



Providing Global Development Solutions

Model Regulations
for
Customer Premises Equipment
and
Inside Wiring Competition
in the Eastern Caribbean

March 30, 2002

Prepared by John G. Williams, Telecommunications Consulting Group, Inc.

For the Eastern Caribbean Telecommunications Regulatory Authority

Under contract to CARANA Corporation

USAID Contract PCE-I-00-98-00014-00

Task Order No. OUT-PCE-I-809-98-00014-00

4350 North Fairfax Drive, Suite 500, Arlington, VA 22203 USA

Telephone (703) 243-1700 • Facsimile (703) 243-0471

<http://www.carana.com>

Table of Contents

	Page
0 Summary	3
1 Introduction	3
2 Discussion of Model Regulations	4
Appendix A—Model Regulations for Customer Premises Equipment and Inside Wiring Competition	
Appendix B—Earlier Terminal Network Regulation Document	

0 Summary

This report is written to help telecommunications regulators in the Eastern Caribbean by providing model regulations for customer premises equipment and inside wiring competition. These regulations are based upon earlier prototype regulations drafted in the region and an earlier policy study performed by the author. The model regulations are accompanied by a discussion that relates the regulations to these earlier works and which comments on certain concepts that the regulations embody.

1 Introduction

This report documents and discusses model regulations for customer premises equipment (CPE) and inside wiring competition in the Eastern Caribbean. Topics covered by these regulations include: the sale of CPE, the installation of inside wiring and the certification of installers of inside wiring and CPE. These model regulations were written specifically to help regulators in the five Eastern Caribbean countries (St. Kitts & Nevis, Dominica, St. Lucia, St. Vincent & the Grenadines and Grenada) that have established the Eastern Caribbean Telecommunication Authority (ECTEL).

This document relies upon and assumes a familiarity with a related report by the same author. The earlier report, called here *Policy Guidelines*, discussed regulatory and public-policy options for CPE and inside wiring competition in the Eastern Caribbean.¹ The model regulations presented here also build upon an earlier *Terminal Network Regulation* (TNR) document. We understand that these earlier prototype regulations were drafted by a local attorney in the Eastern Caribbean under the sponsorship of USAID. Below, we discuss the ways in which our *Model Regulations* were evolved from the *TNR Document* (and the reasons for these changes) under the guidance of our *Policy Guidelines*.²

¹ Williams, John G., *Regulatory and Public-Policy Guidelines for Customer Premises Equipment and Inside Wiring Competition in the Eastern Caribbean*, Arlington, Virginia, Carana Corporation, March 1, 2002.

² Nothing here is intended to be critical of the *TNR Document*. We are grateful to have this earlier work to build upon, and we assume that our *Model Regulations* may be subject to further refinement and change.

The section immediately below discusses the *Model Regulations*. This is followed by Appendix A, which contains the full text of the *Model Regulations*, and Appendix B, which contains the *TNR Document*.

2 Discussion of Model Regulations

While our *Model Regulations* contain much of the spirit and structure of the *TNR Document* (and many of the regulations verbatim) there are four fundamental differences between the two documents. **First**, the *TNR Document* contains regulations for CPE, inside wiring, and radio transmission and reception equipment. The *Model Regulations* are not concerned with radio equipment, so these sections of the *TNR Document* are omitted. **Second**, the *TNR Document* assumes that the Commission (meaning a Commission in an individual ECTEL state, and not ECTEL itself) would approve CPE. We think that this is unrealistic (either for an individual state or for ECTEL) and therefore these sections have been removed from the *TNR Document*.³ Instead, we assume that approval processes and standards from the United States will be used.⁴ **Third**, the *TNR Document* tends to confound CPE and inside wiring, while the *Model Regulations* treat these two issues separately. **Fourth**, the *TNR Document* mainly references FCC regulations (which are concerned with preventing harm to the local exchange carrier network). Following the *Policy Guidelines* at Sections 2.6 through 2.8, the *Model Regulations* distinguish among three different types of standards.⁵

Several specific regulations in the *Model Regulations* need individual discussion.

