The contents of this manual may not be reproduced or reprinted in whole or in part without the express written permission of DVTEL, INC.

Rev A5  March 2014
# Table of Contents

1. Document Information........................................................................................................ v

2. Introduction .......................................................................................................................... 1
   2.1 Items Included in the Package ......................................................................................... 2
   2.2 Hardware Description ..................................................................................................... 2
       2.2.1 Power Connection Panel......................................................................................... 2
       2.2.2 Video Connection Panel......................................................................................... 4

3. Installing and Connecting the Unit ...................................................................................... 5
   3.1 Installing the Unit ........................................................................................................... 5
       3.1.1 Assembling the Unit in a Rack Mount Panel (Optional Accessory) ......................... 6
   3.2 Connecting the Unit ....................................................................................................... 7
       3.2.1 Grounding the Unit ................................................................................................. 7
       3.2.2 Connecting the Unit to the Power Supply .............................................................. 7
       3.2.3 Using the DNA Utility to Connect the Unit to the Network ................................... 8
       3.2.4 Connecting the Video Source (Camera) to the Unit ............................................... 11
       3.2.5 Connecting the Analog Video Output to an Analog Device ................................... 12
       3.2.6 Connecting the Unit to Receive Alarms from External Devices (Alarm Inputs) .... 12
       3.2.7 Connecting the Unit to Control an External Device (Using Relay Outputs) ........... 12
   3.3 Resetting the Unit .......................................................................................................... 13
       3.3.1 Reset Using the RESET Button ............................................................................. 14
       3.3.2 Reset by Removing the Power Supply .................................................................... 14
   3.4 Solo Setup ...................................................................................................................... 14
   3.5 Batch Solo Setup Recording ......................................................................................... 14
   3.6 Noise Reduction ............................................................................................................ 14
   3.7 Enhanced Detection Distance ...................................................................................... 15
   3.8 Improved Analytic Detection for Scenes with High Movement Activity ..................... 15
   3.9 Reduced False Alarms .................................................................................................. 16

Appendix .................................................................................................................................. 18
   A.1. Technical Specifications ............................................................................................... 19
   A.2. Connecting Leads to a Spring Clamp Terminal Block ............................................... 21
   A.3. Solo Setup Window ..................................................................................................... 22
   A.4. Batch Solo Setup Function ......................................................................................... 24
   A.5. Troubleshooting ........................................................................................................... 26
   A.6. N/O to N/C Relay Configuration ................................................................................ 28

Contacting DVTEL.................................................................................................................. 29
List of Figures
Figure 1: trk-101 Unit ........................................................................................................1
Figure 2: trk-101 Unit Connectivity ..................................................................................1
Figure 3: trk-101 Power Connection Panel .......................................................................2
Figure 4: trk-101 Video Connection Panel .......................................................................4
Figure 5: trk-101 with Nuts Removed ..............................................................................6
Figure 6: Inserting Units into Rack Mount Panel ............................................................6
Figure 7: DNA Discovery Window ....................................................................................9
Figure 8: DNA Assign IP – Use DHCP Dialog Box ..........................................................9
Figure 9: DNA Assign IP – Static IP Dialog Box ..............................................................10
Figure 10: Login Window ...............................................................................................10
Figure 11: Web Interface Streaming Window ...................................................................11
Figure 12: Relay Contacts Schematic ............................................................................13
Figure 13: Setup > Analytics > Advanced Screen ...........................................................15
Figure 14: Spring Clamp Terminal Block .......................................................................21
Figure 15: Connecting a Wire to a Terminal Block ........................................................21
Figure 16: Solo Setup Window .......................................................................................22
# Revision History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Author</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>April 2013</td>
<td>Alan Singer</td>
<td>First release.</td>
</tr>
</tbody>
</table>
1. Document Information

Document Scope and Purpose

The purpose of this document is to provide instructions and installation procedures for physically connecting the trk-101 unit. After completing the physical installation, additional setup and configurations are required before video analysis and detection can commence.

For information on the unit setup and configuration, refer to the HTML Edition Units User’s Guide.

Note:
This document is intended for use by technical users who have a basic understanding of CCTV camera/video equipment and LAN/WAN network connections.

Warning:
Installation must follow safety, standards, and electrical codes as well as the laws that apply where the units are being installed.

Proprietary Rights and Non-Disclosure

This manual is delivered subject to the following restrictions and conditions:

- This document contains proprietary information belonging to DVTEL, Inc. This information is supplied solely for the purpose of assisting explicitly the licensee of the DVTEL units.
- No part of this document contents may be used for any other purpose, disclosed to any third party or reproduced by any means, electronic or mechanical, without the express prior written permission of DVTEL, Inc.

Trademarks and Copyrights

This manual and its contents herein are owned by DVTEL, Inc. All rights reserved.

DVTEL, the DVTEL logo, ioimage, the ioimage logo, ioimage analytics, ioibox, ioicam, ioiware, ioiware command center, ioiware setup, CP-2202-361P/N, IOI-XTRK-10D, IOI-XTRK-100D, trk1, trk10d, trk100, trk100d, trk-101, trk200, trk4000d, trk8000, mmp100dn, sc1dn-S, sc1dn-S, XPVA-10D, and XPVA-100D are trademarks of DVTEL, Inc.

Products and trademarks mentioned herein are for identification purposes only and may be registered trademarks of their respective companies.

DVTEL, Inc. makes no representations whatsoever about any other products or trademarks mentioned in the manual.

© DVTEL, Inc. 2014. All rights reserved.
Disclaimer

Users of DVTEL products accept full responsibility for ensuring the suitability and considering the role of the product detection capabilities and their limitation as they apply to their unique site requirements.

DVTEL, Inc. and its agents make no guarantees or warranties to the suitability for the users’ intended use. DVTEL, Inc. accepts no responsibility for improper use or incomplete security and safety measures.

Failure in part or in whole of the installer, owner, or user in any way to follow the prescribed procedures or to heed WARNINGS and CAUTIONS shall absolve DVTEL, Inc. and its agents from any resulting liability.

Specifications and information in this guide are subject to change without notice.

