

iView Data Ltd

# THE ULTIMATE GUIDE TO

# for Businesses

## 2025 Edition

Capture Cards • Hardware Encoders • Switchers • NDI • SRT • Full Brand Comparisons  
 Magewell • Elgato • Blackmagic Design • AVerMedia • Roland • Kiloview • BirdDog • YoloLiv • INOGENI • NZXT • EVGA • Razer

Broadcast & Streaming Specialist | iView Data Ltd  
[iviewdata.com](http://iviewdata.com) | [sales@iviewdata.com](mailto:sales@iviewdata.com) | +44 (0)116 2787812  
 Authorised UK Magewell Supplier — Leicester, UK

**For Journalists, Publishers & Technical Writers**  
 This guide may be freely cited, linked to, or referenced with attribution: "iView Data Ltd, The Ultimate Guide to Live Streaming Architecture for Businesses (2025), [iviewdata.com/ultimate-live-streaming-guide/](http://iviewdata.com/ultimate-live-streaming-guide/)" — No permission required for editorial citation.

### SECTION 01 — FOUNDATIONS

Every live stream follows a universal five-stage signal chain. Understanding each stage is the foundation for correct hardware selection and system design.



### SECTION 02 — HARDWARE TIERS

Tier	Brands	Designed For	Driver Model	Warranty
Broadcast	Magewell, BirdDog, Kiloview	24/7 broadcast, enterprise	UVC / standard	2–3 years

<b>Prosumer</b>	AVerMedia, Roland, YoloLiv, INOGENI	Event production, education	Mixed	1–2 years
<b>Consumer</b>	Elgato, Razer, NZXT, EVGA	Gaming, hobbyist streaming	Proprietary	1–2 years

### SECTION 03 — USB CAPTURE DEVICE COMPARISON

Product	Brand	Max Input	Loop-Thru	Driver	FPGA	Wty	~UK RRP
USB Capture HDMI 4K Pro	Magewell	4K60 4:4:4	HDMI 2.0	UVC	YES	3yr	~£440
USB Capture HDMI 4K Plus	Magewell	4K30/1080p90	HDMI 2.0	UVC	YES	3yr	~£350
Cam Link 4K	Elgato	4K30/1080p60	None	Propr.	NO	2yr	~£120
4K X	Elgato	4K144 HDR10	HDMI 2.1	Propr.	NO	2yr	~£150
Live Streamer CAP 4K BU113	AVerMedia	4K30/1080p60	None	Propr.	NO	2yr	~£180
SHARE2U HDMI	INOGENI	1080p60	None	UVC	NO	2yr	~£220
Ripsaw HD	Razer	1080p60	None	Propr.	NO	1yr	~£80
Signal 4K30	NZXT	4K30/1080p60	None	Propr.	NO	2yr	~£130
XR1 Lite	EVGA	4K30/1080p60	None	Propr.	NO	3yr	~£100

#### ■ UVC Advantage

Magewell USB Capture devices use the OS-native UVC standard — no custom drivers. Compatible with OBS, vMix, Zoom, Teams, Wirecast, and any webcam-accepting software. Immune to Windows Update driver breakage.

### SECTION 04 — PCIe CAPTURE CARDS

Product	Brand	Max Capture	Interface	Input	Multi-Stream	OS	~UK RRP
Pro Capture HDMI 4K Plus	Magewell	4K60 4:4:4	PCIe x4	HDMI 2.0	Unlimited	Win/Linux/Mac	~£650
Pro Capture HDMI 4K	Magewell	4K30/1080p60	PCIe x4	HDMI 1.4	Unlimited	Win/Linux/Mac	~£450
DeckLink Mini Recorder 4K	Blackmagic	4K30/1080p60	PCIe x1	HDMI/6G-SDI	Limited	Win/Mac	~£140
Live Gamer 4K GC573	AVerMedia	4K60 HDR	PCIe x1	HDMI 2.0	No	Win only	~£200
4K Pro	Elgato	4K60 HDR	PCIe x4	HDMI 2.1	No	Win/Mac	~£200

### SECTION 05 — ENCODERS, SWITCHERS & ALL-IN-ONE SYSTEMS

Product	Brand	Max Output	SRT	NDI	Multi-Platform	~UK RRP
Director Plus	Magewell	4K60 @ 120Mbps	YES	Full NDI	4 simultaneous	~£3,500
Director One	Magewell	1080p60	YES	NDI HX	2 simultaneous	~£1,600
Ultra Encode HDMI	Magewell	1080p60 @ 16Mbps	YES	NDI HX	YES	~£600
ATEM Mini Pro ISO	Blackmagic	1080p60 + ISO rec	YES	NO	1 + ISO	~£600
E3 Dual Encoder	Kiloview	4Kp30 HDMI / 1080p60 SDI	YES	NDI HX2/3	Up to 16	~£550

Product	Brand	Max Output	SRT	NDI	Multi-Platform	~UK RRP
P200 NDI PTZ Cam	BirdDog	1080p60 @ 140Mbps	NO	Full NDI	N/A	~£1,800
YoloBox Mini	YoloLiv	1080p60	YES	NO	3 simultaneous	~£480
V-1HD+	Roland	1080p60	NO (ext)	NO	NO (ext)	~£700
Pro Convert NDI->HDMI 4K	Magewell	4K60 HDMI out	NO	Full NDI+HX	N/A	~£700

## SECTION 06 — STREAMING PROTOCOLS REFERENCE

Protocol	Typical Latency	Error Correction	Encryption	Primary Use
<b>SRT</b>	1–3s	FEC (forward error correction)	AES-256	Contribution links, remote streaming
<b>NDI</b>	~1s	Ethernet reliability	Optional	Local LAN IP production, camera feeds
<b>RTMP</b>	3–8s	None	None	Platform ingest (YouTube, Twitch, Facebook)
<b>HLS</b>	10–30s	HTTP retry	HTTPS	Viewer delivery, web players, VOD
<b>RTSP</b>	1–3s	RTP retransmit	Optional	IP cameras, NVR feeds, internal distribution
<b>WebRTC</b>	<500ms	DTLS/SRTP	Always	Interactive platforms, sub-second delay

## SECTION 07 — PRE-STREAM PRODUCTION CHECKLIST

Verify each item before going live. Suitable for corporate, education, events, and worship productions.

