

E&M CAS Configuration

All Mediatrix Products

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Basic Concepts

Channel Associated Signaling (CAS)

When using CAS signaling, each traffic channel has a dedicated signaling channel. In other words, the signaling for a particular traffic circuit is permanently associated with that circuit.

E&M (earth & magneto, or ear & mouth) is a type of CAS signalling that defines line signaling and register signaling. It is also called Signalling System R1 and is mainly used in North America. E&M was originally developed to allow PABXs in different geographic locations to communicate over an analog private circuit. Some digital interfaces such as CAS also use versions of E&M signaling.

The terms forwards and backwards are heavily used in descriptions of E&M.

- Forwards is the direction from the calling party to the called party.
- Backwards is the direction from the called party to the calling party.

E&M Auto-Configuration

The E&M Auto-configuration feature allows the detection and the configuration of all, or a specific, E&M interfaces so that the E&M link goes up and becomes usable with a minimal user interaction.

When launching an auto-configuration process, it stops automatically when all selected interfaces have been tested. For each interface, the auto-configuration process is considered a success when the link becomes up or a failure when all combinations have been tried without having a link up.

During E&M Auto-Configuration, the following parameters are updated:

- PortPinout : TE / NT
- ClockMode : MASTER / SLAVE
- LineCoding : B8ZS / AMI
- LineFraming : SF / ESF

E&M Preset Configurations

It is possible to save a set of configuration as presets for future E&M connections.

Using preset files is especially useful for units that do not use the default values provided by Media5. These preset configuration files are located in the file system's persistent memory listed in the DGW Web interface, under **Management/File** and they differ depending on the Mediatrix unit you are using.

Note: Only script files can be used as R2 Preset configuration.

It is also possible to export the current E&M configuration in a Preset Configuration file.

Note: User-defined presets are not kept in the event of a factory reset.

Installed configuration scripts/images are listed in the DGW Web interface, under **Management/File**

Basic Tasks

Setting the Mediatrix Unit to Use the E&M Signaling Protocol

Steps

- 1) Go to **System/Hardware**.
- 2) In the **PRI Ports Configuration** table, located on the same line as the port you wish to dedicate to **E&M** signaling, from the **Signaling** selection list, choose **E&M**.

Note: When changing from E&M to ISDN/R2 or ISDN/R2 to E&M, you must change your routes accordingly. For instance, if you are in ISDN with a route isdn-Slot2/E1T1, then change to E&M, you must change the route to e&m-Slot2/E1T1.

- 3) From the **Line Type** selection list, choose **T1**.
- 4) Click **Apply**.
- 5) Restart the unit.

Result

PRI Ports Configuration			
Port	Line Type	Signaling	
Slot1/E1T1	T1	E&M	

Configuring E&M CAS Parameters

Steps

- 1) Go to **E&M/E&M Configuration**.
- 2) From the **Select Interface** selection list, choose an E&M interface.

Note: The number of available interfaces depends on the Mediatrix unit model.

- 3) In the **Interface Configuration** table, configure the fields as required.
- 4) Click **Apply**

Result

Interface Configuration		
Clock Mode:	Slave	▼
Port Pinout:	Auto	▼
Monitor Link State:	Enable	▼
Line Coding:	B8ZS	▼
Line Framing:	ESF	▼
Channel Range:	1-24	
Channel Allocation Strategy:	Ascending	▼
Maximum Active Calls:	0	
Encoding Scheme:	G.711 a-Law	▼
E&M Signaling Type Selection:	Wink Start	▼
Digit Attenuation:	0	

Auto-Configuring E&M

Information

Launching auto-configuration may terminate abruptly all ongoing E&M calls.

Steps

- 1) Go to **E&M/Status**.
- 2) In the **Automatic Configuration** table, from the selection list, choose the interface to auto-configure.

Note: Please note that some parameters cannot be auto-configured. For instance, the clock mode is configured according to the endpoint type, master for NT and slave for TE.

- 3) Click **Start Sensing**.

Result

Auto-configuration on all E&M interfaces may take some time to complete. Some of the current E&M settings might be replaced by new values.

