



Micromedia International

**Technical study
ALERT and CAPI
modems**

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Installation of ISDN CAPI modems

Réf. : ETT_20081030_000001.docx

This document details how to install ISDN modems with CAPI interface to work with ALERT

Distribution	TO	CC	Company

Attached documents:

To work with ALERT, ISDN modems must provide the CAPI 2.0 interface.

There are two classes of modems, irrespective of the manufacturer:

- Passive modems (without DSP)
- Active modems (with DSP)

In Windows, only one passive modem can be installed and used.

For active modems, it is possible to use several of them only if they have the same manufacturer.

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System installation

Installation of equipment is unique to each manufacturer. The installer must comply with the instructions provided by the manufacturer. You must however make sure that you install the CAPI drivers.

CAPI drivers installation

ALERT uses the CAPI interface to communicate with the hardware. An ISDN modem not offering this interface cannot be used as described in this document.

The CAPI driver installation is usually very simple. The only problematic case would be when installing a driver on a system where a driver from a different manufacturer is already installed.

Reminder: modems from different manufacturers can not coexist!

For example, on a system, a Fritz USB modem has been installed. The modem is not plugged in, and a Dialogic modem will be installed. In this situation, the user will experience dysfunctions due to the presence of the drivers of two manufacturers!

The solution for the successive installation of modems from different manufacturers:

- Uninstall the drivers of the hardware to remove (the modem should always be present)
- Remove Hardware
- Remove the CAPI registry key "HKEY_LOCAL_MACHINE\SOFTWARE\CAPI20"
- Installation of new hardware

Supported protocol test

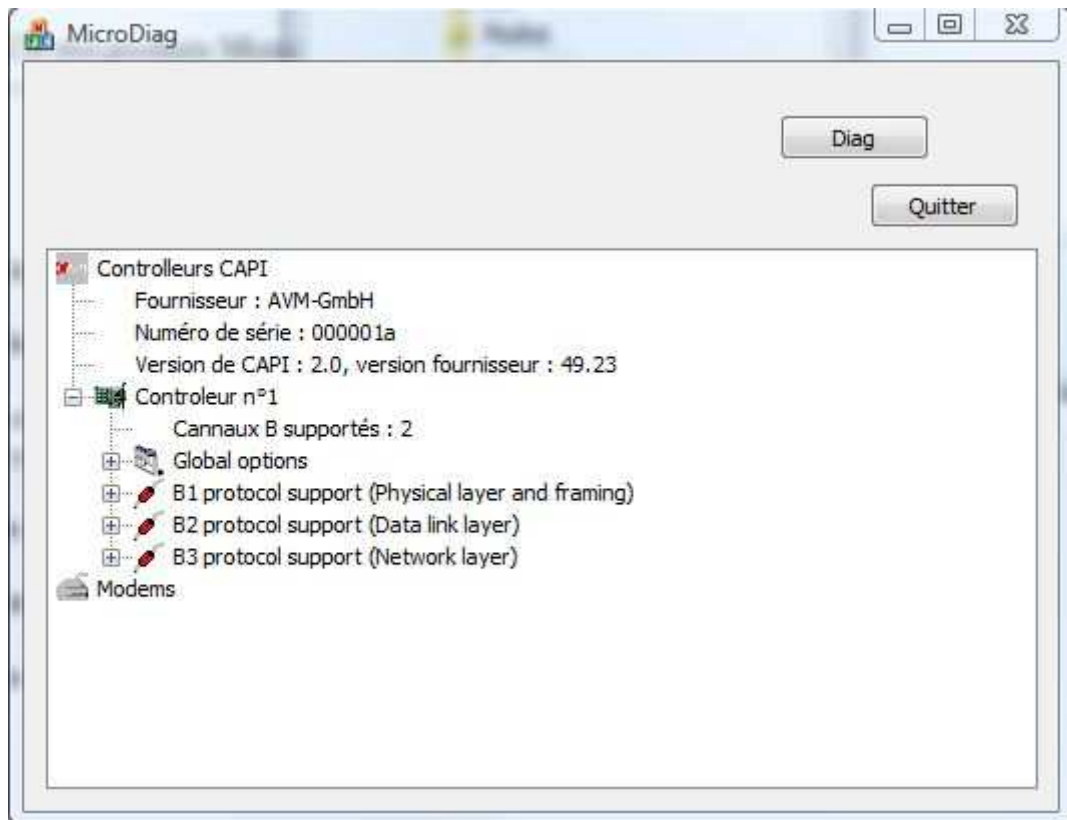
All CAPI compatible devices do not offer the same ISDN services. For his part, ALERT can use these media types:

- Vocal
- Fax
- Data

Some modems do not allow the use of all these media. In fact, depending on the operators to contact, ALERT will occasionally have to emulate an analog modem with an ISDN modem, or send a fax...