Regulation 5(4) lists only one TIA/EIA standard for inside wiring specifications to

³ As discussed in the *Policy Guidelines* at footnote 5, neither an individual state nor ECTEL is likely to have the resources to perform the CPE approval function. Further, the FCC has approved about 30,000 types of CPE devices and about 3,000 new products are registered each year. That either an individual state or ECTEL would have the means to approve many of these devices seems unlikely. Finally, equipment manufacturers may not submit to a local certification process in order to gain access to a relatively small market.

⁴ This assumption does not reflect xenophobia on the part of the author. To the best of our ability to determine this information, US standards appear to be used by the incumbent local exchange carrier (Cable & Wireless) in the Eastern Caribbean. This matter is discussed further in the *Policy Guidelines* at footnotes 22 and 23.

⁵ These standards are: standards to prevent harm to local exchange carrier networks, standards to prevent harm to users and to property, and standards to assure adequate performance and compatibility with local exchange carrier networks.

insure adequate performance and compatibility with local exchange carrier networks. As discussed in the *Policy Guidelines* at Section 3.3, there are five other TIA/EIA standards for inside wiring that policymakers might wish to consider as requirements.⁶ The question of applying any of these standards depends upon the extent to which regulators wish to formalize these matter.

Regulation 6 (Commission regulations to prevail) is important because the FCC rules included by reference are more than just standards documents. The FCC rules contain specific policies and regulations that may be inconsistent with regulations in the *Model Regulations*.⁷ Therefore, this regulation assures that the *Model Regulations* will prevail.

Following the *TNR document*, **Regulation 18** requires that *all* inside wiring be installed by licensed installers. This is inconsistent with FCC regulations, which allow simple inside wiring (i.e., up to four lines for business and residential service) to be installed on the subscriber's side of the demarcation point by the subscriber or premises owner.⁸ The Commission might wish to consider which option they wish to apply in final regulations.⁹

Unlike the corresponding regulations in the *TNR Document*, **Regulations 20-22** only apply acceptance testing to inside wiring and not to CPE. Acceptance testing of inside wiring may be necessary because inside wiring is installed on a case-by-case,

⁶ These other standards documents are:

TIA/EIA-569-A—Commercial Building Standard for Telecommunications Pathways and Spaces;

TIA/EIA-570-A—Residential Telecommunications Cabling Standard;

TIA/EIA-606—Administration Standard for the Telecommunications Infrastructure of Commercial Buildings;

TIA/EIA-607—Commercial Building Grounding and Bonding Requirements for Telecommunications; and

TIA/EIA-758—Customer-Owned Outside Plant Telecommunications Cabling Standard.

⁷ In contrast, the documents included by reference from the Underwriters Laboratories (UL) and from the Telecommunications Industry Association/Electronic Industries Alliance (TIA/EIA) are pure standards documents.

⁸ Regulation 18 also demonstrates the need for Regulation 6.

⁹ Regulation 18 makes no mention of the possibility that entities other than the Commission might approve inside wiring installers. This possibility is discussed at Section 2.5 of the *Policy Guidelines*.

place-by-place basis by individual workers. There is no reason to apply acceptance testing to CPE. As discussed in the *Policy Guidelines* at Section 2.5, manufacturers of CPE have a strong competitive incentive to insure that their equipment meets the required standards. **Regulation 21** adds an important step to the acceptance testing process by allowing the local exchange carrier's determination of the acceptance of an inside wiring installation to be appealed to the Commission.

Appendix A

**Model Regulations
for
Customer Premises Equipment
and
Inside Wiring Competition**

2002

TELECOMMUNICATIONS

[OECS STATE]

STATUTORY RULES AND ORDERS No. of 2002

REGULATIONS

MADE by the Minister under Section [] of the Telecommunications Act, 2000 (Act No. of 2000).

(Gazetted, 2002)

- Short title** 1. These Regulations may be cited as the –
CUSTOMER PREMISES EQUIPMENT AND INSIDE WIRING REGULATIONS, 2002.
- Commencement** 2. These Regulations shall come into force on such day as the Minister by Order published in the Gazette appoints.
- Interpretation** 3. In these Regulations:
- “**Act**” means the Telecommunications Act, 2000.
- “**Commission**” means the telecommunications regulatory commission of an individual OECS state.
- “**customer premises equipment**” or “**CPE**” means any telecommunications terminal equipment located on the customer’s premises beyond the demarcation point.
- “**demarcation point**” or “**point of interface**” or “**point of interconnection**” means the point between the communications facilities of a local exchange carrier providing wireline telecommunications service and terminal equipment, protective apparatus or wiring at a customer’s premises.
- “**inside wiring**” or “**premises wiring**” means customer-owned or controlled wire on the customer’s side of the demarcation point.

