

tailored **fire & security**®

TFSCAM - BWV - Mobile Video Technology Body Worn Video – Live Streaming

TFSCAM BWV is a body-worn video recording system for professional use that is capable of live video streaming over 3G, 4G and Wi-Fi networks to e.g. command and control rooms. It's a plug & play solution to:

- increase employee security
- create better situational awareness for command & control decisions
- gather video evidence
- enable remote engineering.



The TFSCAM BWV is a complete and integrated video system that covers all aspects of professional hands free video capturing and wireless streaming: best in class video quality, data security, robust design (shock-, dust- and waterproof), live video and easy to use.

The ruggedized system is developed for use in law enforcement, security, first responders, fire departments, military, extreme sports and industry. The TFSCAM BWV product range is supported and continuously improved by the TFS team.

Live module

Video & data streaming over 3G, 4G and Wi-Fi

Antennas for 3G, 4G, Wi-Fi & GPS
Streams live video to control room
TV quality video over 3G, 4G and Wi-Fi
Compact housing for optimal comfort

Robust wireless connection

Dynamic bandwidth control
Positioned high on body for optimal reception

User control

2 buttons to start & stop streaming
LEDs & buzzer for status feedback
Control room can remotely start streaming

Recorder

Shock, dust & waterproof

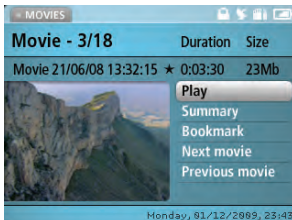
8 GB Solid State Memory (micro SDHC)
Shock proof & reliable recording
Up to 6 hrs TV quality footage
Extendable to 32 GB (24 hrs video)

USB connector

Upload videos to PC / MAC
Battery recharge

Intuitive user interface

Play video, check camera view
and change settings



Video Authentication

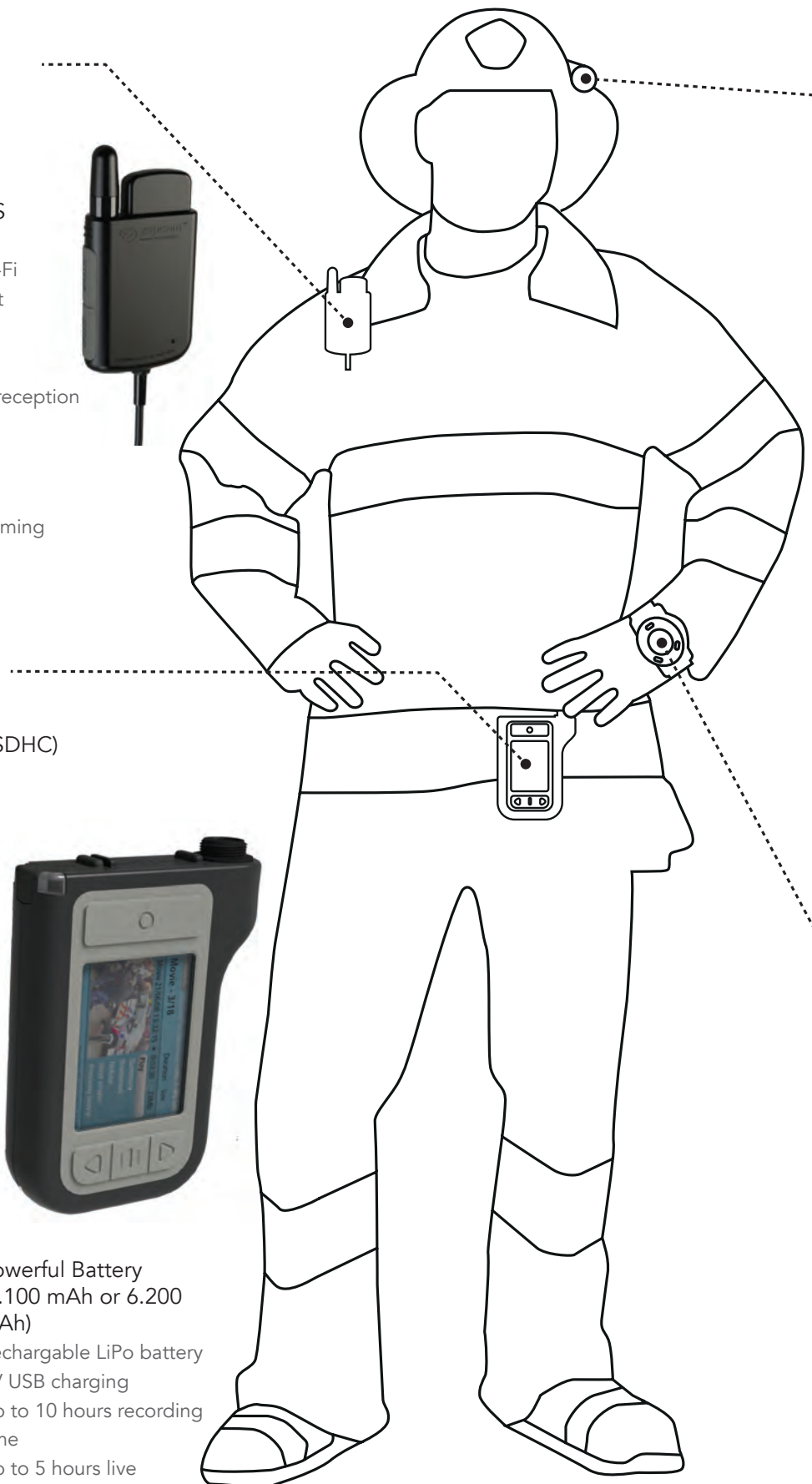
Watermark in video
Date & time stamp in video
Officer ID number in video