Before configuring ALERT, it is important to know the media to use and whether the selected ISDN modem can interface with these media.

On the Micromedia product CD, a utility called MicroDiag is available in the "Utilities" folder. It can query the CAPI hardware and display its services.



To use it, click on « Diag » then double click on the CAPI controller. To view the supported services, unfold the tree.

For vocal :

Global options : DTMF support
B1 : 64 kbits Transparent
B2 : Transparent
B3 : Transparent

For fax :

B1 : T30 group 3 fax
B2 : T30 group 3 fax
B3 : T30 group 3 fax

For the analog modem emulation:

B1 : modem asynchronous operation with start/stop byte framing
B2 : Transparent
B3 : Transparent

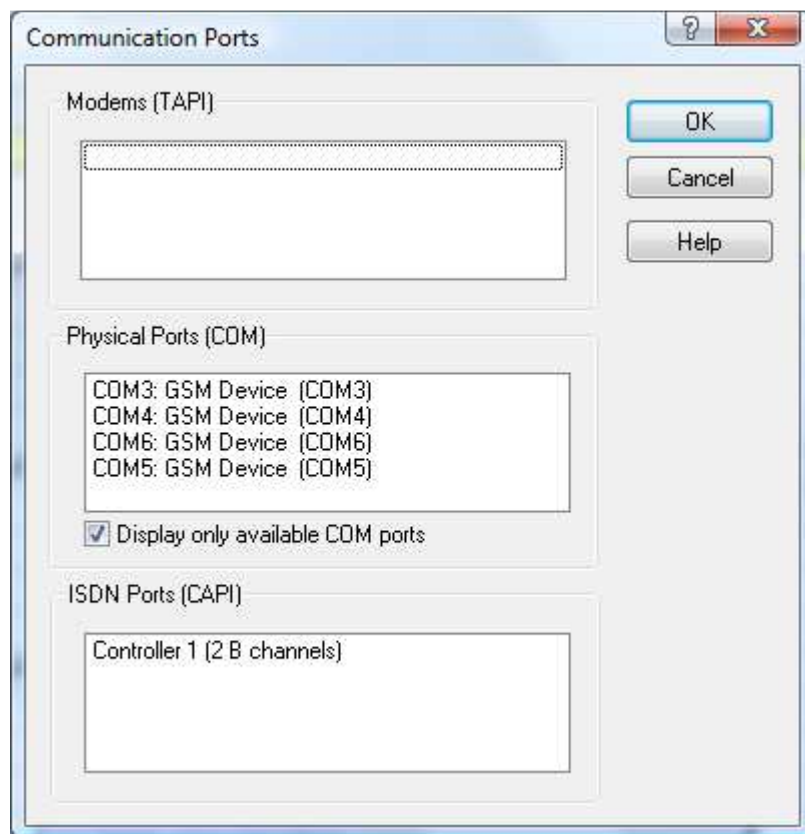
ALERT configuration

Once the hardware is installed on the system, Alert needs to be configured to use the ISDN modem. In ALERT, communication will be done through a "communication port".