Document Conventions

WARNING and CAUTION notes are distributed throughout this document, whenever applicable, to alert you of potentially hazardous situations. These may be hazards associated with a task or a procedure you are carrying out or are about to carry out.

The following document conventions are used throughout this manual:

- **A Warning** is a precautionary message that indicates a procedure or condition where there are potential hazards of personal injury or death.

- **A Caution** is a precautionary message that indicates a procedure or condition where there are potential hazards of permanent damage to the equipment and or loss of data.

- **A Note** is useful information to prevent problems, help with successful installation, or to provide additional understanding of the products and installation.

- **A Tip** is information and best practices that are useful or provide some benefit for installation and use of DVTEL products.

General Cautions and Warnings

This section contains information that indicates a procedure or condition where there are potential hazards. These may be hazards associated with a task or procedure a user is carrying out or about to carry out. WARNINGS and CAUTIONS are distributed throughout this document, whenever applicable, to alert the user of potentially hazardous situations.

**SAVE ALL SAFETY AND OPERATING INSTRUCTIONS FOR FUTURE USE.**

Although the unit is designed and manufactured in compliance with all applicable safety standards, certain hazards are present during the installation of this equipment.
To help ensure safety and to help reduce risk of injury or damage, observe the following:

**Warning:**
1. The unit cover is an essential part of the product. Do not open or remove this cover. Never operate the unit without the cover in place. Operating the unit without the cover in place poses a risk of fire and shock hazards.
2. To prevent injury or damage to the unit, do not insert any objects into the vents of the unit.
3. Only qualified trained personnel should service and repair this equipment.

**Caution:**
To avoid damage from overheating or unit failure, assure that there is sufficient temperature regulation to support the unit’s requirements (cooling/heating). Operating temperature should be kept in the range 0° to 50°C (32° to 122°F), with no more than 90% non-condensing humidity.
Electrical Safety Notice and Warnings

Warning:

1. Read the installation instructions before you connect the unit to a power source.
2. Electrical safety should always be observed. All electrical connections must be performed by a certified electrician.
3. Use the supplied power supply and protect against static electricity, ground faults and power surges.
4. The unit uses a three-wire power cord to make sure that the product is properly grounded when in use. The plug on this cord will only fit into a grounding-type outlet. This is a safety feature. If the intended power outlet does not support three prongs, one of which is a ground, contact an electrician to install the appropriate outlet. NEVER remove or otherwise attempt to bypass the ground pin of the power cord. Do not operate the unit in the absence of a suitably installed ground conductor.
5. If you use an extension cord with this system, make sure that the total ampere rating on the products plugged into the extension cord does not exceed the extension cord ampere rating.
6. To avoid possible shock hazards or damaging the unit, assure that the positive and negative of the power leads are properly connected to the terminal block connector before plugging it into the unit or turning on the power source.
7. In the following situations, the electric power should be turned off immediately and appropriate repairs, replacements or remedies should be taken if:
   - The power line or plug is damaged, frayed or shows heavy wear.
   - The unit has been physically crushed or deformed.
   - The unit has been exposed to water.
   - The unit has been exposed to, or shows signs of damage from, fire, intense heat, heavy smoke, fumes, or vapors.
   - Electrical connections of the unit become abnormally hot or generate smoke.
   - The unit has been dropped, damaged or shows signs of loose internal parts.
   - The unit does not operate properly.
Minimizing EMI and RFI

When wires run for a significant distance in an electromagnetic field, electromagnetic interference (EMI) can occur. Strong EMI (e.g., lightning or radio transmitters) can destroy the units and can pose an electrical hazard by conducting power through lines and into the system. Poor quality or worn wiring can result in radio frequency interference (RFI). To minimize the effects of EMI and RFI, consult your reseller.

Site Preparation

There are several requirements that should be properly addressed prior to installation at the site. The following specifications are requirements for proper installation and operation of the unit:

- **Ambient Environment Conditions**: Avoid positioning the unit near heaters or heating system outputs. Avoid exposure to direct sunlight. Use proper maintenance to ensure that the unit is free from dust, dirt, smoke, particles, chemicals, smoke, water or water condensation, and exposure to EMI.

- **Accessibility**: The location used should allow easy access to unit connections and cables.

- **Safety**: Cables and electrical cords should be routed in a manner that prevents safety hazards, such as from tripping, wire fraying, overheating, etc. Ensure that nothing rests on the unit’s cables or power cords.

- **Ample Air Circulation**: Leave enough space around the unit to allow free air circulation.

- **Cabling Considerations**: Units should be placed in locations that are optimal for the type of video cabling used between the unit and the cameras and external devices. Using a cable longer than the manufacturer’s specifications for optimal video signal may result in degradation of color and video parameters.

- **Physical Security**: The unit provides threat detection for physical security systems. In order to ensure that the unit cannot be disabled or tampered with, the system should be installed with security measures regarding physical access by trusted and untrusted parties.

- **Network Security**: The unit transmits over IP to security personnel for video surveillance. Proper network security measures should be in place to assure networks remain operating and free from malicious interference. The unit is intended for installation on the backbone of a trusted network.

- **Electrostatic Safeguards**: The unit as well as other equipment connected to it (relay outputs, alarm inputs, racks, carpeting, etc.) shall be properly grounded to prevent electrostatic discharge.

The physical installation of the unit is the first phase of making the unit operational in a security plan. The goal is to physically place the unit, connect it to other devices in the system, and to establish network connectivity. When finished with the physical installation, refer to the *HTML Edition Units User’s Guide* to complete the second phase of installation, which is the setup and configuration of the unit.
2. Introduction

The trk-101 is a self-contained video analytic encoder that monitors the video input from a camera. The unit provides alarms when it automatically detects specific events, such as region entrance, fence trespassing, tripwire crossover, which trigger an automatic notification. You can define the events and location in the video of the image that can be detected with user-customizable rules and positioning criteria.

![Figure 1: trk-101 Unit](image)

In addition to its analytic capabilities, the unit also serves as a standard video encoder that digitizes the input video to a standards-compliant, compressed IP video stream. It simultaneously provides video output in two formats: analog video and compressed digital video over IP. On-screen overlays indicate where the detection has occurred on the video output.