“local exchange carrier” means a company that provides local wireline telecommunications service within a franchised territory.

“incumbent local exchange carrier” means the local exchange carrier that traditionally has provided local wireline telecommunications service within a franchised territory prior to the enactment of the Telecommunications Act, 2000.

“telecommunications terminal equipment” means equipment located at the end of a telecommunications link used to accomplish the provision of telecommunications or information services.

CPE approval conditions

4. (1) No person shall import, sell for use, install or use any item of customer premises equipment in [OECS Territory] unless that equipment meets the specifications listed in Paragraphs (2) through (4) below:

(2) Specifications to prevent harm to local exchange carrier networks:

(a) FCC Part 68 rules – Connection of Terminal Equipment to the Telephone Network.

(3) Specifications to prevent harm to users and to property:

(a) FCC Part 15 rules – Radio Frequency Devices;

(b) UL 94 – Test for Flammability of Plastic Materials for Parts in Devices and Appliances; and

(c) UL 1459 – Standard for Telephone Equipment.

(4) Specifications to insure adequate performance and compatibility with local exchange carrier networks:

(a) TIA/EIA-464-B – Requirements for Private Branch Exchange (PBX) Switching Equipment; and

(b) TIA/EIA-470-B – Telecommunications-Telephone Terminal Equipment—Performance and Compatibility Requirements for Telephone Sets with Loop Signaling.

(5) Items of equipment that must meet such specifications include but are not limited to:

- (a) fax machines;
- (b) modems;
- (c) private branch exchange switches (PBXs);
- (d) small business systems and key systems;
- (e) telephone instruments; and
- (f) any other customer premises equipment to be attached to any part of a licensed local exchange carrier network.

**Inside wiring
approval
conditions**

5. (1) No person shall import, sell for use, install or use any item of inside wiring in [OECS Territory] unless that equipment meets the specifications listed in Paragraphs (2) through (4) below:

(2) Specifications to prevent harm to local exchange carrier networks:

(a) FCC Part 68 rules – Connection of Terminal Equipment to the Telephone Network.

(3) Specifications to prevent harm to users and to property:

(a) UL 444 – Communications Cables;

(b) UL 1581 – Reference Standard for Electrical Wires, Cables and Flexible Cords; and

(c) UL 1863 – Standard for Communications-Circuit Accessories.

(4) Specifications to insure adequate performance and compatibility with local exchange carrier networks:

(a) TIA/EIA-568-A – Commercial Building Telecommunications Cabling Standard.

**Commission
regulations
to prevail**

6. If any Commission regulation is inconsistent with any specification listed in **Regulations 4 or 5**, the Commission regulation shall prevail.

Specification documentation	7 The Commission shall ensure that the appropriate documents and manuals containing the specifications listed in Regulations 4 and 5 are made readily available to local exchange carriers, their customers and to other interested parties.
Commission to liaise with ECTEL	8. The Commission will consult and liaise with ECTEL with respect to CPE and inside wiring approval matters when necessary.
Burden of proof	9. A party importing or selling any item of customer premises equipment or inside wiring shall provide to the Commission satisfactory documentary evidence that the relevant equipment specifications listed in Regulations 4 and 5 are satisfied.
Establish demarcation point	10. The Commission will either conduct a proceeding to establish the definition of the demarcation point (and, if appropriate, associated hardware at that point), or accept the definition contained in Part 68 of the FCC's rules.
Divest CPE and inside wiring	11. The Commission will establish a procedure to divest the incumbent local exchange carrier of customer premises equipment and inside wiring and a procedure to assign ownership of that equipment to the customer of record.
Establish transition procedures	12. The Commission will establish a procedure for the transition to the state of divested customer premises equipment and inside wiring, taking into account customers who may have orders in progress for new CPE and inside wiring under the old arrangement at the time of transition.
Establish new customer agreements	13. The Commission will approve new customer agreements and procedures for the incumbent local exchange carrier that are appropriate to the new arrangement of divested customer premises equipment and inside wiring.
Licensing for CPE sales, maintenance and repair	14. (1) A person shall register with the Commission in order to: <ul style="list-style-type: none"> (a) sell or supply items of customer premises equipment such as fax machines, PBXs and telephone sets; or

(b) provide installation, maintenance or repair of customer premises equipment.