Automatic Configuration	
Status:	Slot1/E1T1 Start Sensing
Last Result:	None

Saving an E&M Preset Configuration

Steps

- 1) Go to **E&M/Status**.
- 2) In the **E&M Preset Configuration** table, in the **Preset Name** field, indicate the name of the Preset.
- 3) Click **Save**.

Result

The current E&M configuration is exported. to the File management system. The preset configuration will be available in the **Suggestion** selection list.

E&M Preset Configuration	
Local Preset:	--- Suggestion --- Apply
Preset Name:	Eam_Preset_Config_Name Save

Using an E&M Preset Configuration

Steps

- 1) Go to **E&M/Status**.
- 2) In the **E&M Preset Configuration** table, from the **Local Preset** selection list, choose the configuration file to apply.
- 3) Click **Apply**.

Result

The selected configuration is applied

E&M Preset Configuration	
Local Preset:	--- Suggestion --- Apply
Preset Name:	Save

Advanced Configuration Tasks

Overriding Country Default E&M Signaling Variants

Information

Overriding the default settings is considered an advanced configuration. Media5 recommends not to modify the signalling variants unless you know exactly what you are doing.

Steps

- 1) Go to **E&M/Signaling**.
- 2) From the **Select Interface** selection list, choose an E & M interface.

Note: The number of available interfaces depends on the Mediatrix unit model.

- 3) In the **E&M Signaling Type** table, from the **Override Default Signaling Settings** selection list, choose **Enable**.
- 4) Click **Reset to Default** to update the values with the selected country.

Note: Once the **Override Default Country Settings** is enabled, the indicated values in the table are not from the specified country in the **Country Selection**. To get the appropriate values of the selected country, you must reset the table values first.

- 5) In the **E&M Signaling Variants** table, complete the fields as required.
- 6) Click **Apply**.

Result

This is an example of configuration.

E&M Signaling Type	
E&M Signaling Type Selection:	Wink Start
Override Default Signaling Settings:	Enable ▾

E&M Signaling Variants	
Parameters	Value
Bits BCD:	8
ANI Length:	0
DNIS Length:	0
Incoming Register Signaling:	DTMF ▾
Outgoing Register Signaling:	DTMF ▾
Incoming Dial Map:	%dnis%t
Outgoing Dial Map:	%dnis%t
Wait Wink:	Enable ▾
Wait Wink Ack:	Disable ▾
Send Wink:	Enable ▾
Send Wink Ack:	Disable ▾

Overriding Country Default E&M Timers Variants

Information

Overriding the default settings is considered an advanced configuration. Media5 recommends not to modify the signalling variants unless you know exactly what you are doing.

Steps

- 1) Go to **E&M/Timers**.
- 2) From the **Select Interface** selection list, choose an E & M interface.

Note: The number of available interfaces depends on the Mediatrix unit model.
- 3) In the **E&M Signaling Type** table, from the **Override Default Signaling Settings** selection list, choose **Enable**.
- 4) Click **Reset to Default** to update the values with the selected country.

Note: Once the **Override Default Country Settings** is enabled, the indicated values in the table are not from the specified country in the **Country Selection**. To get the appropriate values of the selected country, you must reset the table values first.

- 5) In the **E&M Timers Variants**, complete the fields as required.
- 6) Click **Apply**.

Result

This is an example of configuration.

E&M Signaling Type	
E&M Signaling Type Selection:	Wink Start
Override Default Signaling Settings:	Enable ▾

E&M Timers Variants	
Parameters	Value
Backward Wait Pre Wink Timeout:	50
Backward Send Wink Timeout:	200
Backward Wait First Digit Timeout:	10000
Backward Clear Backward Timeout:	2000
Backward Digit Complete Timeout:	4000
Forward Wait Wink Timeout:	5000
Forward Wait Max Wink On Timeout:	5000
Forward Wait Pre Dial Timeout:	140
Forward Wait Answer Timeout:	180000
Forward Clear Forward Timeout:	2000
Release Guard Timeout:	200

Overriding Country Default E&M Digit Timers Variants

Information

Overriding the default settings is considered an advanced configuration. Media5 recommends not to modify the signalling variants unless you know exactly what you are doing.