![Figure 2: trk-101 Unit Connectivity](image)

This chapter includes the following sections:

- [Items Included in the Package](#)
- [Hardware Description](#)
2.1 Items Included in the Package

The unit package contains the following items:

<table>
<thead>
<tr>
<th>QTY</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>trk-101 unit</td>
</tr>
<tr>
<td>1</td>
<td>Mounting bracket</td>
</tr>
<tr>
<td>1</td>
<td>Set of spring clamp terminal blocks</td>
</tr>
<tr>
<td>1</td>
<td>Documentation and utilities CD</td>
</tr>
</tbody>
</table>

Related Documentation:
- HTML Edition Units User’s Guide
- ioi Product Selection Matrix

2.2 Hardware Description

This section describes the connection panels of the unit.

2.2.1 Power Connection Panel

The following is a description of the power connection panel of the unit.

Figure 3: trk-101 Power Connection Panel
The power connection panel of the unit includes the following connections:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grounding Terminal</td>
<td>For connecting the unit to the protective ground (earth) according to local regulations and codes. For more information, see Grounding the Unit (page 7).</td>
</tr>
<tr>
<td>Power Source Input</td>
<td>Terminal block for powering the unit from a 12VDC or 24VAC power source.</td>
</tr>
<tr>
<td>ETHERNET Port (RJ45)</td>
<td>For connecting the unit to the Ethernet network (10/100 Mbps).</td>
</tr>
<tr>
<td>ALARM IN</td>
<td>Single alarm input connection (a set of two wires) from an external device — for example, a fire sensor, PIR (passive infrared) sensor, fence sensor, etc. — with a dry contact output to the terminal block.</td>
</tr>
<tr>
<td>RELAY OUT</td>
<td>Dry output contact signal to a single external device, such as an electrical door lock, to the terminal block. The terminal is for NORMALLY OPEN configuration.</td>
</tr>
<tr>
<td>RESET Button</td>
<td>For setting the unit factory defaults, setting Technician mode, or resetting the unit.</td>
</tr>
<tr>
<td>LED</td>
<td>The LED indicates several status conditions:</td>
</tr>
<tr>
<td></td>
<td>- Off: The unit is resetting.</td>
</tr>
<tr>
<td></td>
<td>- Flashing green (300ms intervals): The firmware is booting.</td>
</tr>
<tr>
<td></td>
<td>- Flashing green (one second intervals): The firmware has booted successfully, the encoder is connected to the network, and unit is operating normally.</td>
</tr>
<tr>
<td></td>
<td>- Steady red: Failure in the first phase of the boot. Requires resetting the unit.</td>
</tr>
<tr>
<td></td>
<td>- Flashing red: Failure in the second phase of the boot. Requires resetting the unit.</td>
</tr>
<tr>
<td></td>
<td>- Steady yellow: Reset button was pressed for 5-15 seconds and entered Technician mode. Requires resetting the unit.</td>
</tr>
<tr>
<td></td>
<td>- Flashing yellow (500ms intervals): The unit is in Factory Default mode. To enter this mode, press the Reset button for 15-30 seconds. The LED changes from steady state to flashing after five seconds. The unit’s firmware returns to the factory defaults. When finished, the LED displays flashing green.</td>
</tr>
</tbody>
</table>

**Note:**

If the LED is pressed for more than 30 seconds, it will flash red, indicating an error. In this case, disconnect the unit and reboot.
2.2.2 Video Connection Panel

The following is a description of the video connection panel of the unit.

![Video Connection Panel]

The video connection panel of the unit includes the following items:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIDEO IN</td>
<td>Input interface for receiving the surveillance camera analog video signal (source) for analysis and detection.</td>
</tr>
<tr>
<td>VIDEO OUT</td>
<td>Output interface that provides the analog video signal after analysis and includes detection overlays and additional On-Screen Display (OSD) information. Typically connected to analog video equipment such as analog video displays or analog video recording device or digital video recorder (DVR).</td>
</tr>
</tbody>
</table>

**Note:**

In order to view analog video, analog Video Out must be enabled in the unit settings (disabled by default). For more information on how to enable the analog Video Out signal, refer to the *HTML Edition Units User’s Guide*. 
3. Installing and Connecting the Unit

This section describes how to install and connect the unit and includes the following sections:

- Installing the Unit (page 5)
- Connecting the Unit (page 6)
- Resetting the Unit (page 13)

Note:
After connecting the unit, proceed to configure the unit as described in the HTML Edition Units User’s Guide.

3.1 Installing the Unit

The unit can be installed and mounted next to the camera (inside the camera enclosure).
Alternatively, the unit can be installed inside an equipment room on a shelf or in a rack using the rack mount panel that is available as an optional accessory.

When installing the unit make sure that:

- It is securely tied down and cannot be easily dislodged
- Operating temperatures, at all times, are kept between the minimum/maximum allowed
- Proper ventilation is provided so that the air is free to circulate around the unit
- The unit is protected from direct weather conditions (for example, sunlight, rain, dust, and so on)

Caution:
To avoid damage from overheating or unit failure, assure that there is sufficient temperature regulation to support the unit’s cooling/heating requirements. Ambient operating temperature should be kept in the range 0° to 50°C (32° to 122°F), with no more than 95% non-condensing humidity.
3.1.1 Assembling the Unit in a Rack Mount Panel (Optional Accessory)

Up to 10 units can be mounted on a single rack mount panel. After the units have been assembled in the rack mount panel, the panel can be installed in a standard 19-inch rack.

To assemble units in a rack mount panel:

1. Remove the nut and washer from each of the two video connectors on the video connection panel of the unit.

2. Attach each unit to the rear side of the rack mount panel by inserting it through the holes as shown in Figure 6.

Figure 5: trk-101 with Nuts Removed

Figure 6: Inserting Units into Rack Mount Panel
3. Fasten each unit using the nuts and washers removed in step 1, making sure to first place the
washer on each video connector before tightening the nut on the video connector.
4. Repeat steps 1 through 3 for each of the units you want to assemble on the rack mount panel
(up to 10 units can be assembled per panel).
5. Attach the rack mount panel to a 19” rack.

