

Mediatrix[®] 1104

User's Manual

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Mediatrix Telecom, Inc. 4229 Garlock Street Sherbrooke, Québec, Canada J1L 2C8

Mediatrix® 1104 User's Manual (SIP Version)

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Introduction

Thank you for purchasing the Mediatrix 1104 from Mediatrix Telecom, Inc.

This manual illustrates some of the various call processes the Mediatrix 1104 supports. It also describes how to make and receive calls, as well as how to use the services the Mediatrix 1104 offers.

Intended Audience This manual provides all the information needed to use the Mediatrix 1104. It is intended for end-users that will use the product on a regular basis.

Before you Begin

This manual assumes that your Mediatrix 1104 has been properly set up by your system administrator. If you need to install and configure the Mediatrix 1104 yourself, please refer to the Administration Manual provided with your Mediatrix 1104 or contact your system administrator.

SCN vs PSTN

In Mediatrix Telecom, Inc.'s and other vendor's documentation, the terms SCN and PSTN are used. A SCN (Switched Circuit Network) is a general term to designate a communication network in which any user may be connected to any other user through the use of message, circuit, or packet switching and control devices. The Public Switched Telephone Network (PSTN) or a Private Branch eXchange (PBX) are examples of SCNs.

Related

In addition to this Manual, each document set of the Mediatrix 1104 **Documentation** includes the following:

Administration Manual

Explains how to install and set up the various Mediatrix 1104 parameters. It is intended for a network administrator. The manual is not printed – it is located on the Documentation CD provided with your Mediatrix 1104.

What's New in this Version

Added a requirement to the conference service. See "Conferencing Calls" on page 14 for more details.

Quick Start booklet

This printed booklet allows you to quickly setup and work with your Mediatrix 1104.

MIB Reference Manual

Lists and explains all parameters in the MIB structure.

Be sure to read any readme files, technical bulletins, or additional release notes for important information.

Overview

The Mediatrix 1104 is an IP Telephony adaptor that connects up to four (4) analog terminals to a LAN or a WAN with access to an IP Packet Network to permit high-quality, full duplex, audio/fax communications. Capable of performing all required IP Telephony tasks in one standalone enclosure, the Mediatrix 1104 offers the same enhanced features present in the Mediatrix Telecom, Inc. line of products, and can be an integral part of a cost-effective IP telephony solution by complementing the existing VoIP infrastructure. In addition, a bypass line allows calls to be routed to the SCN, in case of a network failure or power outage.

This version of the Mediatrix 1104 uses the Session Initiation Protocol (SIP), which is a protocol for transporting call setup, routing, authentication, and other feature messages to endpoints within the IP domain.

Using this Manual

The following information provides an explanation of the symbols which appear on the Mediatrix 1104 and in the documentation for the product.



Warning: Means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents.

Waarschuwing: Dit waarschuwingssymbool betekent gevaar. U overtreat in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen.

Varoitus: Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista.

Attention: Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisezvous avec les procédures couramment utilisées pour éviter les accidents.

Warnung: Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewußt.

Avvertenza: Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti.

Advarsel: Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du vare oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker.

Aviso: Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes.

¡Advertencia!: Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes.

Varning!: Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador.



Caution: Caution indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and/or damage to the equipment or property.



Note: Note indicates important information about the current topic.

Safety Warnings

This section lists the following safety warnings:

- Circuit Breaker (15A) Warning
- TN Power Warning
- Product Disposal Warning
- No. 26 AWG Warning
- LAN Port Warning
- Socket Outlet Warning

Circuit Breaker (15A) Warning



Warning: This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors).

TN Power Warning



Warning: The device is designed to work with TN power systems.

Product Disposal Warning



Warning: Ultimate disposal of this product should be handled according to all national laws and regulations.

No. 26 AWG Warning



Warning: To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.

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LAN Port Warning



Warning: Do not connect the LAN port directly to the Public Switched Telephone Network (PSTN), to an off premise application, an out of plant application, any exposed plant application, or to any equipment other than the intended application. Such connection may result in a safety hazard, and/or defective operation and/or equipment damage.

Exposed plant means where any portion of the circuit is subject to accidental contact with electric lighting or power conductors operating at a voltage exceeding 300V between conductors or is subject to lightning strikes.

Socket Outlet Warning



Warning: The socket outlet, if used, shall be located near the equipment and shall be easily accessible by the user.