Security

Device pin code login
SD card protection
USB connection with security key
3 user authorisation levels
Video encryption

Powerful Battery (3.100 mAh or 6.200 mAh)

Rechargeable LiPo battery
5V USB charging
Up to 10 hours recording time
Up to 5 hours live streaming time



Camera

Top quality video & data recording
Several camera options

CCD camera

1/3" Sony Super HAD CCD
TV quality video (D1): 720 x 576 pixels; 550 TV lines
Face recognition quality

Day & night vision

Automatic & fast white balance
Extreme low-light sensitivity (0.05 Lux) for night surveillance

Wide range of lenses

Standard wide angle: f2.97 (130 degrees)
Other options: f2.45, 3.6, 6.8, 12 mm

Anti fog lens

Always clear vision when switching from cold to hot environments

Flexible camera mounting

For helmets, pipes & surfaces
Ease of use, flexible & rock steady

In-cable microphone

Audio recording keeps working when camera is disconnected



Clip Camera

Connect camera to clothing
High video quality
Integrated microphone
Flexible & sturdy connection for stable image



Bullet Camera

Compact size
19 mm camera diameter
Several mounting options



Remote control

One button for rec, stop and tag

Wireless ANT technology

Disturbance free connection up to 5 meters
Bidirectional communication

Scene tagging

Mark key moments while recording
Easy retrieving of tagged scenes



3 status LEDs

Feed back on device status:
Recording on/ off; battery power low;
Streaming video on/off

Accessories

Mounts, batteries & more



Motor helmet mount

Aluminum bulletcam mount
Sturdy & adjustable
Hard shell helmets (motor, fire fighter, riot police)
3M Duo lock connection to flat & light curved surfaces



Mountain bike helmet mount

Universal bulletcam mount
Fits a wide range of mountain bike helmets
Flexible, sturdy and adjustable



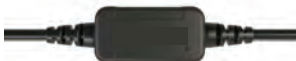
Strap mount

Bulletcam mount for shoulder, goggle or straps on back packs
Flexible & sturdy



TFSCAM belt pouch

Carrying case for TFSCAM recorder & external battery pack
Sturdy & easy attachment to belt



GPS Unit

In cable GPS receiver for the TFSCAM BWV
Records Lat Long coordinates, speed, elevation
GPX file recorded on TFSCAM
In screen data display possible



External battery pack

Spare battery pack for TFSCAM BWV
3.400 mAh
Extra recording time: 3 hours
Extra standby time: 9 hours



TFSCAM Docking Station

Fast charge of connected TFSCAMs
Auto transfer of video files to PC
Up to 4 TFSCAMs
Including PC software



Spare parts

The TFSCAM BWV product range is supported by a wide range of available spare parts like cables, memory cards, chargers, housing parts etc.