3.2 Connecting the Unit

This section describes the procedures for connecting the unit and includes the following sub-sections:

- Grounding the Unit (page 7)
- Connecting the Unit to the Power Supply (page 7)
- Connecting the Unit to the Network (page 8)
- Connecting the Video Source (Camera) to the Unit (page 9)
- Connecting the Analog Video Output to an Analog Device (page 8)
- Connecting the Unit to Receive Alarms from External Devices (Alarm Inputs) (page 12)
- Connecting the Unit to Control an External Device (Using Relay Outputs) (page 12)

3.2.1 Grounding the Unit

The unit must be grounded according to local regulations and codes.

To ground the unit

1. Loosen the screw of the grounding terminal located on the power connection panel of the unit. See Figure 3: trk-101 Power Connection Panel.
2. Attach a properly rated ground cable. Make sure the ring/spade terminal of the grounding
cable is between the toothed washers. Tighten the screw.
3. Ensure that the other end of the ground cable is connected to protective earth according to
local regulations and codes.

3.2.2 Connecting the Unit to the Power Supply

Before connecting to the power, review the Electrical Safety Notice and Warnings (page vii).

Use a 12VDC/24VAC external power supply with suitable over current protection. Connect the power
supply wires to the positive and negative inputs on the terminal block connector labeled 12VDC/24VAC. See Power Connection Panel (page 2).

Following are the recommended AC adaptor specifications:

- Power Adaptor Input: 110-240V, 47-63Hz, 1A
- Power Adaptor Output: 12v DC 2A, 24W

To power the unit using a power outlet

1. Connect the AC adaptor output to the terminal block on the power connection panel of the
unit.
2. Connect the AC adaptor to the power outlet.
Warning:
1. To prevent bodily injury or damage to the unit, use only properly rated and approved power supplies and/or AC adaptors.
2. Make sure that the power supply matches the required specifications. Electrical safety should always be observed.

3.2.3 Using the DNA Utility to Connect the Unit to the Network

By default, the unit is shipped with the factory default IP address 192.168.123.10.

The DVTEL Network Assistant (DNA) utility is used to discover the unit on the network and to configure it. DNA provides a central location for listing all the DVTEL models accessible over the network. Once listed, each camera or encoder can be right-clicked to access and change the network settings. If the network settings are changed for some reason, a new search will relist the units. The units may then be configured via the web interface.

If DVTEL Latitude is being used, configure the unit with a static IP address rather than with DHCP. This ensures that the IP address will not automatically change in the future and interfere with configurations and communication.

DNA has a simple user interface and does not require any installation. The software is provided as a single, standalone executable that runs on any PC.

Caution:
Before connecting the unit to the network, set the unit IP address according to your specific network requirements to avoid address conflicts. Refer to the instructions in this section on how to change the unit’s IP addresses.

If your network uses firewalls, you must configure them to support communication among the units and computers running the Internet browser used to connect to the trk-101 web interface. After connecting the unit to the network, check that the unit can be found on the network as is described below.

To connect a unit to the network

1. Connect a PC/laptop directly to the unit using a network cable connected to the Ethernet port located on the front panel of the unit. See Figure 3: trk-101 Power Connection Panel (page 2)
2. Change the IP address according to your specific requirements. See the following section.
3. Disconnect the unit from your PC/laptop.
4. Connect the unit to the system network as follows:
   a. Connect the network cable to the Ethernet port located on the front panel of the unit. See Figure 3: trk-101 Power Connection Panel (page 2).
   b. Connect the other network cable end to the network switch/hub.
To change the unit’s IP address

1. Insert the CD included in the package in your computer’s disk drive.

   **Note:**
   
   The PC and the unit must be physically connected on the same subnet.

2. Run the dna.exe file by clicking the icon. The DNA application opens and the device is displayed in the window.

3. Select the unit by right-clicking on it.

4. If there are devices located on a separate VLAN, click on the DNA toolbar to add them manually.

5. Select the unit by right-clicking on it and click **Assign IP** or select the **Assign IP** option. The **Assign IP** dialog box opens.
6. For each unit, do one of the following:
   a. If your network uses a DHCP server:
      i. Select Use DHCP.
      ii. Click Update. A new IP address is automatically assigned to the selected device(s) by the network DHCP server
   b. If your network uses Latitude:
      i. Set a static IP address.
      ii. Do not select the Use DHCP checkbox.
      iii. In the IP Address, Gateway, and Mask, enter the respective LAN/VLAN (optional DNS) values.
      iv. Click Update and wait for OK status to be displayed.

7. Repeat Step 5 for each unit.

8. Select the Web icon from the DNA navigation bar or right-click Web.

9. Enter the unit’s IP address in your browser.

10. When the unit’s Login window opens, enter the default user name (“admin”) and password (“admin”). The unit’s user interface opens.

   ![Figure 9: DNA Assign IP – Static IP Dialog Box](image)

   ![Figure 10: Login Window](image)

   **Note:**
   User name and password are case-sensitive.
3.2.4 Connecting the Video Source (Camera) to the Unit

The unit accepts Composite video (1Vp-p) from stationary analog cameras (standard, thermal, IR, and so on). Video connections should use a 75Ω cable and should not be longer than 30 meters (98 feet).

To connect a video source to the unit

1. Securely connect the video cable BNC connector to the analog video output of the camera or video source.
2. Connect the other cable end to the VIDEO IN connection on the video connection panel of the unit. See Figure 4: trk-101 Video Connection Panel (page 4).

To set the unit’s video standard via its web interface

1. Enter the IP address of the unit in a browser. The unit’s Login window opens.
2. Login to the unit by entering your user name and password. The default user name and password are both “admin”. The web interface opens.
3. If your computer requires ActiveX installation, install it now.
4. From the Live View window, access the Camera Setup by clicking Setup > Camera > Streaming. The Streaming window opens.

   ![Figure 11: Web Interface Streaming Window](image)

5. In the Video Standard field, select PAL or NTSC.
6. Click Apply to save the setting.

**Note:**

If the video standard is changed, all analytic settings will be deleted.
3.2.5 Connecting the Analog Video Output to an Analog Device

**Note:**

The analog video output signal of the unit is disabled by default. Enable it if necessary using the unit’s web interface.