Safety Recommendations

To insure general safety follow these guidelines:

- Do not open or disassemble this product.
- ▶ Do not get this product wet or pour liquids into it.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.



Caution: When using this equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

- Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.

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End User Technical Support

In order to maximize technical support resources, Mediatrix Telecom, Inc. works through its partners to resolve technical support issues. All end users requiring technical support are encouraged to contact their vendor directly.

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Using the Mediatrix 1104

Now that your administrator has properly set up the Mediatrix 1104, you can dial any number on your phone (which is connected to the Mediatrix 1104) and place the call.

However, you should be aware that the administrator has probably set permissions and restrictions regarding local and long distance calls. Should you encounter any calling problem, please discuss it with your administrator to remedy the problem.

Call Processes

The following examples illustrate some of the various calling processes the Mediatrix 1104 supports. These processes can be adapted at will to suit your needs and requirements.

The Mediatrix 1104 can communicate with the following devices:

- Another telephone or fax connected to the same Mediatrix 1104.
- Another access device on the IP network such as the Mediatrix 1102 or Mediatrix 1124.
- Any LAN Endpoint on the IP network such as:
 - a Soft Phone
 - an IP phone directly connected to the IP network
- A SCN phone or fax. However, the Mediatrix 1104 would need to contact an analog gateway such as the Mediatrix 1204.

Calls Involving Another Access Device

The following example illustrates how to reach a phone or fax on another Mediatrix 1104 access device.

► Phone/Fax -> Mediatrix 1104 A -> Mediatrix 1104 B -> Phone/Fax

A user makes a call with the phone/fax connected to a Mediatrix 1104, which in turn contacts another Mediatrix 1104, then reaches the corresponding phone/fax.



Calls Involving an Access Device and a LAN Endpoint The following examples illustrate how a phone/fax connected to a Mediatrix 1104 access device can communicate with a LAN Endpoint on the IP network.

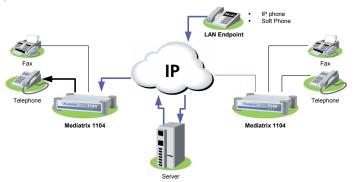
► Phone/Fax -> Mediatrix 1104 -> LAN Endpoint

A user makes a call with the phone/fax connected to a Mediatrix 1104, which reaches the corresponding LAN Endpoint on the IP network.



LAN Endpoint -> Mediatrix 1104 -> Phone/Fax

A LAN Endpoint contacts the Mediatrix 1104, which reaches the corresponding phone/fax connected to the Mediatrix 1104 access device.



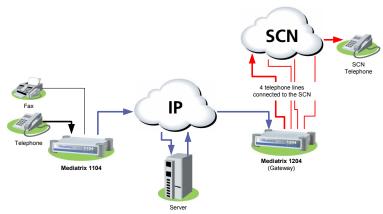
Calls Involving an Analog Gateway

The following example illustrates how a telephone/fax connected to a Mediatrix 1104 access device and a SCN phone can communicate via an analog gateway.

► Phone/Fax -> Mediatrix 1104 -> Mediatrix 1204 (Gateway) -> SCN

A user makes a call with the phone/fax connected to a Mediatrix 1104, which in turn contacts a Mediatrix 1204 gateway, then reaches the corresponding SCN phone.

A SCN user can also contact the Mediatrix 1204 gateway, which in turn contacts the Mediatrix 1104, then reaches the corresponding phone/fax.



Calls Without a SIP Server

You can dial another unit (gateway or access device) without the help of a SIP Server by entering its IP address. See "Dialing an IP Address" on page 6 for more details.





Note: This type of dialing is only possible when the Mediatrix 1104 is configured to allow it. See your network administrator or the *Administration* manual for more details.

Making Calls

Users with telephones or faxes connected to a Mediatrix 1104 dial as if they were on a standard telephony system.

Complete Dialing Sequence

There are three ways to indicate the dialed number sequence is complete and the Mediatrix 1104 can dial the number:

- Your administrator has set up the dialing process so that you must end the telephone number with a particular character to indicate it is complete, e.g. a "#".
- Your administrator has set up the dialing process with a timer. This timer checks the dialing process and, when no further digits have been dialed for the time set by the administrator, it assumes the number is complete and dials it.
- Your administrator has set up the Mediatrix 1104 so it knows exactly how many digits it must collect before it places the call. It finds the number of digits to collect by looking at the first few numbers dialed. For example: a telephone number beginning by 1 should be followed by 10 more digits in North America.