Product Overview

FEATURES	TFSCAM BWV	TFSCAM BWV - XT	TFSCAM BWV - LIVE
Description	Complete bodycam for local video recording	Complete bodycam for local video recording, extra battery power, upgrade possible to streaming video	Complete bodycam for local video recording and video streaming over 3G, 4G and Wi-Fi
Hardware	Recorder Camera Remote control	BWV-XT Recorder Camera Remote control	BWV-XT Recorder Camera Remote control Live module
Video recording & replay	√	√	√
Video encryption	√	√	√
Multi user support	√	√	√
Available cameras	Bulletcam, clipcam, buttoncam	Bulletcam, clipcam, buttoncam	Bulletcam, clipcam, buttoncam
GPS	Optional	Optional	√
Battery	3100 mAh	6200 mAh	6200 mAh
Recording time / standby time	4.5 h / 15 h	9 h / 30 h	5 h / 15 h while streaming
Streaming video over 3G, 4G and Wi-Fi	-	Possible after upgrade	√

BENEFITS TFSCAM BWV SYSTEM:

- Local recording & live video streaming over 3G, 4G & Wi-Fi
- Very easy to use, plug & play system
- Compact, modular & ruggedized, developed for professional use
- Hardware, software and network elements are well integrated
- End-to-end solution for live video streaming
- European design, engineering & electronics
- TFSCAM BWV users include police departments, fire departments, first responders, military police, special forces, training institutes, municipalities, industry, extreme sport athletes & security companies

Live network

Robust & flexible network solution

The TFSCAM BWV - Live comes with a robust, secure and flexible network solution. Dynamic bandwidth management software between TFSCAM BWV - Live units and the TFSCAM Video Server ensures optimal and robust video streams. Live video and data can be streamed over 3G, 4G or Wi-Fi networks.

Live video will be streamed to a shared and secure TFSCAM proxy server (called TFSCAM Video Server) and can be redirected to command & control rooms, computers or handheld devices over the internet or own dedicated networks.

A TFSCAM Video Server API is available for integration with e.g. command & control room software. The TFSCAM network solution can also be used for live video streams from other camera devices using the TFSCAM mobile video technology.

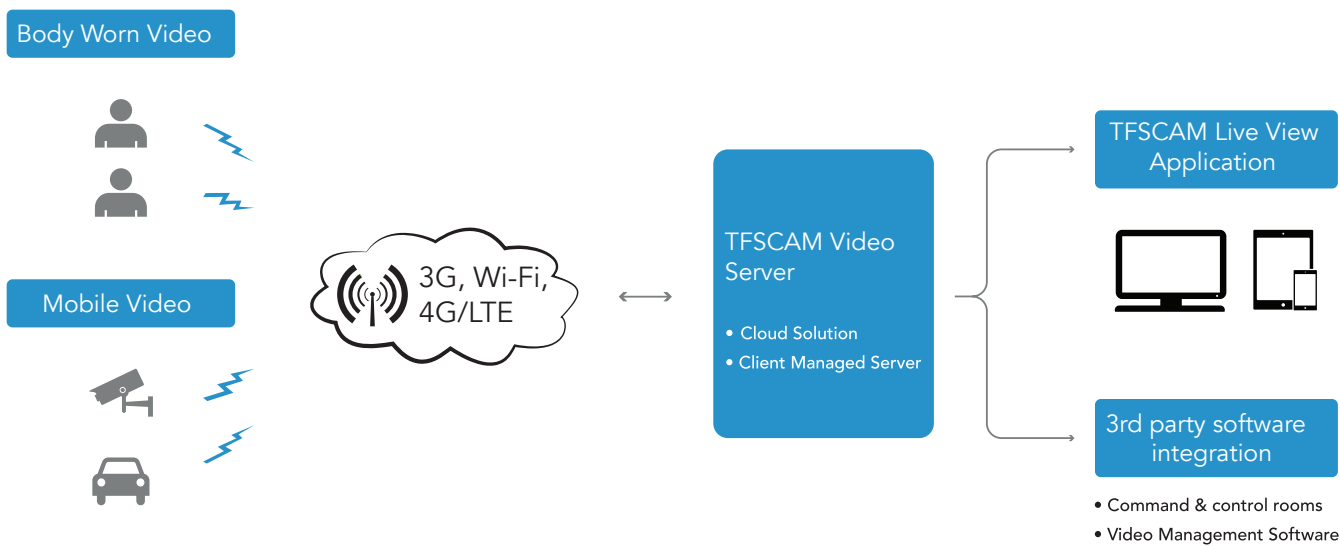
Secure data & video connections

All network connections (3G, Wi-Fi internet) are secure (VPN, Firewall). TFSCAM offers standard a shared & complete secure Video Server. For clients that demand a dedicated server solution, it is possible to use a TFSCAM Black Box or own server with TFSCAM Server Software.

The combined use of Wi-Fi, 3G and 4G networks makes the TFSCAM BWV - Live a cost effective streaming solution.