The analog video output (composite video) contains the video from the camera combined with On-Screen Display (OSD) overlays such as detected objects, tracking boxes and trails, time stamp, alarm, camera status, and so on. These OSDs can be enabled and customized using the unit embedded HTML user interface.

The analog video output can be monitored using an analog monitor or recorded on a digital video recorder (DVR). For more information, refer to the *HTML Edition Units User’s Guide*.

**To connect the unit analog video output to an analog device**

- Using video coax 75Ω cable with BNC connectors, connect the VIDEO OUT of the ioimage unit to the analog device Video Input (for example, the VIDEO IN of a monitor or DVR).

**Note:**

Make sure the ioimage unit and the external analog equipment support the same video standard (PAL/NTSC).

3.2.6 Connecting the Unit to Receive Alarms from External Devices (Alarm Inputs)

The unit supports receiving alarms from external devices such as sensors and doors, enabling it to trigger automatic responses on the unit. The unit supports a single alarm input from an external device. The alarm input includes two connecting terminals.

**Warning:**

Only dry contacts can be connected to the unit’s ALARM IN terminals. An external device must fully close or fully open the circuit between the unit’s ALARM IN terminals.

**To connect an external alarm to the unit**

**Warning:**

Disconnect power from the unit before performing the following procedure.

1. Connect the leads from the external device dry contact output using the spring clamp terminal block into the terminals marked ALARM IN (-) and (+). See Connecting Leads to a Spring Clamp Terminal Block (page 21). The two terminals are located at the bottom of the terminal block. See Figure 3: trk-101 Power Connection Panel (page 2).
2. Connect the terminal block to the external devices connector on the power connection panel of the unit. See Figure 3: trk-101 Power Connection Panel (page 2).
3. Connect the other end of the cable to the alarm out (dry contact) of the alarm device/sensor.

3.2.7 Connecting the Unit to Control an External Device (Using Relay Outputs)

You can use the relay output of the unit to provide an indication signal for controlling external devices, such as door locks, lights, etc. The relay output of the unit can be activated as a response to events and alerts. For more information on incident responses and relay outputs, refer to the *HTML Edition Units User’s Guide*.
Installing and Connecting the Unit

**Warning:**
The signal from the relay output of the unit must be used as an indicator and not for direct control of a device.

**Caution:**
To prevent damage to the unit, do not exceed the voltage and current ratings for the relay terminals.

**Relay Output Specifications**
- Maximum current 1A @ 30VDC

**Relay Contacts Schematics**

```
  +---+   +---+
  |   | ---|   |
  |   |   |   |
  +---+   +---+
        Normally Open
```

*Figure 12: Relay Contacts Schematic*

The input supports opto-isolated signal for a single external device. Signals can be sent as continuous (ON/OFF) or single pulse of predefined duration.

**Note:**
It is also possible to configure the relay for a NORMALLY CLOSED (N/C) condition. See **N/O to N/C Relay Configuration** in the Appendix for details.

**To connect a device controller to a relay output of the unit**
1. Connect the leads from the external device controller to the respective terminal points on the spring clamp terminal block according to your requirements (NORMALLY OPEN or NORMALLY CLOSED configuration). See Connecting Leads to a Spring Clamp Terminal Block (page 21). The three terminal points for the relay output are located at the bottom left of the terminal block. See Figure 3: trk-101 Power Connection Panel (page 2).
2. Connect the terminal block to the external devices connector on the power connection panel of the unit. See Figure 3: trk-101 Power Connection Panel (page 2).
3. Connect the other end of the cable to the external controller, which receives the signal from the unit and controls/powers the external device.

**3.3 Resetting the Unit**
The unit can be reset as follows:
- **Reset Using the RESET Button** (page 14)
- **Reset by Removing the Power Supply** (page 14)
3.3.1 Reset Using the RESET Button

The unit has a reset button located on the power connection panel of the unit. See Figure 3: trk-101 Power Connection Panel (page 2).

To reset a unit using the RESET button
1. Insert a small pointed object into the hole labeled RESET on the power connection panel of the unit.
2. Press in and release the button within 5 seconds. The unit resets to its last settings and the LED flashes green.

3.3.2 Reset by Removing the Power Supply

The unit can be reset by turning off the power and then turning it on again.

To reset a unit by removing the power supply
1. Turn off or disconnect the power to the unit.
2. Turn on or reconnect the power to the unit. The unit restarts with the last settings.

3.4 Solo Setup

The Solo Setup function enables you to install and setup one or more cameras at the remote site without requiring another person’s assistance. With this feature, you can:

- Use the camera to record a set of snapshots of the scene while the user is moving around the camera field of view
- Move around within the camera’s field of view
- Use the recording of his movement to setup the depth by marking his height on the camera’s field of view.

For instructions on how to use the Solo Setup function, see page 22 in the Appendix.

3.5 Batch Solo Setup Recording

It is possible to configure Solo Setup recording (single person depth setup) of multiple ioimage units. For details how to use this function, see the training video and Appendix (page 24).

3.6 Noise Reduction

To add 2D Noise Reduction, select Enable Noise Reduction on the Setup > Camera > Video Settings > Advanced tab.
3.7 Enhanced Detection Distance

When the trk-101 is operating in DVR mode and in HD Analytic Analog mode, you can improve the distance from which smaller objects are detected by checking **Enable enhanced detection** in the Advanced Settings section of the Setup > Analytics > Advanced screen.

![Figure 13: Setup > Analytics > Advanced Screen](image)

This function is enabled by default. To disable this function, uncheck the checkbox.

3.8 Improved Analytic Detection for Scenes with High Movement Activity

If you are monitoring scenes in which there is movement in up to 80% of the frame, it is recommended to check **Scenes with large objects or many objects** in the Advanced Settings section of the Setup > Analytics > Advanced screen. See Figure 13: Setup > Analytics > Advanced Screen above.