(2) Upon registration with, and payment of the prescribed registration fee to the Commission:

(a) a registration card will be issued to the organization or firm selling or supplying customer premises equipment; or

(b) a registration card will be issued to technicians or other authorized persons connected with the installation, maintenance and repair of customer premises equipment.

(3) Registration is subject to annual renewal upon payment of the prescribed renewal fee.

Commission may publicize

15. For the convenience of consumers, the Commission may publicize the names, addresses and other contact information for those entities that are registered to provide the sales, supply, installation, maintenance or repair of customer premises equipment.

Speedy repairs of CPE

16. A provider of customer premises equipment shall have in place, systems for the speedy and efficient repairs of its equipment, and, as far as practicable, for the temporary allocation to customers of items of equipment whilst theirs are under repairs.

CPE fault to be addressed expeditiously

17. A provider of customer premises equipment shall take all reasonable measures to ensure that its items of equipment or its services are maintained, provided or replaced within 48 hours of receiving a fault report.

Licensing to install, maintain and repair inside wiring

18. (1) A person who wishes to install, maintain or repair inside wiring shall register with the Commission and shall submit adequate proof of the ability to perform the required tasks.

(2) Upon registration with, and payment of the fee to the Commission, the Commission may issue a registration card to technicians or other authorized persons regarding the installation of inside wiring.

(3) Registration is subject to annual renewal upon payment of the prescribed renewal fee.

Commission may publicize	19. For the convenience of consumers, the Commission may publicize the names, addresses and other contact information for those entities that are registered to install, maintain or repair inside wiring.
Non-discriminatory acceptance testing	20. A local exchange carrier may carry out, in a non-discriminatory manner, acceptance testing of all inside wiring to be interfaced with its network, to ascertain whether the installation meets Commission standards before connection.
Appeal of changes resulting from acceptance testing	21. Any change requests that arise from the acceptance testing of inside wiring may be appealed to the Commission if agreement cannot be reached between the local exchange carrier and the installer of inside wiring.
Acceptance testing changes to be in agreement	22. Changes relating to acceptance testing of inside wiring installations shall form part of the written agreement between the local exchange carrier and the installer of inside wiring.
Provisions for maintenance	23. A customer shall be responsible for the maintenance of customer premises equipment and inside wiring, without prejudice to the incorporation of a provision for the maintenance and repair of that equipment into an agreement drawn up between the customer and the provider of that equipment.
Commission may issue directives	24. The Commission may issue directives to a dealer or supplier of customer premises equipment or inside wiring upon receipt of a complaint from a consumer or from a local exchange carrier.
Notice to be given when rights are affected	25. (1) Where the Commission intends to take any action which may affect the rights, interests or privileges of the person complained against the commission shall notify the provider of the affected customer premises equipment or inside wiring in writing of the proposed action. (2) The Commission shall specify a period of not less than 28 days in which the provider of the customer premises equipment or inside wiring may make representation on its behalf in respect of the proposed action.

Made this day of, 2002.

MINISTER FOR TELECOMMUNICATIONS

Appendix B

Earlier
Terminal Network Regulation
Document

2001

TELECOMMUNICATIONS

[OECS STATE]

STATUTORY RULES AND ORDERS No. of 2001

REGULATIONS

MADE by the Minister under Section [] of the Telecommunications Act, 2000 (Act No. of 2000).

(Gazetted, 2001)

Short title 1. These Regulations may be cited as the –
**TELECOMMUNICATIONS (TERMINAL EQUIPMENT
AND PUBLIC NETWORK) REGULATIONS, 2001.**

Commencement 2. These Regulations shall come into force on such day as
the Minister by Order published in the Gazette appoints.

Interpretation 3. In these Regulations:

“**Act**” means the Telecommunications Act, 2000.

“**equipment**” means any equipment that is either
radio equipment or telecommunications
terminal equipment or both.