Check with your administrator to determine which dialing process is defined.

Dialing a Telephone Number or Numerical Alias

This section assumes that the Mediatrix 1104 is configured to do SCN emulation. The Mediatrix 1104 could be configured to do any other kind of emulation, thus its users would simply have to dial as if they were using their old system.

To dial a Standard Call:

1. Dial the telephone number as if you were using a standard telephone, with country code and area code when required.

Examples:

8298749 15145701234

A Standard Call uses the server to contact the remote dialed user. The server takes the decision as to redirect the call on the SCN or to keep it on the network. Keeping the call on the network takes precedence over redirecting it on the SCN. If the call needs to go on the SCN, the server redirects it to a proper analog gateway (such as the Mediatrix 1204) that will place the call to the SCN network.



Note: You can dial one star numbers *xx (such as *69). These numbers are automatically inserted in the Request-URL of the SIP INVITE request.

► To dial a Forced SCN call:

- 1. Dial "**".
- 2. Dial the telephone number as if you were using a standard telephone, with country code and area code when required.

Examples:

- **8298749
- **15145701234

A Forced SCN Call allows you to specify that the user you want to reach is located on the SCN network. This leaves no decisions to the server; it must find a proper gateway and place the call on the SCN. This option can be useful only when a SCN number is shadowed by a network number.



Note: A forced SCN call is only be possible if an analog gateway such as the Mediatrix 1204 is available on the IP network.

Making an Urgent Call

In case of emergency, you can make 911-style calls to a pre-defined urgent gateway. The emergency number to dial and the address of the urgent gateway have been set up by your network administrator. You should ask for the number that has been set up so you can make emergency calls if required.

Dialing an IP Address

You can dial another Mediatrix 1104 without the help of a SIP server by entering its IP address and the line you want to reach.



Note: This assumes that your system administrator has properly enabled the IP address call service.

▶ To make an IP address call:

- 1. Dial "**" (IP address prefix).
- 2. Dial the numerical digits of the IP address and use the "*" for the "." of the IP address.
- 3. Dial "#" to terminate the IP address.
- Dial the telephone number of the specific line you want to reach.

For example, let's say you want to reach the telephone connected to Line 2 of the Mediatrix 1104 with the IP address 192.168.0.23. The phone number assigned to Line 2 of this Mediatrix 1104 is 1234. You must then dial the following digits:

```
**192*168*0*23#1234
```

In this case, the Mediatrix 1104 sends an INVITE 1234@192.168.0.23.

Using Basic Telephony Services

The Mediatrix 1104 offers some basic telephony services.

Call Hold

The Call Hold service allows you to temporarily put an existing call on hold.

This assumes that your system administrator has properly enabled the Call Hold service.

► To put the current call on hold:

1. Perform a Flash-Hook.

This puts the call on hold. You can resume the call in the same way.

Second Call

The Second Call service allows you to put an active call on hold, then initiate a new call on the second line. This service is most useful with the transfer and conference services.

This assumes that your system administrator has properly enabled the Second Call service.

To use the second call service:

Perform a Flash-Hook.

This puts the call on hold and the second line is automatically connected to your line.

2. Initiate the second call.

Using the Call Waiting Feature

The call waiting feature alerts you if you are already on the phone and a second call happens. A "beep" (the call waiting tone) is heard and repeated every ten (10) seconds to indicate there is a second incoming call. This assumes that your system administrator has properly enabled the Call Waiting service.

To put the current call on hold:

- Perform a Flash-Hook.
 - This puts the call on hold and the second line is automatically connected to your line.
- **2.** Answer the call on the second line.

To switch from one line to the other:

 Perform a Flash-Hook each time you want to switch between lines.

► To terminate the first call before answering the second call:

- 1. Hang up the phone.
- **2.** Wait for the phone to ring.
- **3.** Answer the phone.

The second call is on the line.

Removing the Call Waiting Tone

You can temporarily activate/deactivate the call waiting tone indicating a call is waiting. This is especially useful when transmitting faxes. If you are about to send a fax, you can thus deactivate the call waiting tone to ensure that the fax transmission is not disrupted by an unwanted second call. When the fax transmission is completed and the line is onhook, the call waiting tone is automatically reactivated.

This assumes that your system administrator has properly enabled the Call Waiting Cancel service.