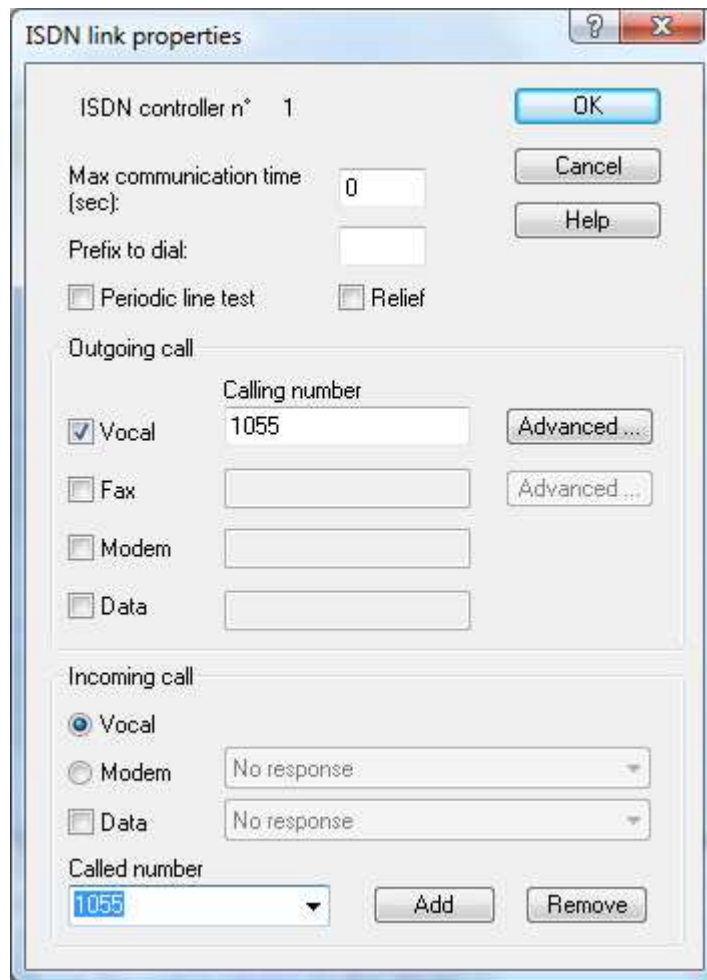
Adding a port

To add an ISDN port, go to « Configuration/Communication ».

The dialog box below will show. If an ISDN modem is installed, it is possible to select a CAPI controller in the ISDN ports list.



Click OK to access the ISDN port properties.



Outgoing calls

Depending on the media to call via this port and the ISDN services offered by the controller, check the boxes "Vocal", "fax", "modem" or "data".

"Vocal" and "fax" enable voice calls or faxes, the option "modem" emulates an analog modem and "data" supports the sending of digital data.

If an ALERT CAPI port can call multiple media types, it can only make one call simultaneously.

To make multiple calls at the same time, we must define several ports in ALERT.

Incoming calls

Similarly, ALERT can receive incoming calls on various ISDN services except for fax.

ALERT can respond to calls to multiple numbers: to enable this, fill in the "Called number" field with the number of the correspondent who seeks to call Alert

To answer all calls enter "*" in the "Called number" field.

A port can be set to outgoing and/or incoming but only one single communication can be ensured. If the port is occupied by an outgoing call, it cannot be used for an incoming call. The port must first be released before dialing or answering another call.

Port and CIP management

Simultaneous calls

An ISDN modem allows multiple simultaneous calls: as many as B channels. ALERT will therefore make as many calls simultaneously as there are B channels. To do so, you will create as many CAPI ports as channels.

However, it is possible to create more CAPI port then channels, knowing all the ports will not call simultaneously.

This gives the user the ability to reserve certain ports for certain media or certain incoming calls.

Port filtering and reservation

Each port can call or be called with several media. But it may be worth reserving a port for a media. Similarly, with the configuration of incoming / outgoing calls, it is possible to reserve resources for incoming calls.