“**harmful interference**” means interference which,
interrupts a radio communications or other
telecommunications service or system, or
otherwise seriously degrades, obstructs or
repeatedly interrupts a radio
communications service operating in
accordance with applicable national
regulations;

“**interface**” means either or both of:

(a) an air interface specifying the radio path
between radio equipment and their technical
specifications; and

(b) a network termination point which is a physical connection point at which a user is provided with access to public telecommunications networks;

“Hertzian waves” means electromagnetic waves of frequencies from 1hz to 3,000 GHZ propagated in space without artificial guide.

Type approval conditions

4. (1) Any person shall not install, sell for use or use any item of equipment in [OECS Territory], unless the Commission grants a certificate of type approval in respect of that type of equipment.

(2) Items of equipment that require type approval include but are not limited to:

- (a) cellular telephones;
- (b) cordless telephones;
- (c) fax machines;
- (d) GSM telephones;
- (e) mobile radios;
- (f) modems;
- (g) wireless remote devices;
- (h) PABXs (including Small Business Systems and Key Systems);
- (i) pagers;
- (j) radio receivers;
- (k) radio transmitters;
- (l) satellite earth stations;
- (m) telecommunications switching equipment;
- (n) telephone instruments;
- (o) telex equipment;
- (p) other equipment emitting a radio signal; and
- (q) any other customer premises equipment to be attached to any part of a licensed telecommunications network.

(3) A person who is granted a certificate of type approval by the Commission for use of any of the items specified in Paragraph 2 shall not be required to apply to the Commission for further approval, if that person uses the same model of equipment subsequently.

Signature of applicant	<p>5. An application to the Commission for type approval of equipment shall be signed by:</p> <ul style="list-style-type: none"> (a) an authorised representative of the applicant; or (b) the applicant personally.
Filing of application	<p>6. (1) A person who applies for type approval in respect of any equipment shall forward to the Commission:</p> <ul style="list-style-type: none"> (a) a sample of the equipment if requested; (b) completed application forms; (c) the prescribed fee; (d) the relevant literature; and (e) the technical specifications specified by the Commission after consultation with ECTEL. <p>(2) Copies of the application forms, the related documentation and samples referred to in Paragraph 1 may be forwarded by the Commission to ECTEL for recommendations and review.</p>
Time frame for function of commission	<p>7. The Commission may require a maximum period of 6 weeks for:</p> <ul style="list-style-type: none"> (a) testing the samples of equipment; (b) purpose of reviewing the application; and (c) granting of type approval for customer premises equipment.
More time required by commission	<p>8. The Commission may require a maximum period of 3 months for the purpose of reviewing the applications, for testing any samples of equipment and for granting type approval for switches over 1000 points and high capacity microwave equipment.</p>
Fresh approval require	<p>9. Where changes have occurred in the models, designs or technical specifications in respect of equipment which has been the subject of approval by the Commission to an applicant, that applicant shall apply for fresh approval in respect of that equipment.</p>
Commission to bill applicant	<p>10. (1) The Commission shall upon receipt of an application compute the applicable fee and forward an invoice to the applicant within 30 days of the receipt of the application.</p>

(2) Where the applicant fails to remit the invoiced fee within 30 days of its receipt, the Commission may terminate any provisional approval it may have granted by written notice to the applicant.

Commission to liaise with ECTEL

11. The Commission may recognize type approvals granted by other Contracting States, and will consult and liaise with ECTEL, in respect of such matters where necessary.

Technical regulations

12. The Commission may, upon the recommendation of ECTEL, determine the technical regulations that should be recognized in [OECS Territory] and other approved States for the purposes of giving effect to the recognition of, or exemption from, type approval procedures.

Recognition of foreign type approvals

13. (1) The Commission will recognise the type approvals which are specified in **Schedule 1**.

(2) The Commission shall ensure that appropriate manuals containing the legal requirements of type approval by Contracting States which it recognizes, is printed and made readily available to telecommunications providers and other interested parties.

Exemptions

14. The following items of equipment when certified by the Commission to be compliant with the prescribed technical standards shall be exempt from type approval procedures:

- (a) cable;
- (b) for sale and installation inside wiring;
- (c) household appliances.

Burden of proof

15. The party seeking the recognition of the type approval granted by the countries specified in **Schedule 1** or exempted from type approval as specified in **Regulation 14** shall produce to the Commission satisfactory documentary evidence that the relevant equipment qualifies for the recognition or exemption sought.