➤ To deactivate the call waiting tone:

- 1. Take the receiver off-hook.
- 2. Wait for the dial tone.
- 3. Dial the sequence your system administrator has implemented to deactivate the call waiting tone.

This sequence could be something like *70.

4. Wait for the transfer tone (three "beeps") followed by the dial tone.

The call waiting tone is disabled.

To re-enable the call waiting tone:

- 1. Take the receiver off-hook.
- **2.** Replace the receiver on-hook.

The call waiting tone is re-enabled.

Using the Call Transfer Features

The call transfer features allow you to transfer a current call to any other extension or phone number. There are two (2) types of call transfer features available:

- attended transfer
- blind transfer

Attended Call Transfer

The attended call transfer (also known as call transfer with consultation) allows you to transfer a current call to any other extension or phone number. The individual at the other extension or phone number must answer to complete the transfer.

This assumes that your system administrator has properly enabled the Attended Call Transfer service.

To transfer a current call attended:

- Perform a Flash-Hook.
 This puts the call on hold.
- **2.** Wait for the transfer tone (three "beeps").
- Dial the number to which you want to transfer the call.The third party answers.
- **4.** Hang up your phone.

The call is transferred.

5. If you want to get back to the first call (the call on hold), you must perform two Flash-Hooks.

You are back with the first call and the third party is released.



Note: If the number to which you want to transfer the call is busy or does not answer, quickly perform a Flash-Hook. The busy tone or ring tone is cancelled and you are back with the first call.

Blind Call Transfer

The blind call transfer (also known as call transfer without consultation or unattended) allows you to transfer a current call to any other extension or phone number. The individual at the other extension or phone number does not need to answer to complete the transfer.

This assumes that your system administrator has properly enabled the Blind Call Transfer service.

To transfer a current call blind:

- Perform a Flash-Hook.
 This puts the call on hold.
- **2.** Wait for the transfer tone (three "beeps").
- 3. Dial the number to which you want to transfer the call.
- 4. Wait for the ringback tone, then hang up your phone. The call is transferred. You can also wait for the third party to answer if you want. In this case, the call transfer becomes attended.
- 5. If you want to get back to the first call (the call on hold), you must perform two Flash-Hooks.
 - You are back with the first call and the third party is released.

Using the Call Forward Feature

Using the Call For- There are three types of Call Forward:

- Unconditional
- On Busy
- On No Answer

Call Forward Unconditional

The Call Forward – Unconditional feature allows you to forward your calls to another extension or line. When forwarding your calls outside the system, a brief ring is heard on your phone to remind you that the call forward service is active. You can still make calls from your phone.

This assumes that your system administrator has properly enabled the Call Forward – Unconditional service.

► To forward calls:

- Take the receiver off-hook.
- **2.** Wait for the dial tone.
- Dial the sequence your system administrator has implemented to activate the call forward – unconditional service.

This sequence could be something like *70.

- **4.** Wait for the transfer tone (three "beeps") followed by the dial tone.
- Dial the number to which you want to forward your calls.Dial any access code if required.
- **6.** Wait for three "beeps" followed by a silent pause.

The call forward is established.

7. Hang up your phone.

The calls are checked against the digit maps set up by your system administrator. See your system administrator for more information.

► To check if the call forward has been properly established:

- Take the receiver off-hook.
- 2. Wait for the dial tone.
- Dial your extension or phone number.The call is forwarded to the desired phone number.

4. Hang up your phone.

To cancel the call forward:

- Take the receiver off-hook.
- 2. Wait for the dial tone.
- Dial the sequence your system administrator has implemented to deactivate the call forward – unconditional service.

This sequence could be something like *71.

4. Wait for the transfer tone (three "beeps") followed by the dial tone.

The call forward is cancelled.

5. Hang up your phone.

Call Forward on Busy

The Call Forward – On Busy feature allows you to forward your calls to a pre-determined extension if you are already on the line.

This assumes that your system administrator has properly enabled the Call Forward on Busy service.

► To forward calls:

- Take the receiver off-hook.
- 2. Wait for the dial tone.
- Dial the sequence your system administrator has implemented to activate the call forward on busy service.

This sequence could be something like *72.

- **4.** Wait for the transfer tone (three "beeps") followed by the dial tone.
- Dial the number to which you want to forward your calls.Dial any access code if required.
- **6.** Wait for three "beeps" followed by a silent pause.

The call forward is established.

7. Hang up your phone.

The calls are checked against the digit maps set up by your system administrator. See your system administrator for more information.

