ROADSCAN DTW 1.0

V.E.D.R. Video Event Data Recorder

Product Manual

Importeur / Distributeur BENELUX

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1. - DTW V.E.D.R. dual lens camera

2. - Application software

3. - Mounting hardware

4. - A.P. Configuration- Quick Guide

ROADSCAN DTW 1.0

1- DTW V.E.D.R. Dual Lens Camera

Power supply:

Typical 9.26 Vcc.
Reverse polarity protection.
Overvoltage protection (max 32 Vcc).
Power supply connector access protected with mechanical key.

Current supply protection:

PTC on terminal block.

Power:

3W approx.

External video channel:

Resolution: VGA (640x480).
Frame rate: 12.5 fr/sec.
Optical field: 120°.
Sensibility: Min 1 Lux.

Internal video channel (*):

Resolution: VGA (640x480).
Frame rate: 12.5 fr/sec.
Optical field: 140°.
Sensibility: Min 1 Lux.
IR Light: IR led array (6 IR led 120°).

(*) The internal video channel can be disabled via device setup menu.

Audio channel:

Mono 22050 Hz.

GPS Receiver:

External SIRFF 20 sat.

Acceleration sensor:

Solid state 3 axis, range +/- 2G.

Memory device:

SD Card 4 GB supplied (8 GB optional).
SD Card access protected with mechanical key.

Recording mode:

Automatic: acceleration/impact signal analysis.
Manual: recording button.
External source: external trigger source.

Event classification:

Automatic based on setup:
Normal event range: 0.1 dG to 1.0 dG.
Critical event range: 1.1 dG to 2.0 dG.

1- DTW V.E.D.R. Dual Lens Camera

Recording period:

Minimum: from -2 sec before event to +2 sec after event.
Maximum: from -20 sec before event to +20 sec after event.
(period before and after event are equal).

Event recording capacity:

50 normal events.
50 critical events.
50 manual recording button.
50 external trigger 1.
50 external trigger 2.
50 external trigger 3.

Event recording handling:

All kinds of events can be selected as overwrite enabled or overwrite disabled.

D.I.T.:

Data recording period 1 min, record structure:
Date, time, GPS position, acceleration max and min X-Y-Z, impact X-Y-Z, speed.

Log file:

A log file is available in order to check the device working status.

Communicator interfaces:

USB 2.0
WiFi 802.11 b/g.

USB communication:

Direct connection between PC and DTW via the provided USB cable.

WLAN communication:

Communication between PC and DTW require a WiFi Access Point.
Optional protected communication via WPA-TKIP encryption (96 bit).

Operator interface:

TFT display 320x240, 65000 colors.
Led retroillumination.
Keyboard 5+1 button + ESC button.
Event status led.
Manual record button.

Diagnostic pages:

Display the current operating DTW status:
All the main working parameters.
All the wlan selected parameters.
Video stream from the front lens.
Video stream from the internal lens.
Secure SD Card removal menu.
Secure local device setup menu.

1- DTW V.E.D.R. Dual Lens Camera

Local event preview:

All the video events recorded can be previewed using the DTW lcd.

Device setup:

A subset of the configuration parameters can be selected via the local device setup (4 digit password required).

Secure SD Card removal:

The SD Card removal operation is executed via a secure procedure (4 digit password).

Ready to go:

The driver can be alerted via the DTW lcd display and the buzzer when the wlan operation is completed and the vehicle leaves the wlan area.

2- Application software

Compatibility:

Windows XP (SP4).
Windows Vista.
Windows 7.

Installation procedure:

Not required. The software provided can be simply copied to a destination directory on a local hard disk.
Only the DTW USB driver must be installed.

DTW Data Manager

is the main application software.
(DTW Wlan Manager and DTW USB Manager may be started within the DTW Data Manager).

Main functions:

Manages the V.E.D.R. and D.I.T. data analysis, device setup, user setup, and wlan setup.

V.E.D.R. Mode

V.E.D.R. Video file handling:

Open, search, preview from SD Card event video files.
Play event video files.
Save, Custom save and delete event video files.

Custom save function:

Allows the user to start a custom executable application (permitting the transfer of event files within selected parameters: filename, date time, vehicle plate, etc).

Google Map™:

The vehicle position during an event can be traced on Google Map™ if GPS signal was available at recording time.
A path highlighting the vehicles position can be over layed onto the Google Map™.

