

INTERCONNECTION SERVICES

Item  
170 GENERAL

1. The attachment or use of customer-provided equipment or wiring in conjunction with the Company's equipment or wiring shall be in accordance with the Terms of Service, Article 8.4 and other Items in this Section.
2. Any customer-provided equipment physically associated with, attached to, or used in conjunction with the Company's equipment or wiring must not damage, interfere with or impair the functioning of the Company's services or create a hazard of damage or danger.
3. There are three general categories of connections for customer-provided equipment:
  - (a) Acoustic Connection: Customer-provided equipment includes a device which couples acoustically to a certified voice terminal.
  - (b) Inductive Connection: Customer-provided equipment includes a device which couples inductively to a certified voice terminal.
  - (c) Electrical Connection: Direct electrical connection of customer-provided equipment to the Company's equipment or wiring is by means of jack and plug arrangements, or insulation displacement connectors where the Company's service provider demarcation points in a multi-dwelling unit building are located in a main terminal room or closet on floors connected by backbone cable (see Item 200). (See also Items 96-A and 97, if applicable)
4. The Company may undertake tests electronically or inspect customer-provided equipment on the customer's premises for the purpose of ensuring that the requirements and conditions of Item 200 are being met.

Telephone network harms are usually classified under the following categories:

- (a) Hazardous voltage
  - (b) Excessive signal power
  - (c) Longitudinal imbalance
  - (d) Improper network control signalling
5. When the connection of customer-provided equipment to the Company's facilities causes the Company to incur unusual expense due to harm as described in 4. preceding, the Company will charge this expense to the customer.
  6. The customer shall not have nor, in the future, secure or derive any property right in or control over the Company's equipment, apparatus, lines, circuits or devices through which or over which such attachment, connection or use is made or in the design, function, operation or layout of the Company's equipment, apparatus, lines, circuits, or devices, and the Company reserves the right to change any or all of these as it considers necessary.
  7. The Company shall not be responsible to the customer for any of his equipment apparatus or devices, either in whole or in part, which ceases to be compatible with the Company's facilities or become inoperative because of such changes to the Company's equipment, apparatus, lines, channels or devices.

The Company will, however, give appropriate advance notice of such changes when there is a reasonable expectation that the compatibility of equipment, apparatus, or devices which operate in a standard manner, and which have been connected to the Company's facilities in accordance with the requirements of this Item, will be affected and when the customer's service is altered without choice. For terminal equipment electrically or acoustically connected in accordance with the terms and conditions of the Terminal Attachment Program, as specified in Item 200, such changes will be made in accordance with Industry Canada document, Procedures for Network Change Notices and Disclosures of New Terminal-to-Network Interface (NCN-01) (formerly part of CP-01).

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8. (a) The Company shall not be responsible for the quality of operation of customer-provided equipment except by special agreement.

9. The maintenance and operation of customer-provided equipment or facilities shall be the sole responsibility of the customer. The Company shall not be responsible for any expense incurred by the customer in the maintenance or operation of customer-provided equipment and service. The Company may at its discretion, hold the customer responsible for the repair of any damage to the Company's equipment or other facilities caused by failure of the customer's equipment.

10. Trouble diagnosis involving customer-provided equipment and/or facilities

When a field visit by Company personnel is required to diagnose a trouble and if the trouble is found to be in or caused by customer-provided equipment and/or facilities, the customer will pay a diagnostic charge as follows:

(a) Regular working hours (Notes 1 & 4)	
For the first half hour or fraction	\$38.50
For each additional 15 minutes or fraction	13.50
(b) Other time (Notes 2&3)	
Each 15 minutes or fraction	30.00

If the trouble is caused by the Company's facilities no charge shall be made.

- Notes:
1. Regular working hours are Monday to Saturday 8:00 a.m. to 8:00 p.m. (excluding holidays).
  2. Other time refers to hours outside of regular working hours.
  3. For work done on a call-out basis entirely outside of regular working hours (other time) a minimum two hour charge at the other time rate shall apply.
  4. For treatment of single-line inside wire services, see General Tariff (CRTC 1005), Item 96, Single-Line Inside Wire and Item 96-A, Inside Wire - Stand-Alone Multi-Dwelling Units (MDUs).

See Page 41 for explanation of symbols.

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12. Remote testing is provided, at the Company's discretion, by way of software. Remote testing is provided in 15 minute increments at the following rates. C |

(a) Regular working hours (Note 2)	
For the first 15 minutes or fraction	\$ 30.00
For the second 15 minutes or fraction	30.00
For each additional 15 minutes or fraction	19.00
(b) Other Time (Notes 3&4)	
Each 15 minutes or fraction	33.00

Notes:

2. Regular working hours for installation, addition, move, rearrangement, maintenance and repair functions are Monday to Saturday 8:00 a.m. to 8:00 p.m. (excluding holidays).
3. Other time refers to hours outside of regular working hours.
4. For work done entirely outside of regular working hours (other time), a minimum two hour charge at the other time rate shall apply.