The TFSCAM BWV - Live can be monitored and activated remotely.

For user privacy reasons it is possible to notify the user by buzzer or LED light when the streaming is activated remotely.



TFSCAM hardware

TFSCAM platform for video streaming

Integrated solution for high quality & secure live streaming of video, audio and (GPS) data



TECHNICAL SPECS WIRELESS VIDEO STREAMING

Required hardware	TFSCAM Live module TFSCAM BWV - XT recorder Camera
Video & data flow	Live video will be streamed to a secure TFSCAM proxy server Video stream can be securely redirected and viewed by command & control rooms and on a browser application for computer, tablet and mobile
Supported networks	3G, 4G, Wi-Fi (other network support on request)
3G	HSDPA/HSUPA/UMTS: 900/2100MHz or 850/1800/1900MHz GSM/ GPRS/ EDGE: 850/ 900/1800/1900MHz HSDPA up to 14.4 Mbps; HSUPA up to 5.76 Mbps
4G	LTE: 800/1800/2600 MHz Other bands upon request
Wi-Fi	Compliant 802.11a/b/g/n (up to 300Mbps) Managed & Ad-hoc
GPS	GPS data is real time transmitted to the TFSCAM Video Server GPS tracking possible without video transmission
Security	VPN/APN secure connection from device to video server Secure connection between video server and video viewer (Command & control, computer, browser)
Wireless video streaming	Resolution: 720x576 (D1), 352x288 (CIF) Bandwidth management for optimal quality Bit rate/ frame rate/ resolution control h.264 compression Streamed video will be stored on TFSCAM BWV - XT recorder and TFSCAM video server
TFSCAM video server	Dynamic bandwidth management with TFSCAM devices Video transcoding, storage device and user management Available as cloud service or standalone server software API availability for control room, web view, mobile view
Power	6.200 mAh LiPo battery: Average streaming time 3G, 4G: 4 ,5 hours / Wi-Fi: 5 hours Standby time: 11 hours On the go charging possible
Remote diagnostics & device control	TFSCAM BWV - Live can be controlled remotely from command & control room: start/ stop recording & streaming, GPS on/ off, adjust bit rate/ frame rate/ resolution, snap shot functionality, read device diagnostics (e.g. power status)
User privacy	User can be notified (buzzer, LED) when streaming starts, user can manually switch off video streaming
Proxy server solutions	Shared & secure TFSCAM Video Server, TFSCAM Black Box, TFSCAM Video Server software or own private server

GENERAL

Hardware components:	Recording unit, camera, live unit, remote control, cable
Waterproof:	Recorder, camera, remote control: IP67, Live Unit: IP66
LCD display:	2.8" TFT
I/O Ports:	Micro SD Card slot, USB 2.0, Mic-In, AV-Out, PAL Analog (pass through)
Recording Capacity:	8 GB, extendable to 32 GB
Operating temperature:	-10°C to +50°C
Power:	LiPo battery, 3.100 mAh or 6.200 mAh Recharge through USB
Microphone:	Cable mounted & 3.5mm Aux mic. input on handheld unit
Mic. Sensitivity:	90 dB AGC range, -42dB@1kHz, 16kHz sampling, 16bit PCM
Remote control:	RF ANT technology, bidirectional, LEDs for device status feedback
Mounting:	Helmets, shoulder, flat surfaces, straps, clothing

VIDEO & OPTICS

Recording speed:	25 fps
Formats:	MOV, h.264, PAL
Resolution:	D1 (720x576) & CIF (352x240); 550 TV lines
White Balance:	Auto
S/N Ratio:	45 dB or more
Pick-up device:	1/3" Sony Super HAD CCD
Minimum illumination:	0.05 lux
Lens options:	f2.45, 2.97, 3.6, 6, 8, 12 mm

Wireless Video	
Supported networks:	3G, 4G, Wi-Fi (managed & Ad-hoc)
Live video view:	command & control rooms, video player on computer, mobile devices

GPS & Accelerometer	
Accuracy position:	2.5 meter
Accuracy speed:	0.05 m/s
Accuracy time:	Hot: 1 sec, cold: 35 sec
Channels:	66 (22 tracking)
Acceleration:	X,Y,Z axis +/-16G with 4mG resolution

SECURITY & VIDEO AUTHENTICATION

Encryption:	AES 128
Login:	Officer ID login Device pin code login
In screen:	Officer ID, region code & watermark Time / date, GPS & frame counter

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