Device setup:

Works only if the DTW SD Card is inserted on PC.
Is the main setup interface menu and allows selection of all the DTW operative parameters: DTW secure function password, event trigger number, type and thresholds for normal and critical event type, buzzer enable, local time selection, internal camera enable, lcd and video out default selection.

User setup:

Permits the management of a local directory to associate each DTW device with additional parameters such as: Administrator ID, driver name, vehicle plate.
Permits selection of other general operative parameters such as:
enable or disable Google Map™, overspeed value (used for DT data analysis).

WLan setup:

Permits selection and configuration of all the wlan operative parameters:
Server and DTW IP Address, subnet mask, gateway IP Address.
Security flag and parameters (SSID name and WPA TKIP password).

Event data extraction:

The event data tracks can be extracted from an event video file and saved to a specific text file, which displays:
Date, time, GPS position, acceleration X-Y-Z, impact X-Y-Z, speed.

Picture frame extraction:

A single video event frame can be extracted to a jpg file which saves the picture in addition to additional data related to the event video file.

Event report generation:

A single video event frame can be extracted and sent to a printer (or pdf printer).
The picture report includes the external/internal picture frames and additional data related to the event video file.

DT mode

DT ***Video file handling:***

Open, search, preview DT files from SD Card.
Play DT files.

Google Map™:

The vehicle position during a DT data segment can be traced on Google Map™ if GPS signal was available at recording time.
A path highlighting the vehicle position can be overlayed to the Google Map™.

Overspeed:

The DT main grid specifies the overspeed time computed for any DT data segment as specified in the User Setup.

Driving time:

The DT main grid specifies the driving time for any DT data segment.

DTW WLAN Manager

is the main wlan application software and can be started from DTW Data Manager or stand alone by the user.

Main functions:

Manages all the wlan functions:
Network adapter selection.
DTW Device:
Overview, disconnect, setup, data download, rtc set, firmware upgrade, shutdown, restart, ready to go.

Network adapter selection:

Having more than one ethernet adapter on the server (PC) platform will allow the selection of the specific ethernet adapter (can be a wifi unit also) connected to the AP network.

Device overview:

All the DTW devices powered on and associated with the SSID wifi network are displayed on the main grid. The following information will appear for any DTW device displayed:
IP Address, vehicle plate, serial number, last connection time.

Connection:

A DTW device on the main grid (only one device at time) can be connected to the server in order to execute on it all the following functions. When a DTW accepts the connection, the V.E.D.R. mode stops and switches to the wlan operating mode.
Current status is displayed on DTW lcd.

Device setup:

Permits the selection of all the DTW operative parameters:
Event trigger number, type and thresholds for normal and critical event type, buzzer enable, local time selection, internal camera enable, lcd and video out default selection.

Data download:

View the number, download or erase the following data files recorded on SD Card:
Normal events, critical events, Rec button events, trigger 1, trigger 2, trigger 3 events DT and Log files.

The download procedure verifies every event file transfer result (file integrity on the destination directory).

RTC Set:

Synchronizes DTW RTC to the server date and time.
If a valid GPS signal is received this function is ignored.

Firmware upgrade:

Permits the upgrade of the current DTW firmware at the end of the download: the DTW disconnects from the server, executes an automatic restart and starts in V.E.D.R. mode.

Disconnect:

The server commands a disconnect, the DTW restarts in V.E.D.R. mode.

Shutdown:

After the server commands a shutdown the DTW can be started only via the sequence power off/power on or key off/key on (according to installation mode).

Restart:

The server commands a DTW restart, the DTW:
disconnects from the server, executes a restart and then starts in V.E.D.R. mode.

Ready to Go:

The server commands a Ready to Go. The DTW warns the vehicle driver via a specific lcd page and an acoustic alarm that the wlan operation is completed and can leave the parking area.
After 10 sec the DTW executes an automatic restart and then starts in V.E.D.R. mode.

DTW USB Manager

Is the main USB application software and can be started from DTW Data Manager or stand alone by the user.
DTW is detected only if the USB driver is installed.

Main functions:

Manages all the USB functions:
Network adapter selection.
DTW device:
Connection, setup, data download, rtc set, firmware upgrade, shutdown, restart.

Connection:

A DTW device, if detected by the OS, can be connected to the server in order to execute all the following functions. When a DTW accepts the connection, the V.E.D.R. mode stops and switches in USB operating mode.
Current status is displayed on DTW lcd.

Device setup:

Permits selection of all the DTW operative parameters:
Event trigger number, type and thresholds for normal and critical event type, buzzer enable, local time selection, internal camera enable, lcd and video out default selection.