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13. The limitations of the Company's liability in the attachment, connection or use of such customer-provided equipment, apparatus, or devices is specified in the Terms of Service, Article 16.1.

14. The following special rules apply in addition to the Terms of Service and conditions set out in this item:

(a) Attachment of customer-provided inert (non-electric) accessories to the Company's equipment or wiring shall be in accordance with Item 172 and other sections of this Tariff.

(b) Acoustic or inductive coupling of customer-provided equipment, except communication systems, may be made to the exterior of telephones, provided it meets the requirements and conditions of Item 200 or those in (c) following.

(c) To protect the public telephone network, non-certified acoustically or inductively coupled customer-provided equipment must comply with the following minimum specifications, measured at the network interface of the terminal equipment:

(i) IN-BAND TRANSMITTED SIGNAL POWER

a) The power of all signal energy in the frequency band below 3995 Hz delivered by the coupled device via the terminal equipment to the network interface shall not exceed -9 dBm when averaged over any three second interval. C

b) The power of all signal energy in the frequency band below 3995 Hz delivered by the coupled device via the terminal equipment to the network interface shall not exceed +3 dBm when averaged over any 250 ms interval. C

(ii) OUT-OF-BAND TRANSMITTED SIGNAL POWER

The coupled device via the terminal equipment shall not impress between Tip and ring terminals, AC signals exceeding those values given below:

a) Metallic Voltage, 3.995 kHz to 4.005 kHz range: C

<u>Frequency Range</u>	<u>Maximum Voltage Level</u>	<u>Metallic Terminating Impedance</u>
3.995-4.005 kHz	-29dBV	600 ohms

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14. (c)(Continued)

(ii) (Continued)

b) Metallic Voltage 4 kHz to 1 MHz range:

The root-mean-squared voltage averaged\* over 100 milliseconds at the telephone connections of the coupled device via the terminal equipment, in all possible bands within the frequency range 4 kHz to 1MHz shall not exceed the limits given below:

Frequency Range	Maximum Voltage Level in all 8 KHz Bands	Metallic Terminating Impedance
4 kHz to 12 kHz	$-(6.4+12.6 \log f)$ dBV	300 ohms
12 kHz to 90 kHz	$(23-40 \log f)$ dBV	135 ohms
90 kHz to 1 MHz	-55 dBV	135 ohms

Where f = center frequency in kilohertz of each of the possible 8 kHz bands beginning at 8 kHz.

dBV =  $20 \log_{10}$  (voltage in volts).

\*Average magnitudes may be used for signals that have a peak-to-rms ratio of 20 dB and less. Root-mean-square limitations must be used instead of average values if the peak-to-rms ratio of the interfering signal exceeds this value.

(iii) SINGLE FREQUENCY RESTRICTION

The signal power delivered by the coupled device via the terminal equipment to the network interface in the band 2450 to 2750 Hz shall be less than the power present simultaneously in the 800 to 2450 Hz band.

(iv) DTMF CONTROL SIGNALLING TONES

DTMF control signals transmitted by the coupled device via the terminal equipment at the network interface shall comply with the following requirements:

a) Each signal shall consist of two sinusoidal tones. C

b) Each signal shall consist of one tone from a high group of frequencies and one tone from a low group of frequencies, as specified in the matrix below, as appropriate. C

1209 Hz	1336 Hz	1477 Hz	1633 Hz
1	2	3 (X)	697 Hz
4	5	6 (X)	770 Hz
7	8	9 (X)	852 Hz
*	0	# (X)	941 Hz

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14. (c)(Continued)

(iv) (Continued)

c) The maximum frequency deviation of each tone shall not exceed 1.5%. C

d) Each DTMF signal shall have the signal to digit, symbol, or character relationship specified in the matrix above, as appropriate. The digit positions marked (X) are not presently assigned a specific symbol. C

(v) IN-BAND TRANSMITTED DTMF SIGNAL POWER

DTMF network control signals transmitted by the coupled device via the terminal equipment at the network interface shall meet the following requirements:

a) The maximum difference in power levels between the signal frequency components shall not exceed 4 dB. C

b) The power level of the high frequency component shall equal or exceed the power level of the low frequency component. C

c) DTMF signal power levels shall meet the following requirements: C

- Nominal power per frequency -6 to -4 dBm
- Maximum power per frequency pair +2 dBm
- Minimum power high group -10 dBm
- Minimum power low group -12 dBm

d) DTMF signals transmitted by autodiallers shall not exceed 0 dBm average power over any three second interval. C

(vi) IN-BAND EXTRANEIOUS ENERGY

The total power of all extraneous frequencies, transmitted by the coupled device via the terminal equipment at the network interface, shall be at least 20 dB below the power level of the DTMF signal. This requirement applies to signals coincident with the DTMF signal in the voice band from 500 Hz to 3995 Hz.

(vii) DTMF TONE LEAK

In the off-hook mode in the pre-signalling state and during the interdigital interval, DTMF tone leak transmitted by the coupled device via the terminal equipment at the network interface shall not exceed -55 dBm.

(viii) For test methods refer to CS-03, Issue 5.