To cancel the call forward:

- Take the receiver off-hook.
- **2.** Wait for the dial tone.
- Dial the sequence your system administrator has implemented to deactivate the call forward on busy service.
 - This sequence could be something like *73.
- **4.** Wait for the transfer tone (three "beeps") followed by the dial tone.

The call forward is cancelled.

5. Hang up your phone.

Call Forward on No Answer

The Call Forward – On No Answer feature allows you to forward your calls to a pre-determined extension if you do not answer before a specific amount of time. This amount of time has been set up by your system administrator.

This assumes that your system administrator has properly enabled the Call Forward on No Answer service.

➤ To forward calls:

- 1. Take the receiver off-hook.
- **2.** Wait for the dial tone.
- Dial the sequence your system administrator has implemented to activate the call forward on no answer service.

This sequence could be something like *74.

- **4.** Wait for the transfer tone (three "beeps") followed by the dial tone.
- Dial the number to which you want to forward your calls.Dial any access code if required.
- **6.** Wait for three "beeps" followed by a silent pause.

The call forward is established.

7. Hang up your phone.

The calls are checked against the digit maps set up by your system administrator. See your system administrator for more information.

➤ To cancel the call forward:

- Take the receiver off-hook.
- 2. Wait for the dial tone.
- Dial the sequence your system administrator has implemented to deactivate the call forward on no answer service.

This sequence could be something like *75.

4. Wait for the transfer tone (three "beeps") followed by the dial tone.

The call forward is cancelled.

5. Hang up your phone.

Conferencing Calls

A conference call between two or more parties can be set up. Note that:

- Only 3-way conferences are supported.
- Any participant of the conference can put the conference on hold and make other calls. This participant may then rejoin the conference at a later time by unholding it. The participant that has initiated the conference cannot put the conference on hold.

This assumes that your system administrator has properly enabled the Conference service.

Requirements

For the conference call to occur successfully, all parties must meet the following requirements:

- Support at least one of the PCM codecs (G.711 μ-law and G.711 A-law) enabled on the line that is having the conference.
- Ability to dynamically change codec during a call.
- The packetization period (ptime) should be the same for all the partcipants of the conference. If this is not the case, then part of the conversation may be lost, resulting in a choppy voice. For better results, Mediatrix Telecom, Inc. recommends to set the packetization period of all participants of a 3-way conference to 30 milliseconds.

Managing a Conference Call

If you are on the phone with one person and want to conference with a third one, you can do so. In the following examples, let's assume that:

- A is the conference initiator.
- ▶ B is the person called on the first line.
- C is the person called on the second line.

► To initiate a three-way conference (A and B already connected):

A performs a Flash-Hook.

This puts B on hold and the second line is automatically connected. A hears a dial tone.

2. A dials C's number.

A and C are now connected.

3. A performs another Flash-Hook.

The call on hold (B) is reactivated. A is now conferencing with B and C.

▶ A wants to transfer B to C during the conference:

1. A hangs up.

The conference is terminated. B and C are now connected.

➤ A wants to terminate the call with C and get back to the call with B during the conference:

1. A performs a Flash-Hook.

The conference is terminated and the call with C is disconnected. A and B are still connected and can go on with their conversation.

► B (or C) hangs up during the conference:

1. B (or C) hangs up during the conference.

The conference is terminated, but the call between A and C (or B) is not affected and they are still connected.

Using the Automatic Speed Dialing

When using the automatic speed dialing, a specific number is automatically dialed upon taking the receiver off hook. This number has been set up by your system administrator.

APPENDIX



Standards Compliance

This Appendix lists the various standards compliance of the Mediatrix 1104.

Standards Supported

The Mediatrix 1104 complies to the following standards:

Table 1: Standards Compliance

Category	Specification
Agency approvals	 cULus JATE European Union, CE mark (Declaration of Conformity)
Safety standards	 UL60950 3rd Edition (2000) CAN/CSA-C22.2 No. 60950-00 AS/NZS 3260:1993 ACA TS001:1997 IEC 60950 (3rd Edition (1999) with all national deviations)
Emissions	 FCC Part 15:1998 Class B EN55022 (1994) Class B(With amendments A1 and A2) AS/NZS 3548:1995 Class B EN61000-3-2 (1995) Harmonic current emissions EN61000-3-3 (1995) Voltage fluctuations and flicker
Immunity	 EN55024:1998 including the following: EN61000-4-2 (1995), ESD EN61000-4-3 (1996), Radiated RF EN61000-4-4 (1995), Burst Transients EN61000-4-5 (1995), Surge EN61000-4-6 (1996), Conducted RF EN61000-4-11 (1995), Voltage Dips and Interruptions

Category	Specification
Telecom	 FCC Part 68:Subpart D Industry Canada (CS-03, Issue 8, Part 1)
	TBR 21: January 1998ACA TS002 - 1997

Table 1: Standards Compliance (Continued)



Note: The standards compliance of the Mediatrix 1104 are printed on a sticker located on the bottom of the unit.

