



Setting Up a Secure STE Connection with KlasTA over Satellite

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The information in this article applies to:

- KlasTA
- KlasSplitter
- STE
- KlasRouter
- KlasHopper

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1.0 Introduction

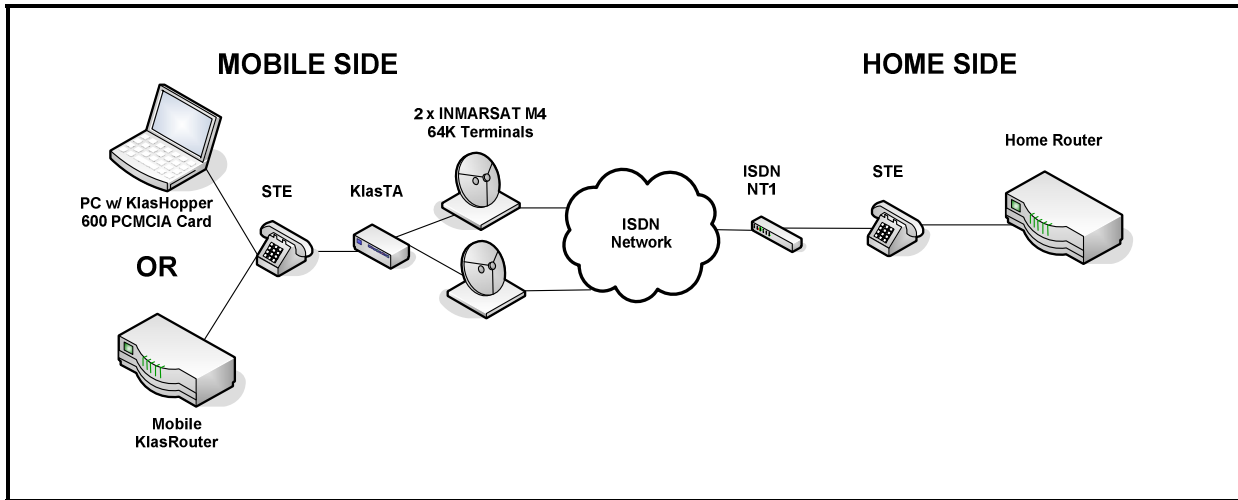


Figure 1. Sample Scenario for a Deployed User

This document describes how to physically set up each device needed to establish a secure STE connection over satellite using KlasTA, as shown in Figure 1. The sample scenario includes a Mobile and a Home Side of the communications session. The Mobile Side represents a user in a deployed environment and the Home Side represents a fixed terrestrial network with an established ISDN BRI connection. Since the STE has built-in 128K ISDN capability, it can be used in conjunction with KlasTA to initiate an ISDN call through two separate M4 INMARSAT Terminals. When initiating the connection, the STE will send the dial string to the KlasTA. The KlasTA will then relay the dial string on to each of the M4 Terminals in order to establish the satellite connection. Once a secure connection is made with the Home Side STE, the KlasTA will act as a splitter in order to divide the 128K output from the STE into two separate 64K channels for transmission over each of the M4 Terminals.

2.0 Mobile Side

The devices listed below are required in order to establish a secure connection in a deployed environment:

1. INMARSAT M4 Terminals
2. KlasTA
3. STE
4. RS-530 Synchronous Serial Device (i.e. KlasRouter or KlasHopper)

The following sections will describe the purpose of each device and how it physically connects to its counterpart device.

2.1. INMARSAT M4 Terminal

There are several different manufacturers of INMARSAT M4 Terminals. Each terminal consists of an outdoor unit (ODU) and an indoor unit (IDU). The ODU is the

antennae that physically sends and receives satellite signals. When setting up the ODU, ensure that it has an unobstructed line of sight view to the satellite with a strong signal. The ODU connects to the IDU through a coaxial cable. The IDU is a satellite phone and will use the digits it receives from KlasTA to dial up a connection with a Land Earth Station (LES) in order to connect to the public ISDN network. The IDU has an RJ-45 port typically labeled ISDN Input that connects to one of the ISDN Output ports on KlasTA through a standard straight-through Ethernet cable.

2.2. Mobile Side KlasTA

KlasTA is an ISDN Terminal Adaptor (TA) that normally converts serial data into an ISDN format for use across the public ISDN network. When used in conjunction with the STE, KlasTA must be configured to operate in Splitter Mode in order to divide the 128K output from the STE into two separate 64K channels for transmission over satellite. As shown below in Figure 2, KlasTA contains an ISDN NT Input port, two ISDN Output ports and an RS-530 Input Port. Each of the ports is explained below.