Importation of equipment

16. (1) A person shall ensure that the importation of radio equipment, customer premises equipment or other terminal equipment, does not damage or endanger the telecommunications network and shall comply with the procedures relating to the approval of equipment as set out in these Regulations.

(2) Notwithstanding the provisions of Paragraph 1 compliance with type approval requirements does not apply to a cellular mobile phone.

**Registration
of terminal
equipment**

17. (1) A person who wishes to:

- (a) provide maintenance, repair services, reticulation and any related installation at customer premises; or
- (b) supply items of terminal equipment such as fax machines, PABXs or telephone sets shall register with the Commission.

(2) Upon registration with, and payment of the prescribed registration fee to the Commission, it may issue a registration card to technicians or other authorised persons connected with the installation, maintenance and repair services.

(3) Registration is subject to annual renewal upon payment of the prescribed renewal fee.

**Adequacy of
report**

18. Where a telecommunications operator or provider wishes to supply customer premises equipment and related services, it will be sufficient if that operator or provider attaches a report to the application showing that the equipment has conformed to the acceptance testing requirements or international type approval.

**Non -
discriminatory
acceptance
testing**

19. An operator or provider of telecommunications services may carry out in a non discriminatory manner, acceptance testing of all customer premises equipment installations to be interfaced with its network, to ascertain whether the required installations meet the prevailing standards before connection.

**Changes from
acceptance
testing**

20. Any changes that arise from acceptance testing of installations by an operator or provider of a telecommunications service shall represent a portion of the tariffs of the operator or provider and shall be approved by the Commission.

Acceptance testing change to be in agreement	21. Changes relating to acceptance testing of installations at customer premises shall form part of the written agreement between an operator or provider of telecommunications services and the provider of customer premises equipment.
Provisions to maintain equipment	22. A customer shall be responsible for the maintenance of customer premises equipment, without prejudice to incorporating into an agreement drawn up between himself and a provider of that equipment, a provision for the maintenance and repair of that equipment.
Speedy repairs of equipment	23. A provider of customer premises equipment shall have in place, systems for the speedy and efficient repairs of its equipment, and as far as practicable, for the temporary allocation to customers of items of equipment whilst theirs are under repairs.
Fault reports to be addressed expeditiously	24. A provider of customer premises equipment shall take all reasonable measures to ensure that its items of equipment or its services are maintained, provided or replaced within 48 hours of receiving a faults report.
Commission to issue directives	25. The Commission may issue directives to a dealer or supplier of customer premises equipment upon receipt of complaints from consumers or providers or operators of telecommunications services.
Notice to be given when rights are affected	26. (1) Where the Commission intends to take any action which may affect the rights, interests or privileges of the person complained against it shall notify the provider of the customer premises equipment in writing of the proposed action. (2) The Commission shall specify a period of not less than 28 days in which the provider of the customer premises equipment may make representation on its behalf in respect of the proposed action.
Registration for inside wiring	27. (1) A person who wishes to provide or supply items of terminal equipment such as inside wiring shall register with the Commission.

(2) Upon registration with, and payment of the registration fee to the Commission, the Commission may issue a registration card to technicians or other authorised persons connected with such wiring, related installation, maintenance and repair services.

(3) Registration is subject to annual renewal upon payment of the prescribed renewal fee.

Made this day of, 2001.

MINISTER FOR TELECOMMUNICATIONS

(Regulation 14)

SCHEDULE 1

- (a) AMPS cellular equipment – FCC Part 68, other US and Canadian Law Sections;
- (b) Facsimile machines that are certified to be in conformity with the technical requirements of Parts 15 and 68 of the Regulations of the United States Federal Communications Commission and the related radiation performance standards found in Title 21, chapter 1, subchapter j; of the United States Code of Federal Regulations;
- (c) PABX and related equipment that is certified to be in conformity with the technical requirements of Parts 15 and 68 of the Regulations of the United States Federal Communications Commission, and related Canadian technical standards for electromagnetic interference, including ICES-003 class B;
- (d) TDMA cellular equipment - FCC Part 68, other US and Canadian Law sections.
- (e) GSM Cellular Equipment – FCC Part 68, other US, Canadian Law Sections.
- (f) European Telecommunications Standards Institute (ETSI). Definitions, Rules and Decisions.