2- Application software

Data download:

View the number, download or erase the following data files recorded on SD Card:
Normal events, critical events, Rec button events, trigger 1, trigger 2, trigger 3 events
DT and Log files.

The download procedure verifies every event file transfer result (file integrity on destination directory).

RTC Set:

Synchronizes the DTW RTC with the server date and time.
If a valid GPS signal is received this function is ignored.

Firmware upgrade:

Upgrade the current DTW firmware.
At the end of the downloads;
the DTW disconnects from server, executes an automatic restart and starts in V.E.D.R. mode.

Shutdown:

After the server commands a shutdown the DTW can be started only via the sequence power off/power on or key off/key on.

Restart:

The server command a DTW restart, the DTW:
disconnects from the server, executes a restart and then starts in V.E.D.R. mode.

3- Mounting hardware

The following hardware is provided with Roadscan DTW:

- **Power supply cable**
- **Terminal connector**
- **Remote emergency button**
- **USB Cable**
- **GPS Receiver**
- **Security mechanical key**

Power supply cable:

Is a standard 8 wire ethernet cable (no cross).

Terminal connector:

Placed typically in the vehicle fuse box, the terminal connector will permit an easy connection with the vehicle's power supply. The terminal connector is equipped with the power supply PTC protection.

Remote emergency button:

Is a standard normally open type switch and its typically connected to one of external trigger input channels and placed in a discreet location.

USB Cable:

Is a standard shield USB cable equipped with a standard USB and a standard mini USB connectors. Allows direct connection between the PC and Roadscan DTW

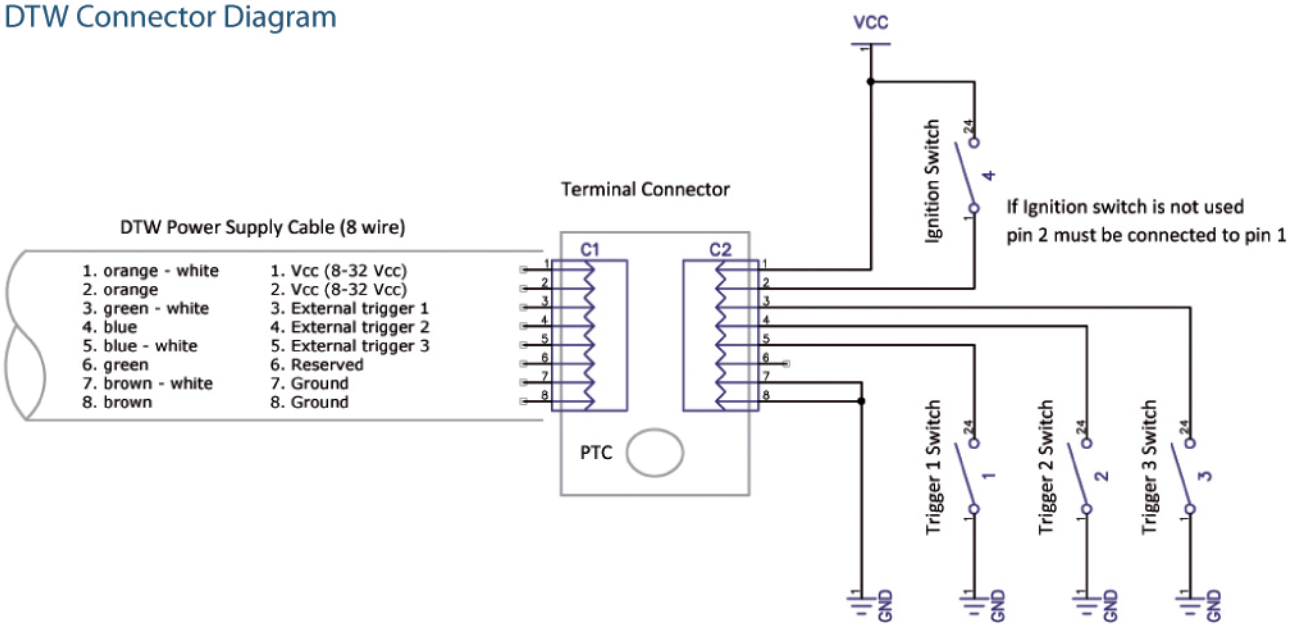
GPS Receiver:

The GPS receiver is a stand alone GPS unit equipped with ARM processor.
20 channel SIRFF III, the unit stores the last detected satellite position in order to have a fast reboot and GPS link.