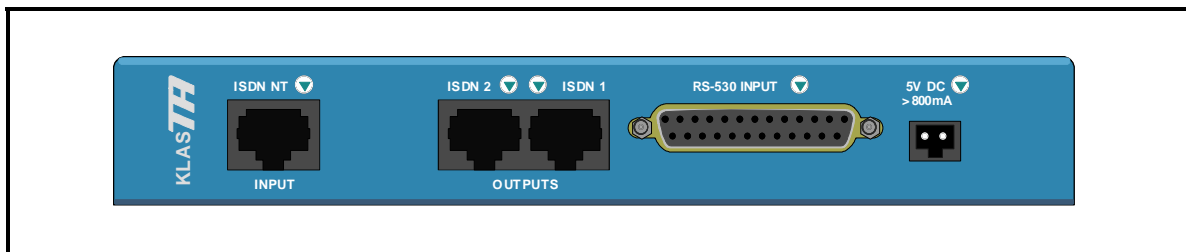


Figure 2. Rear View of Mobile Side KlasTA

1. The ISDN NT Input port is used as a splitter in order to divide the 128K ISDN Input from the STE into two separate 64K ISDN channels for transmission over the ISDN 1 and ISDN 2 Output ports.
2. ISDN Output ports 1 and 2 each represent a 64K channel connection. Connect the Ethernet cable coming from the M4 Terminal into these ports.
3. The RS-530 Input port is not used in this set-up.

2.3. STE

The STE is a Type-1 Encryption device that allows users to establish a secure connection with another STE over ISDN or the PSTN. While it is primarily used for encrypted voice, it is also commonly used as a data encryption device. When used with a KlasTA, the STE can be used for either secure voice or data over satellite. Essentially, the STE acts like a normal telephone with a handset and keypad for dialing. The STE has a number of configuration options that allow the user to set a diverse amount of parameters for each secure session. For more information on how to properly configure the STE for use with KlasTA, refer to the following Klas Application Notes:

- Q100011 – Configuring the STE to dial over Satellite at 64K
- Q100012 – Configuring the STE to dial over Satellite at 128K

2.4. RS-530 Synchronous Serial Device

There are two devices that can be used to connect to a STE, a router or a KlasHopper 600 PCMCIA card. With a router, such as KlasRouter, it must have an RS-530 Synchronous Serial connector. KlasRouter has a DB-25 male connector that can be used with a STE. Ensure you have the appropriate cable and connect the KlasHopper card to the STE. With KlasHopper, slide the card into an available PCMCIA slot on your laptop. Ensure you have the appropriate cable and connect the KlasHopper card to the STE.

3.0 Home Side

The devices listed below are required in order to establish a secure connection in a fixed environment:

1. ISDN NT-1 Device
2. STE
3. RS-530 Synchronous Serial Router (i.e. KlasRouter)

The following sections will describe the purpose of each device and how it connects to its counterpart.

3.1. ISDN NT-1

There are several different manufacturers of ISDN NT-1 devices. In North America, networks require an NT-1 device with an ISDN U-Interface in order to convert the Public ISDN 2-wire connection into a 4-wire S/T connection on a TA, such as KlasTA. Connect the U-Interface on the NT-1 device to the RJ-45 port providing the ISDN BRI connection from the Telecom Company. Connect the S/T Interface on the NT-1 to the ISDN port on the STE.

3.2. Home Side STE

The STE is a Type-1 Encryption device that allows users to establish a secure connection with another STE over ISDN or the PSTN. While it is primarily used for encrypted voice, it is also commonly used as a data encryption device. On the Home Side, the STE will connect to the NT-1 and terminate the ISDN connection. No KlasTA is needed on the Home Side. For more information on how to properly configure the STE for use with KlasTA, refer to the following Klas Application Notes:

- Q100013 – Configuring the STE to answer at 64K
- Q100014 – Configuring the STE to answer at 128K

3.3. RS-530 Synchronous Serial Router

The data coming from the Mobile Side must be routed to the appropriate destination on the Home Side network. This is accomplished using a router, such as KlasRouter, as a gateway to the rest of the network. Connect the RS-530 Serial port on the router to the serial encryption device. The Mobile and Home Side routers can then establish a PPP or HDLC connection, which will allow the integration of the Mobile Side communications into the entire Home Side network.

MORE INFORMATION

For more information about KlasTA and other Klas products, visit the following Klas website:

<www.klasonline.com>

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