This function is enabled by default. To disable this function, uncheck the checkbox.
3.9 Reduced False Alarms

Firmware version 2.1.1 includes an algorithm that improves the identification of people who are standing or moving upright in a scene. Previously, the system was designed to detect sophisticated intruders, for example a camouflaged or crawling person. This capability is retained in this firmware. In addition, you can enable the identification of upright people that will reduce false alarms (see below).

Note:

The following limitations apply to this function:

1. It is possible that a person who is not standing upright might not be detected when:
   - Crawling
   - Walking on all four (like an animal)
   - Camouflaged to look like an inanimate object (i.e., small tree)
   - Running and viewed from the side
   - Bent over and viewed from the side
2. The camera should not be facing straight down (i.e., it should be at a 30-40 degree angle from the object).
3. The smallest objects are 30 pixels high in the D1 video.
4. In scenes where the camera does not have good low-light sensors or thermal sensors, detection might be reduced due to insufficient data.

To enable the identification of upright people

2. Click the Basic tab in the Attributes area.

3. Click the link displayed above the Attributes area and select one of the following rules:
   - Human enters region
   - Human loitering
   - Human crosses tripwire
   - Human crosses multi-segment tripwire

4. Select the checkbox for Enable detection of small, crawling or slow intruders.

**Note:**

1. By default, this function is disabled in the above rules, meaning that the system is identifying people standing or walking upright. Selecting Enable activates the identification of sophisticated intruders.

2. This function is not supported for the following rules: Object left behind in region, Vehicle stops in region, and Object removed from location.

3. For all other rules, the default setting is Enabled (identifying sophisticated intruders), which cannot be changed.
Appendix

The appendix contains the following sections:

- Technical Specifications (page 19)
- Connecting Leads to a Spring Clamp Terminal Block (page 21)
- Solo Setup Window (page 22)
- Batch Solo Setup Function (page 24)
- Troubleshooting (page 26)
- N/O to N/C Relay Configuration (page 28)
## A.1. Technical Specifications

Following are the sc1dn-S technical specifications:

<table>
<thead>
<tr>
<th><strong>Video Input Channels</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Intelligent Video Analysis Channels</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Analog Video Output</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TV Standard</td>
<td>Composite 1Vp-p (PAL or NTSC)</td>
</tr>
<tr>
<td>Physical Connector</td>
<td>1 x BNC 75Ω</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Digital Video Output</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Video Streaming</td>
<td>H.264, MPEG 4 SP, and MJPEG</td>
</tr>
<tr>
<td>Frame Rate (H.264) per Resolution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D1</td>
</tr>
<tr>
<td></td>
<td>12/15 fps</td>
</tr>
<tr>
<td></td>
<td>PAL/NTSC</td>
</tr>
<tr>
<td>Frame Rate (MPEG 4 SP)</td>
<td>Up to 25/30 fps (PAL/NTSC) for all resolutions</td>
</tr>
<tr>
<td>Rate Control Option</td>
<td>CBR (128Kbps – 4Mbps), VBR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Network</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet (IEEE 802.3/802.3U)</td>
<td>1 x Ethernet RJ45 interface</td>
</tr>
<tr>
<td>Services and Protocols</td>
<td>TCP/IP, UDP/IP, HTTP, SMTP, DHCP, DNS, SNTP</td>
</tr>
<tr>
<td>Video Streaming</td>
<td>RTP/RTSP</td>
</tr>
<tr>
<td>Alarms/Commands</td>
<td>TCP/IP, HTTP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>I/O Interface</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm Input</td>
<td>1 x dry contact</td>
</tr>
<tr>
<td>Relay Output</td>
<td>1 x relay output (rated load 0.3A@ 30VDC)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Power Source</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>Power Consumption</td>
</tr>
<tr>
<td>12 VDC</td>
<td>0.3A</td>
</tr>
<tr>
<td>24 VAC</td>
<td>0.25A</td>
</tr>
</tbody>
</table>
### Physical Dimensions

<table>
<thead>
<tr>
<th>Dimensions (mm)</th>
<th>68.5 x 36 x 118 mm (W x H x D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (in.)</td>
<td>2.7 x 1.42 x 4.62” (W x H x D)</td>
</tr>
</tbody>
</table>

### Environmental Specifications

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>0° to 50°C (32° to 122°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Humidity</td>
<td>5% to 90% (non-condensing)</td>
</tr>
</tbody>
</table>

### Certifications

<table>
<thead>
<tr>
<th>Safety</th>
<th>UL60950-1, CE, cTUVus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electromagnetic Interference (EMC)</td>
<td>FCC Part 15, Subpart B, Class B; CE Class A; EN55022; EN55024; C-TICK</td>
</tr>
<tr>
<td>Environmental</td>
<td>RoHS</td>
</tr>
</tbody>
</table>
A.2. Connecting Leads to a Spring Clamp Terminal Block

The unit is delivered with two terminal block connectors. The connectors enable you to connect wires for either the Relay Output or Alarm Input and then connect them to the unit.

To connect a wire to the spring clamp terminal block:

1. Strip the insulation from the end of each wire that is to be connected to the terminal block. Approximately 1 cm (2.54”) of wire should be exposed.
2. With a small screwdriver, press in and hold the orange spring clamp button next to the female outlet where the wire will be inserted.
3. Insert the stripped end of the wire into the female outlet.
4. Release the orange spring clamp button.
A.3. Solo Setup Window

The Solo Setup function enables you to install and setup a single camera without requiring another person’s assistance.

To perform a Solo Setup

1. Open the Setup > Analytics > Depth window. The following screen is displayed:

![Solo Setup Window](image)

2. Open the Solo Setup tab. The following control icons are available on the Solo Setup keypad:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Start Recording" /></td>
<td>Start Recording</td>
<td>Starts recording and browses to destination folder where the clip will be saved</td>
</tr>
<tr>
<td><img src="image" alt="Stop Recording" /></td>
<td>Stop Recording</td>
<td>Stops recording</td>
</tr>
<tr>
<td><img src="image" alt="Browse" /></td>
<td>Browse</td>
<td>Browses to the destination folder where clip is stored and loads the clip</td>
</tr>
<tr>
<td><img src="image" alt="Play/Pause" /></td>
<td>Speed X1/X0</td>
<td>Speed X1/X0</td>
</tr>
<tr>
<td><img src="image" alt="Fast Forward" /></td>
<td>Speed X2, X4, X8, X16</td>
<td>Click to increase or decrease speed.</td>
</tr>
<tr>
<td><img src="image" alt="Rewind" /></td>
<td>Speed -X2, -X4, -X8, -X16</td>
<td>Click to increase or decrease speed.</td>
</tr>
</tbody>
</table>

3. On the Solo Setup control keypad, click **Start Recording** to record a view in the camera’s field of view.
4. Select a folder where to store the clip. Recording starts when the folder is selected.