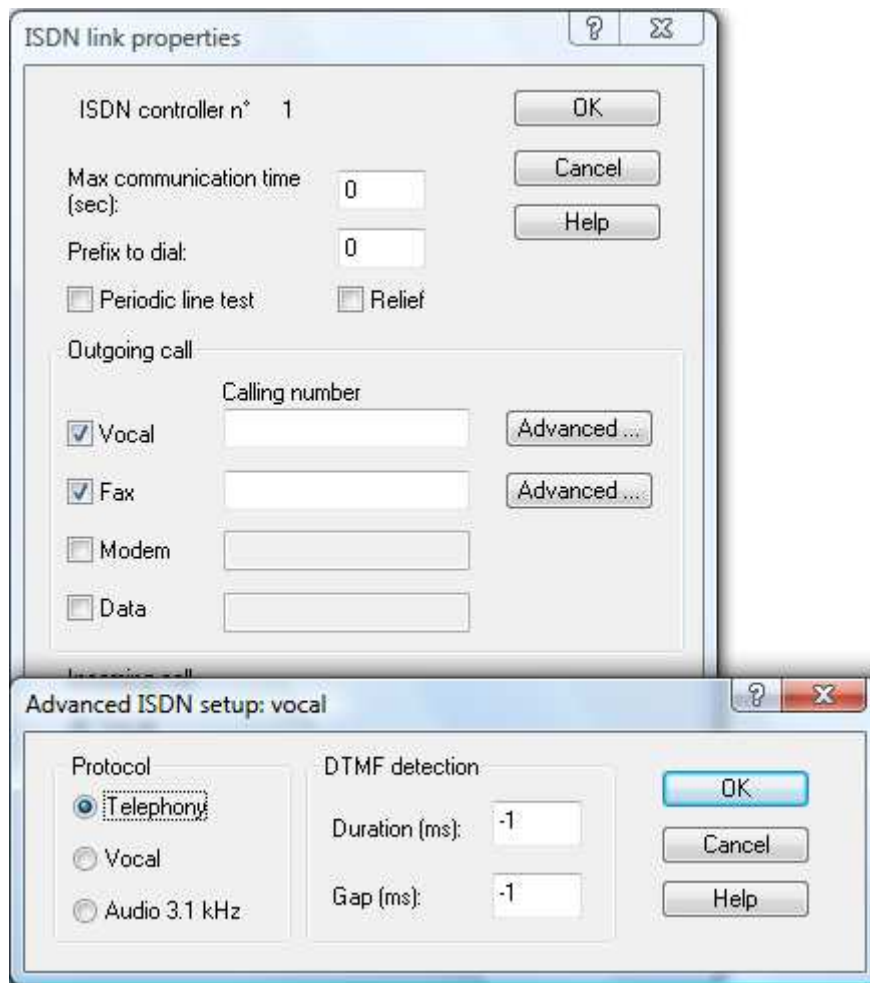
In this way, even if ALERT calls, there is a port available for calls to ALERT.

Thanks to called numbers, ALERT can accept calls only if certain numbers are called. ALERT can then share the line with other equipment.

Advanced options

DTMF Detection

DTMF detection is crucial for the use of the vocal server. It is possible, through the CAPI port configuration window, to change the DTMF detection parameters. Do so by pressing the "Advanced ..." button.



You can modify the Values, duration of a DTMF and the duration between two DTMF.

The value "-1" means that the defaults values are active: 100 ms for the duration and 40 ms for the interval between two DTMF

The default values are defined in the alert.ini file:

```
[CapiCommon]
DTMFDuration=100
DTMFGap=40
```

The Alert.ini file allows other options to be set for operating with an ISDN modem.

INI file options

The CapiCommon section of the ini file allows other settings:

Number of logical connections

```
[CapiCommon]
NumLogCon=32
```


This key sets the maximum number of logical connections achievable with the ISDN modem. In practice, it's the number of possible simultaneous communications. The default value is 32. But for some manufacturers, this value must be set according to the number of B channels.

Size and numbers of buffers

```
[CapiCommon]
VoiceBufferNum=10
VoiceBufferSize=1024
FaxBufferNum=10
FaxBufferSize=1024
ModemBufferNum=10
ModemBufferSize=1024
DataBufferNum=10
DataBufferSize=1024
```

These keys determine the number and size of buffers used for data exchange between ALERT and CAPI equipment. It may be useful to change these values for better reactivity of the voice server.

```
[CapiCommon]
VoiceBufferNum=80
VoiceBufferSize=128
```

This combination offers a better response during voice navigation with the DTMF.

Number masking

For outgoing calls, it is possible to mask the number with the following option. As before, this option depends on the telephone network.

```
[CAPIPORT1]
MaskCallingNumber=no
```

Call transfert

ALERT can perform call transfers. To activate such transfers, refer to the software documentation.

It is however possible to specify the type of call forwarding to be used for each port.

```
[CAPIPORT1]
Use2BChannelTransfer=no
UseECTTransfer=no
ExplicitCallTransfer=no
```

These three keys define the type of transfer used. If all three values are set to "no" as above, the modem does not use the ISDN service to transfer. The PBX authorizes or not the link between the two parties that are called. (ALERT calls A, then B and hangs up, A and B are then connected)

If the key UseECTTransfert is active, the modem then uses the "Explicit Call Transfer" which is an ISDN service. In this case, ALERT can make explicit transfers (optional ExplicitCallTransfer) or implicit.

The last key allows simulating a transfer. ALERT calls A, then B and then redirects the audio stream from A to B and B to A while staying online.

For transfers, a last option can be used if the telephone system allows it. ALERT can force the transfer to a given caller number. If A calls ALERT, then ALERT calls B, the call can be processed as if A called B.

[CAPIPORT1]

TransferTransmitNum=no