Disclaimers

The following are the disclaimers related to the Mediatrix 1104.

Federal Communications Commission (FCC) Part 15 This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help



Note: Any changes or modifications not expressly approved by Mediatrix Telecom, Inc. could void the user's authority to operate the equipment.

Federal Communications Commission (FCC) Part 68 This equipment complies with Part 68 of the FCC Rules. On the underside of this equipment is a label that contains, among other information, the FCC Registration Number, Ringer Equivalence Number (REN) and USOC jack type for this equipment. You must, upon request, provide this information to your telephone company.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your telephone company to determine the maximum REN for your calling area. If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify you in advance, but if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact Mediatrix Telecom, Inc. for information on how to obtain service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company.

Connection to party lines is subject to state tariffs.

INSTALLATION

This device is equipped with an USOC RJ-11C connector.

Industry Canada

The Industry Canada Label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.



Warning: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.



Note: The Ringer Equivalence Number (REN) for this terminal equipment is 0.0. The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Number of all the devices does not exceed 5.



Note: This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

CE Marking

is given.

DECLARATION OF CONFORMITY

We Mediatrix Telecom, Inc. located at 4229 Garlock st. Sherbrooke, Québec, Canada J1L 2C8 declare that for the hereinafter mentioned product the presumption of conformity with the applicable essential requirements of DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT (RTTE DIRECTIVE)

Any unauthorized modification of the product voids this declaration.

For a copy of the original signed Declaration Of Conformity please contact Mediatrix Telecom, Inc. at the above address.



Glossary

Area Code The preliminary digits that a user shall dial to be connected to a particular outgoing trunk group or line. In North America, an area code has three (3) digits and is used with a NXX (office code) number. For instance, in the North American telephone number 561-955-1212, the numbers are defined as follows:

Table 2: North American Numbering Plan

No.	Description
561	Area code, corresponding to a geographical zone in a non-LNP (Local Number Portability) network.
955	NXX (office code), which corresponds to a specific area such as a city region.
1212	Unique number to reach a specific destination.

Outside North America, the area code may have any number of digits, depending on the national telecommunication regulation of the country. In France, for instance, the numbering terminology is defined as xZABPQ 12 34, where:

Table 3: France Numbering Plan

No.	Description
х	Operator forwarding the call. This prefix can be made of 4 digits.
Z	Geographical (regional) zone of the number (in France, there are 5 zones). It has two (2) digits.
ABPQ	First four (4) digits corresponding to a local zone defined by central offices.
12 34	Unique number to reach a specific destination.

In this context, the area code corresponds to the *Z* portion of the numbering plan. Since virtually every country has a different dialing plan nomenclature, it is recommended to identify the equivalent of an area code for the location of your device.

Country Code (CC) In international direct telephone dialing, a code that consists of 1-, 2-, or 3-digit numbers in which the first digit designates the region and succeeding digits, if any, designate the country.

Frequency (DTMF)

Dual-Tone Multi- In telephone systems, multi-frequency signaling in which a standard set combinations of two specific voice band frequencies, one from a group of four low frequencies and the other from a group of four higher frequencies, are used. Although some military telephones have 16 keys, telephones using DTMF usually have 12 keys. Each key corresponds to a different pair of frequencies. Each pair of frequencies corresponds to one of the ten decimal digits, or to the symbol "#" or "*". the "*" being reserved for special purposes.

Protocol (DHCP) servers.

Dynamic Host TCP/IP protocol that enables PCs and workstations to get temporary Configuration or permanent IP addresses (out of a pool) from centrally-administered

Flash-Hook Quickly depressing and releasing the plunger in or the actual handsetcradle to create a signal to a PBX or Centrex that special instructions will follow such as transferring the call to another extension.