5. Walk through various locations across the vertical axis of the camera’s field of view in order to place ground and height markers and guidelines in the clip.

6. Press **Stop Recording**.

7. Proceed to the tab for **Step 1: Ground & Height**.

   **Note:**
   
   For detailed instructions how to set markers and guidelines, follow instructions in the *HTML Edition Units User’s Guide*.

8. Click **Browse** to load the clip from the folder where it is saved.

9. Use the **Play**, **Pause**, **Fast Forward**, and **Rewind** buttons on the Solo Setup keypad to explore the clip. The status of the view is displayed on the bottom left side of the screen.

10. Exit Clip mode and return to Live mode by pressing the round **Play** button on the control panel located to the left of the monitor.

    The caption under the monitor changes from *Clip* to *Live*.

11. Repeat steps 3-9 above for each preset.

12. Proceed to the tabs for Steps 2-4 of the Depth Setup to complete the setup and apply settings.
A.4. Batch Solo Setup Function

The Batch Solo Setup function enables you to install and setup multiple cameras without requiring another person’s assistance.

To perform a batch Solo Setup

1. Select the Setup > Analytics > Advanced screen, which displays all analytic units in the physical site (VLAN). The Advanced screen is displayed. The web page searches for the ioimage units and adds them to the Available Units list. Units using firmware version 1.5.7.328 will also be discovered.

2. From the Available Units list, select the checkbox for the units to setup or click Select All.

3. Click the Record icon to start recording. The Browse for Folder dialog box opens.

4. In the dialog box, enter the name of the directory in which you want to save the data. By default, the data for each camera is stored in a folder whose name is the camera’s IP address.

5. Click the Stop icon when finished recording.
6. For each camera, select **Setup > Analytics > Depth**. The **Depth** screen opens.

7. Click the **Step 1: Ground & Height** tab. The tab opens.

8. Browse for the recorded data folder and follow steps 1-4 on the screen.
## A.5. Troubleshooting

This section provides useful information and remedies for common situations where problems may be encountered.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No network connection</strong></td>
<td><strong>Hardware issues:</strong>&lt;br&gt;• Check that the network is working and the unit is powered on.&lt;br&gt;• Check that the network (Ethernet) cable is properly attached to the unit.&lt;br&gt;• Confirm that the LED on the Ethernet (RJ45) connector on the power connection panel of the unit is on.&lt;br&gt;• Confirm that the network cables are not damaged and replace if necessary.&lt;br&gt;<strong>IP Address issues:</strong>&lt;br&gt;• Change the default IP address/addresses of the unit.&lt;br&gt;• From the PC running the web browser, ping the unit IP address and confirm that it can be reached.&lt;br&gt;• Confirm that the network settings/firewalls are set according to the requirements.</td>
</tr>
<tr>
<td><strong>How do I find IP address of my unit?</strong></td>
<td>The IP address can be set via the unit’s DNA application. See <a href="#">Connecting the Unit to the Network</a>.</td>
</tr>
<tr>
<td><strong>The IP address responds to a ping on the network from the workstation but does not show in the DNA application</strong></td>
<td>Disconnect the unit’s Ethernet 10/100 port or turn the power to unit off, and then ping the IP address again. If the IP address responds, there is another device using the IP address. Consult with your network administrator to resolve the conflict.</td>
</tr>
<tr>
<td><strong>The unit IP address is in use by another computer (collision)</strong></td>
<td>Change the unit IP address after connecting to it directly (not through the system network). See <a href="#">Connecting the Unit to the Network</a> to set the IP address via the DNA application.</td>
</tr>
<tr>
<td><strong>No analog output video signal</strong></td>
<td>• Make sure the analog video out is enabled on the unit/channel. Refer to the <em><a href="#">HTML Edition Units User’s Guide</a></em> for details.&lt;br&gt;• Check that the video cables are securely connected between the unit’s VIDEO OUT BNC connector and the analog video source.&lt;br&gt;• Check that the connection is made to the correct VIDEO OUT connector of the analog video source.&lt;br&gt;• Confirm that the camera has power.&lt;br&gt;• Check the cables for damage and replace as needed.</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Solution</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Bad output video quality               | • Check the source video signal quality by connecting an analog monitor to the video source. If video quality is acceptable, connect the video source to the unit.  
  • Check that the cables are connected securely. This includes junction boxes and amplifier that may be used.  
  • Check that the camera settings are correct on the camera and in the unit. Refer to the HTML Edition Units User’s Guide for details.  
  • Check that the camera lens is clean and unobstructed.  
  • Check that the analog video signal is not being degraded due to impedance caused by lengthy or worn cable, numerous connectors, ground loops interference, and so on.  
  • Check that the cable length is within specification. |
| Streaming video image is hanging (stopped) | • Confirm the unit’s video streaming settings. Refer to the HTML Edition Units User’s Guide for details.  
  • Refresh your browser screen (F5).  
  • Check that the bandwidth and bit rate settings of the network are set properly.  
  • Check that other processes and applications are not causing undue latency.  
  • Check that the firewall analysis or blocking is not interfering with the video stream and supports the required ports and communication protocols. |
| Alarm inputs are not working            | • Check the unit settings to confirm that the alarm input is enabled. Refer to the HTML Edition Units User’s Guide for details.  
  • Check that a proper rule for an alarm input event has been defined in the unit. Refer to the HTML Edition Units User’s Guide for details.  
  • Check that the alarm input (dry contact close/open) is being provided by the connected device.  
  • Check that the unit is communicating through the network.  
  • Check that the alarm input wires are connected securely.  
  • Check that the alarm wires are paired in the terminal block in the right positions and according to requirements. |
| Relay outputs are not working           | • Check the unit settings to confirm that the relay output is enabled. Refer to the HTML Edition Units User’s Guide for details.  
  • Check that a proper rule for activating a relay output has been defined in the unit or activate it manually. Refer to the HTML Edition Units User’s Guide for details.  
  • Check the relay output wires are connected securely.  
  • Check that the relay output wires are paired in the terminal block according to requirements and that one wire is connected to the common. |
A.6. N/O to N/C Relay Configuration

The on-board relay in the sc1dn-S provides a single contact which is by default NORMALLY OPEN (N/O), enabling it to be configured to CLOSED upon an alarm condition. This is usually configured with a momentary closure (for example, five seconds), followed by returning to the OPEN condition, to be ready for the next alarm event.

