate on and be supplied with:

- (a) an insulation displacement connection system;
- (b) a cable complying with AS/CA S008 [2] and which is able to be terminated on an insulation displacement connection system;
- (c) a socket on the CE complying with AS/CA S008 [2]; or
- (d) a modular 8-way plug on the end of a line cord, where both the plug and cord comply with the requirements of AS/CA S008 [2] and the plug is Plug Type FCC 68 [4] (eight-position).

Note: The following pin assignments should be used where a Plug Type FCC 68 [4] (eight-position) is supplied for connection of CE.

For 2-wire: Pins 4 & 5 (Pair 1) should be used.

For 4-wire: Pins 4 & 5 (Pair 1) should be used.

Pins 1 & 2 (Pair 3) should be used.

Other line connections may also be appropriate.

5.4 Fail-safe operation

CE **shall** not cause harm or damage to a Telecommunications Network or Facility if any of the following events occur:

- (a) Failure of any single mechanical or electrical component in the CE.
- (b) Failure of any power supply (including AC mains voltage and local battery) to the CE.
- (c) Incorrect manual operation of the CE.

Compliance with Clause 5.4 may be checked by operation and inspection.

PARTICIPANTS

The Working Committee responsible for the revisions made to this Standard consisted of the following organisations:

Organisation	Membership
AAPT	Voting
Adtran Networks	Voting
Advanced Circuits and Systems	Voting
Alcatel-Lucent	Voting
Corning Systems	Voting
Huawei	Voting
iiNet	Voting
International Copper Association (ICAA)	Voting
Layer10	Voting
NBN Co	Voting
Netcomm Wireless	Voting
OneAccess	Voting
Optus	Voting
M2	Voting
Telstra	Voting
ACCC	Non-voting
ACMA	Non-voting

This Working Committee was chaired by Peter Cooke. James Duck of Communications Alliance Ltd provided project management support.

Communications Alliance was formed in 2006 to provide a unified voice for the Australian communications industry and to lead it into the next generation of converging networks, technologies and services.

In pursuing its goals, Communications Alliance offers a forum for the industry to make coherent and constructive contributions to policy development and debate.

Communications Alliance seeks to facilitate open, effective and ethical competition between service providers while ensuring efficient, safe operation of networks, the provision of innovative services and the enhancement of consumer outcomes.

It is committed to the achievement of the policy objective of the *Telecommunications Act 1997* - the greatest practicable use of industry self-regulation without imposing undue financial and administrative burdens on industry.



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