Security mechanical key:

The access to the power supply cable and the SD Card slot is hardware protected via a specific mechanical key which permits the correct positioning of the camera body and locks/opens the power supply cable and SD Card slide doors.

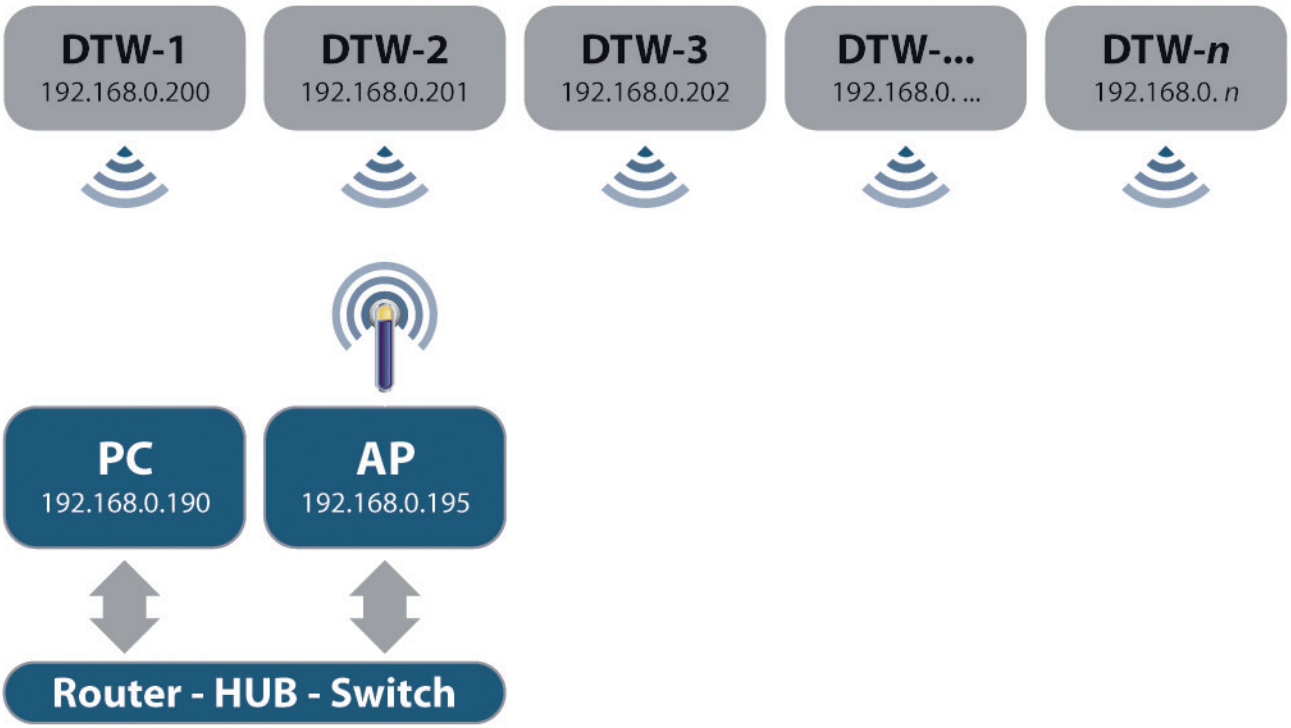
DTW Connector Diagram



DTW network case 1:

PC - Access Point - DTW

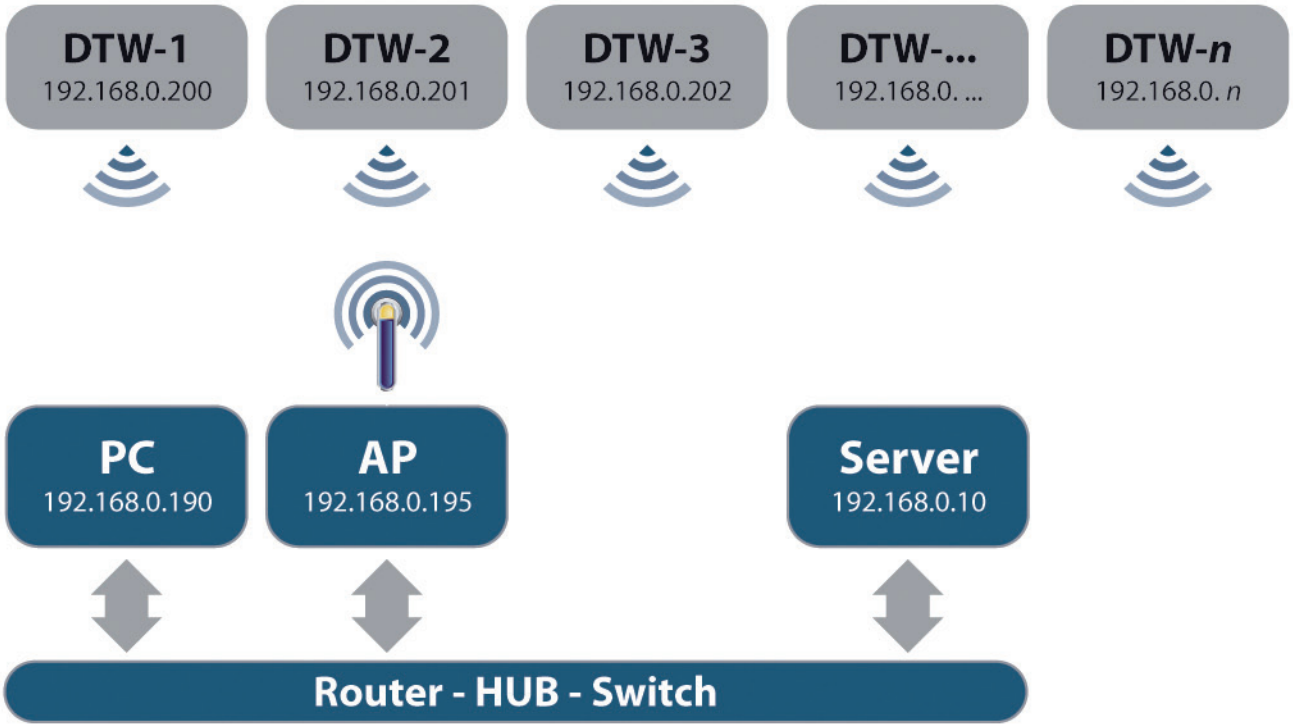
All devices are configured on the same network.



DTW network case 2:

PC - Access Point - Server - DTW

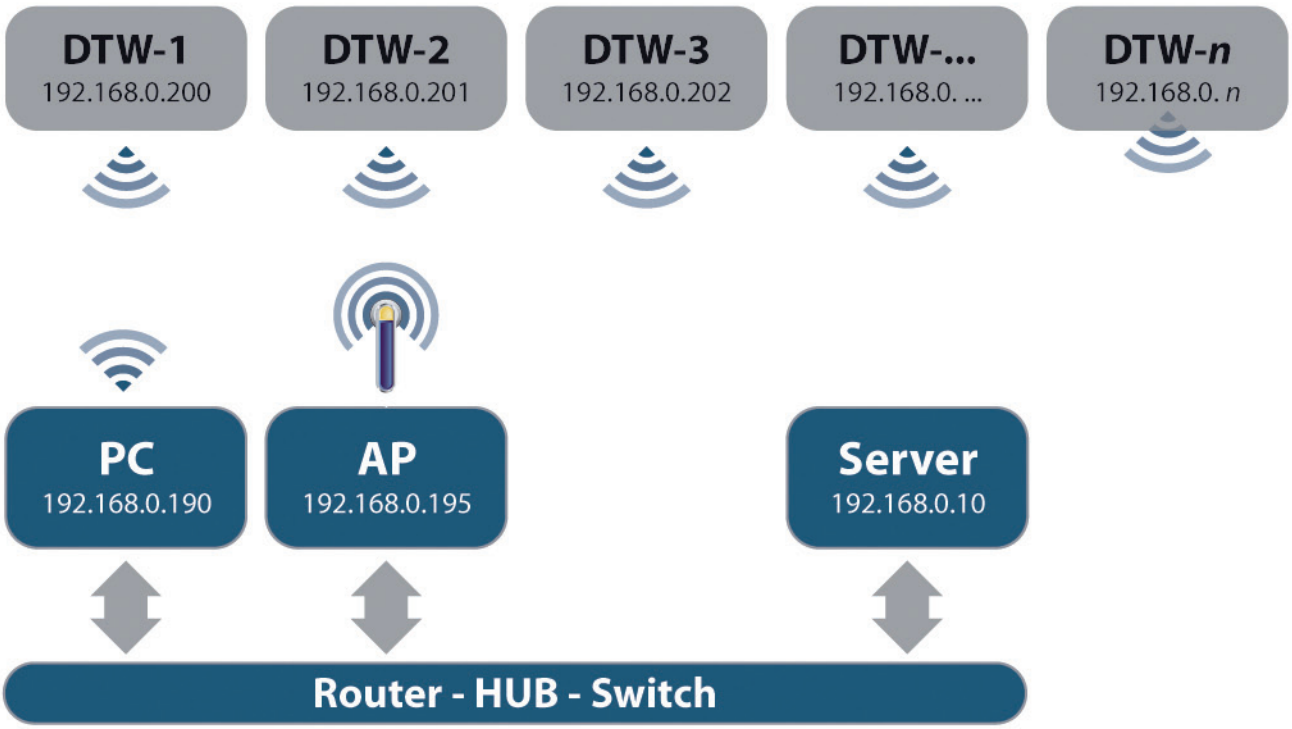
All devices are configured on the same network.