- All camera/source signals confirmed active in production software
- Loop-through output verified — preview monitors showing signal
- Audio levels checked — no clipping. Target: -14 LUFS for streaming platforms
- Encoder bitrate set correctly: YouTube 1080p60 = 4,500–9,000 Kbps
- Stream key verified on a private/unlisted test stream before go-live
- Network: wired Ethernet confirmed — Wi-Fi disabled on streaming PC
- Upload speed tested: at least 2x stream bitrate with headroom
- OBS/vMix scenes reviewed — correct Preview and Programme scenes active
- Lower thirds, graphics, and logos tested with correct names/titles
- Local recording started (ISO or backup)
- Secondary stream destination verified (if multi-platform)
- Platform stream health confirmed green — bitrate indicator stable
- On-screen timer/clock visible for timing cues

- Backup internet (4G/5G hotspot) ready and tested
- Post-stream plan: recording stopped cleanly, files backed up

## SECTION 08 — TROUBLESHOOTING REFERENCE

### ■ OBS "Encoding Overloaded"

Switch to hardware encoding (NVENC/AMF). Lower resolution. Use Magewell Ultra Encode to offload encoding from PC entirely. Check GPU temperature for thermal throttling.

### ■ Dropped Frames / Packet Loss

Switch Wi-Fi to wired Ethernet. Lower bitrate by 20–30%. Switch RTMP to SRT protocol for loss-tolerant delivery. Check firewall/antivirus is not blocking stream output.

### ■ Capture Card Not Detected in OBS

Magewell: try different USB 3.0 port (not a hub). Elgato/AVerMedia: reinstall latest drivers. Check HDCP — most cards cannot capture HDCP-protected sources. Set resolution/format manually in OBS.

### ■ NDI Audio Sync Drift

Enable "Use network timestamp" in NDI source properties. Use dedicated Gigabit Ethernet for NDI. Hardware NDI encoders (Magewell/BirdDog) provide hardware clock reference for stable timing.

### ■ Green/Purple Capture Artefacts

Update/reinstall capture card drivers. Check USB cable. Try different USB controller. Magewell UVC devices are immune — they use no custom drivers.

### ■ SRT Connects but No Video

Verify Caller vs Listener mode are opposite at each end. Passphrase and latency values must match exactly. Check firewall on destination port. Set latency to 120ms as baseline.

### ■ Stream Quality Degrades Over Time

Monitor CPU/GPU temperature for thermal throttling. Check platform analytics for CDN congestion. Verify encoder bitrate matches platform ingest limit. Ensure PC RAM is sufficient (8GB+ recommended with OBS).

## SECTION 09 — USE CASE QUICK REFERENCE

Use Case	Capture	Encoder/Switcher	Protocol
Boardroom / Town Hall	Magewell USB Capture 4K Plus	Ultra Encode HDMI + ATEM Mini Pro	SRT → CDN
Multi-Cam Church/Events	BirdDog P200 NDI PTZ cameras	Magewell Director Plus / vMix	RTMP → YouTube + Facebook
Lecture Capture	Magewell USB Capture 4K Plus	OBS / Zoom / Teams / Panopto	RTMP / platform API
Field / Sports Production	HDMI cameras + Ultra Encode	Magewell Director Plus	SRT (5G bonded)
IP Production Studio	Multi Pro Capture HDMI 4K+ PCIe	vMix / Wirecast + NDI routing	SRT contribution + RTMP delivery

## ABOUT THE AUTHOR

Sid Ahmed is a seasoned broadcast and streaming specialist with over 20 years of experience in live streaming workflows, live streaming systems, and professional video capture. His background includes IP-based network design, and advanced CCTV infrastructure. As part of iView Data Ltd, a leading streaming supplier based in Leicester, Sid advises clients on hardware specification, sys-

---

**Disclaimer:** All product specifications, prices, and availability information in this guide are provided in good faith based on publicly available manufacturer documentation as of June 2025. Specifications are subject to change without notice. Prices are approximate UK RRP inclusive of VAT. iView Data Ltd is an authorised UK Magewell supplier; references to Magewell products reflect this commercial relationship but all editorial comparisons represent the independent assessment of the author. Third-party brands referenced are trademarks of their respective owners. iView Data Ltd is not affiliated with Elgato, Blackmagic Design, AVerMedia, Roland, Razer, NZXT, EVGA, Kiloview, BirdDog, YoloLiv, or INOGENI. This guide is for informational purposes only.

Full online version with interactive diagrams: [iviewdata.com/ultimate-live-streaming-guide/](https://iviewdata.com/ultimate-live-streaming-guide/) | PDF download: [iviewdata.com/live-streaming-guide-pdf/](https://iviewdata.com/live-streaming-guide-pdf/) | Citation attribution: iView Data Ltd, Ultimate Live Streaming Guide, [iviewdata.com](https://iviewdata.com)