Should a NORMALLY CLOSED (N/C) condition be preferred, the relay may be configured by selecting one of the following two events in the Event Engine:

- Event 1: Triggering event = Power ON
  - Action = Activate relay contact – continuous ON
- Event 2: Triggering Event = Detection Alarm (according to your configuration)
  - Action 1 = Activate relay contact – continuous OFF – immediately
  - Action 2 = Activate relay contact – continuous ON – after five seconds

The above conditions will turn on the relay at Power ON. An alarm will open the relay for five seconds and close it again.

The above conditions also will create an alarm indication in case of a loss of power.

Note:
The unit must be rebooted after configuration in order for this setting to take effect.

Note:
Event 1 can also be replaced by Triggering Event = ARM. In this instance, the relay will be OPEN until the unit is armed, at which time it will behave as described above. This may be desirable in some deployments.
## Contacting DVTEL

To contact us, write us at [info@dvtel.com](mailto:info@dvtel.com) or contact your local office.

<table>
<thead>
<tr>
<th>CORPORATE HEADQUARTERS</th>
<th>ASIA PACIFIC REGION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DVTEL, Inc.</strong></td>
<td><strong>DVTEL</strong></td>
</tr>
<tr>
<td>65 Challenger Road</td>
<td>111 North Bridge Road, #27-01</td>
</tr>
<tr>
<td>Ridgefield Park, NJ</td>
<td>Peninsula Plaza</td>
</tr>
<tr>
<td>07660 USA</td>
<td>Singapore 079098</td>
</tr>
<tr>
<td>Tel: 201.368.9700</td>
<td>Tel: +65 6389 1815</td>
</tr>
<tr>
<td>Fax: 201.368.2615</td>
<td>Fax: +65 6491 5660</td>
</tr>
<tr>
<td>Order Fax: 201.712.0343</td>
<td><a href="mailto:info.apac@dvtel.com">info.apac@dvtel.com</a></td>
</tr>
<tr>
<td><a href="mailto:info@dvtel.com">info@dvtel.com</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANZ AND THE PACIFIC ISLANDS</th>
<th>EMEA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DVTEL</strong></td>
<td><strong>DVTEL UK Ltd.</strong></td>
</tr>
<tr>
<td>37 Victoria Street</td>
<td>7 Lancaster Court, Coronation Road</td>
</tr>
<tr>
<td>Henley Beach, SA 5022</td>
<td>High Wycombe HP12 3TD</td>
</tr>
<tr>
<td>Australia</td>
<td>England</td>
</tr>
<tr>
<td>Tel: +61 8 8235 9211</td>
<td>Tel: +44 (0) 1494 430240</td>
</tr>
<tr>
<td>Fax: +61 8 8235 9255</td>
<td>Fax: +44 (0) 1494 446928</td>
</tr>
<tr>
<td>Mobile: +61 419 850 166</td>
<td><a href="mailto:info.uk@dvtel.com">info.uk@dvtel.com</a></td>
</tr>
<tr>
<td><a href="mailto:info.anz@dvtel.com">info.anz@dvtel.com</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INDIA AND SAARC, GULF REGION</th>
<th>CENTRAL AND LATIN AMERICA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DVTEL India Pvt., Ltd.</strong></td>
<td><strong>DVTEL Mexico S.A.P.I. de C.V.</strong></td>
</tr>
<tr>
<td>303, SSR Corporate Park</td>
<td>Felipe Villanueva No. 10</td>
</tr>
<tr>
<td>Mathura Road</td>
<td>Col. Guadalupe Inn</td>
</tr>
<tr>
<td>Faridabad 121002</td>
<td>México, D.F. 01020</td>
</tr>
<tr>
<td>Haryana, India</td>
<td>México</td>
</tr>
<tr>
<td>Tel: +91 (129) 431 5031</td>
<td>Tel: +5255 5580 5618</td>
</tr>
<tr>
<td>Fax: +91 (129) 431 5033</td>
<td>Fax: +52 55 8503 4299</td>
</tr>
<tr>
<td><a href="mailto:info.asia@dvtel.com">info.asia@dvtel.com</a></td>
<td><a href="mailto:info.cala@dvtel.com">info.cala@dvtel.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DVTEL NORTH ASIA</th>
<th>DVTEL北亞地區</th>
</tr>
</thead>
<tbody>
<tr>
<td>2404, 24/F, World-Wide House</td>
<td>香港中環德輔道中19號</td>
</tr>
<tr>
<td>19 Des Voeux Road Central</td>
<td>環球大廈2404室</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>電話: +852 3667 9295</td>
</tr>
<tr>
<td>Tel: +852 3667 9295</td>
<td>手提: +852 9479 4195</td>
</tr>
<tr>
<td>Mobile: +852 9479 4195</td>
<td>電郵: <a href="mailto:info.northasia@dvtel.com">info.northasia@dvtel.com</a></td>
</tr>
<tr>
<td><a href="mailto:info.northasia@dvtel.com">info.northasia@dvtel.com</a></td>
<td></td>
</tr>
</tbody>
</table>

To request the latest versions of firmware and software or to download other product-related documents, visit [http://www.dvtel.com/support](http://www.dvtel.com/support). If you have obtained a login, go to our support gateway. For assistance, email us at [support@dvtel.com](mailto:support@dvtel.com) or phone 1-888-DVTEL77.