DTW network case 3:

PC - Access Point - Server (optional) - DTW

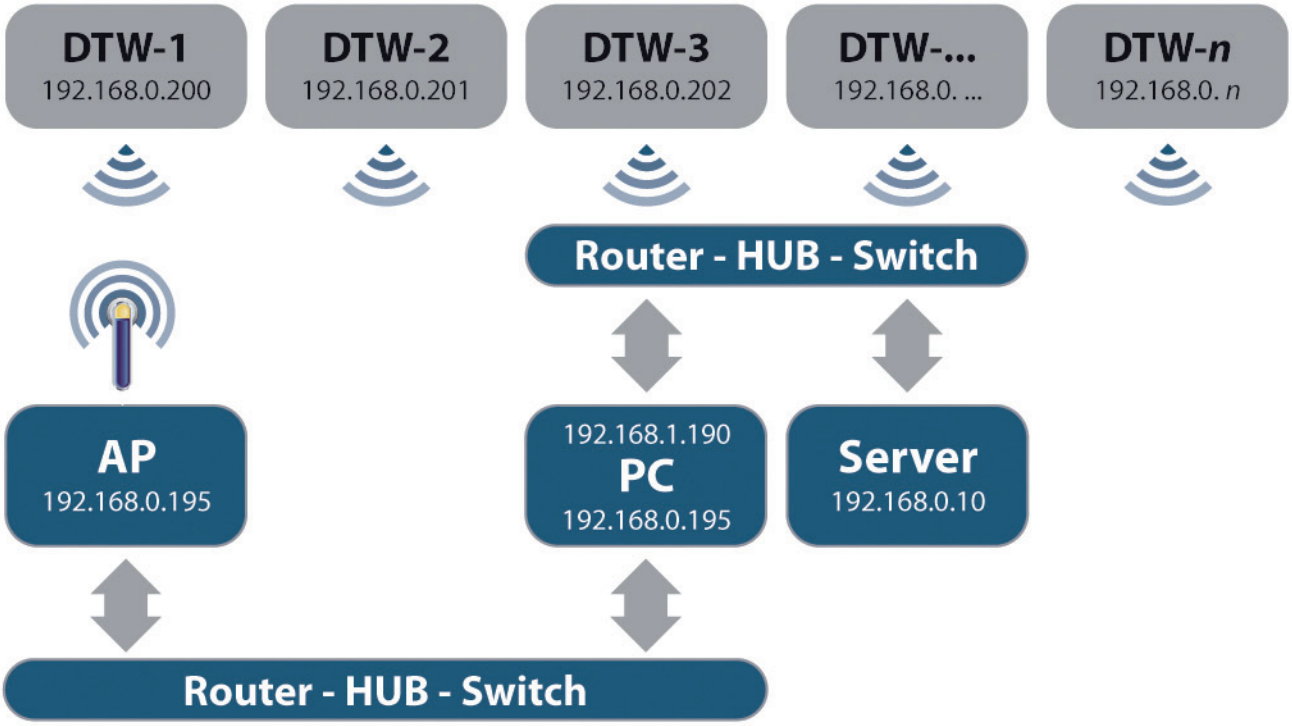
All devices are configured on the same network.
PC is connected via WiFi.



DTW network case 4:

PC - Access Point - Server - DTW

PC - AP - DTW are configured on the same network.
PC - Server are configured on a dedicated network.



DTW network case 5:

PC - Access Point - Server - DTW

PC - AP - DTW are configured on the same network (PC connection WiFi).
PC - Server are configured on a dedicated network.