Steps

- 1) Go to **E&M/Digit Timers**.
- 2) From the **Select Interface** selection list, choose an E & M interface.

Note: The number of available interfaces depends on the Mediatrix unit model.

- 3) In the **E&M Signaling Type** table, from the **Override Default Signaling Settings** selection list, choose **Enable**.

- 4) Click **Reset to Default** to update the values with the selected country.

Note: Once the **Override Default Country Settings** is enabled, the indicated values in the table are not from the specified country in the **Country Selection**. To get the appropriate values of the selected country, you must reset the table values first.

- 5) In the **E&M Digit Timers Variants**, complete the fields as required.
- 6) Click **Apply**.

Result

This is an example of configuration

E&M Signaling Type		
E&M Signaling Type Selection:	Wink Start	
Override Default Signaling Settings:	Enable v	

E&M Digit Timers Variants		
Parameters	Value	
KP On Timeout:	100	
KP Off Timeout:	68	

Overriding Country Default E&M Link Timers Variants

Information

Overriding the default settings is considered an advanced configuration. Media5 recommends not to modify the signalling variants unless you know exactly what you are doing.

Steps

- 1) Go to **E&M/Link Timers**.
- 2) From the **Select Interface** selection list, choose an E & M interface.

Note: The number of available interfaces depends on the Mediatrix unit model.

- 3) In the **E&M Signaling Type** table, from the **Override Default Signaling Settings** selection list, choose **Enable**.
- 4) Click **Reset to Default** to update the values with the selected country.

Note: Once the **Override Default Country Settings** is enabled, the indicated values in the table are not from the specified country in the **Country Selection**. To get the appropriate values of the selected country, you must reset the table values first.

- 5) In the **E&M Link Timers Variants**, complete the fields as required.
- 6) Click **Apply**.

Result

This is an example of configuration.

E&M Signaling Type		
E&M Signaling Type Selection:	Wink Start	
Override Default Signaling Settings:	Enable v	

E&M Link Timers Variants		
Parameters	Value	
Link Activation Timeout:	1000	
Link Activation Retry Timeout:	3000	

Advanced E&M CAS Parameters

The PRI statistics are available in the **Hardware.StatsInfo** table. To reset the statistics, you must set "ResetStats" in the **Hardware.StatsInfo.ResetStats** parameter.

Online Help

If you are not familiar with the meaning of the fields and buttons, click **Show Help**, located at the upper right corner of the Web page. When activated, the fields and buttons that offer online help will change to green and if you hover over them, the description will be displayed.

DGW Documentation

Mediatrix devices are supplied with an exhaustive set of documentation.

Mediatrix user documentation is available on the [Media5 Documentation Portal](#).

Several types of documents were created to clearly present the information you are looking for. Our documentation includes:

- **Release notes:** Generated at each GA release, this document includes the known and solved issues of the software. It also outlines the changes and the new features the release includes.
- **Configuration notes:** These documents are created to facilitate the configuration of a specific use case. They address a configuration aspect we consider that most users will need to perform. However, in some cases, a configuration note is created after receiving a question from a customer. They provide standard step-by-step procedures detailing the values of the parameters to use. They provide a means of validation and present some conceptual information. The configuration notes are specifically created to guide the user through an aspect of the configuration.
- **Technical bulletins:** These documents are created to facilitate the configuration of a specific technical action, such as performing a firmware upgrade.
- **Hardware installation guide:** They provide the detailed procedure on how to safely and adequately install the unit. It provides information on card installation, cable connections, and how to access for the first time the Management interface.
- **User guide:** The user guide explains how to customise to your needs the configuration of the unit. Although this document is task oriented, it provides conceptual information to help the user understand the purpose and impact of each task. The User Guide will provide information such as where and how TR-069 can be configured in the Management Interface, how to set firewalls, or how to use the CLI to configure parameters that are not available in the Management Interface.
- **Reference guide:** This exhaustive document has been created for advanced users. It includes a description of all the parameters used by all the services of the Mediatrix units. You will find, for example, scripts to configure a specific parameter, notification messages sent by a service, or an action description used to create Rulesets. This document includes reference information such as a dictionary, and it does not include any step-by-step procedures.

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