FXS Line Foreign Exchange Service/Station. A network-provided service in which a telephone in a given local exchange area is connected, via a private line, to a central office in another, i.e., "foreign", exchange, rather than the local exchange area's central office. A FXS line is normally connected to a standard telephone, fax or modem.

Gateway A device that links two different types of networks that use different protocols (for example, between the packet network and the Public Switched Telephone Network).

Internet Protocol (IP) The IP protocol is a standard describing software that keeps track of the Internet's addresses for different nodes, routes outgoing messages, and recognizes incoming messages.

Light Emitting Diode A semiconductor diode that emits light when a current is passed **(LED)** through it.

Local Area Network Data-only communications network confined to a limited geographic (LAN) area, with moderate to high data rates. Contrasts with WAN.

Network A group of two or more computer systems that are linked.

Off-hook A line condition caused when a telephone handset is removed from its cradle.

On-hook A line condition caused when a telephone handset is resting in its cradle.

Packet Group of bits transmitted as a complete package on a packet-switched network.

Port Network access point, the identifier used to distinguish among multiple simultaneous connections to a host.

Private Branch A small to medium sized telephone system and switch that provides **Exchange (PBX)** communications between onsite telephones and exterior communications networks.

Protocol Defines a common set of rules and signals that computers on the network use to communicate.

Public Switched The local telephone company network that carries voice data over Telephone Network (PSTN)

The local telephone company network that carries voice data over analog telephone lines.

Server A computer or device on a network that works with a client to perform some operation.

Session Initiation Protocol for transporting call setup, routing, authentication, and other **Protocol (SIP)** feature messages to endpoints within the IP domain.

Simple Network Protocol governing network management and the monitoring of Management Protocol network devices and their functions.

(SNMP)

Switched Circuit A communication network, such as the Public Switched Telephone
 Network (SCN) Network (PSTN), in which any user may be connected to any other user through the use of message, circuit, or packet switching and control devices.

T.38 An ITU-T Recommendation for Real-time fax over IP. T.38 addresses IP fax transmissions for IP-enabled fax devices and fax gateways, defining the translation of T.30 fax signals and Internet Fax Protocols (IFP) packets.

Telephony The science of translating sound into electrical signals, transmitting them, and then converting them back into sound.

Transmission Control A suite of communications protocols developed by the Department of **Protocol/Internet** Defense in the 1970s that connects hosts on the Internet and provides **Protocol (TCP/IP)** the standards for transmitting data over networks.

Trivial File Transfer Allows for transferring files (such as software upgrades) from a remote **Protocol (TFTP)** device.

Voice Over IP (VoIP) The technology used to transmit voice conversations over a data network using the Internet Protocol. Such data network may be the Internet or a corporate Intranet.

Wide Area Network A computer network where the computers are not geographically close and are linked by telephone lines or radio waves.





List of Acronyms

AWG American Wire Gauge

CE Cummunauté européenne (French)

DHCP Dynamic Host Configuration Protocol

DTMF Dual-Tone Multi-Frequency

FCC Federal Communications Commission (USA)

FXS Foreign eXchange Service/Station

IP Internet Protocol

ITU International Telecommunication Union

LAN Local Area Network
LED Light Emitting Diode

PBX Private Branch eXchange
PCM Pulse Code Modulation

PSTN Public Switched Telephone Network

REN Ringer Equivalence Number

SCN Switched Circuit Network
SIP Session Initiation Protocol

SNMP Simple Network Management Protocol

TCP/IP Transmission Control Protocol/Internet Protocol

TFTP Trivial File Transfer Protocol

UL Underwriters Laboratories Incorporated

VoIP Voice over Internet Protocol

WAN Wide Area Network

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Mediatrix Telecom, Inc. welcomes your evaluation of this manual and any suggestions you may have. These help us to improve the quality and usefulness of our publications.

Please send your comments to:

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Manual Name: *Mediatrix 1104 User's Manual (SIP Version)* Software Version: 4.4 Revision: F Date: April 2, 2004

	Excellent	Good	Fair	Poor	
How would you rate the manual overall?					
Are the Installation instructions effective?					
Are the Configuration instructions effective?					
Is the manual properly organized?					
Are the diagrams clear, easy to understand and useful?					
Are the suggested and default values useful?					
Is the index useful?					
Is the glossary accurate?					
Did you find any errors in the manual? (Please reference page, paragraph, table, or figure number)					
How might we improve this manual?	· · · · · · · · · · · · · · · · · · ·	 	······································		
			 		
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