DARK COMPASS

NEXT GENERATION
SIGNAL FINDING

Detect. Demodulate. Hunt.

Technical Data Sheet

VERSION 1.2

Client Name
Room Name (Change room)
ACTIVE ANTENNAS
← Back to analyzer
0
-20
-40
-60
-80
-100
741.326M 741.351M 741.376M 741.401M 741.426M 741.451M 741.476M
100%
Approx. Direction
45°
Signal Strength
-30.2 dBM
-5 -10 -30 -60 -90
Frequency Offset (Hz)
73.873 kHz
Receive Gain (dB)
60 dB
Bandwidth (Hz)
83.553 kHz
RSSI (dB)
Frequency (kHz)
741250.00
741300.00
741350.00
741400.00
P1
P2
P3

A best-in-class frequency analyzer designed to evolve with emergent threats.

The Dark Compass is built from the ground up by TSCM operators for TSCM operators and runs real-time sweeps in the 70 MHz to 6 GHz spectrum. With over the air updates, you'll always stay one step ahead of the threat.

The Highlights:

- **Perform real-time broad sweeps** using the frequency analyzer or for specific protocols like Cellular, Wi-Fi, Radio, or Bluetooth.
- Receive contextual insights (like device information), and **turn data into lightning fast visual guidance—so you can quickly find devices or signals of interest.**
- **Export all relevant sweep data and screenshots effortlessly** with the tap of a button to any flash drive of your choice.
- See all Wi-Fi network connections and uplink points / terminals using **our interactive network map.**
- **Real-time indicators for active calls** found in Cellular 2G / 3G sweeps.
- **Remote over-the-air update** capability to bring new features to your Dark Compass.
- **Dark Compass Training Courses** can be delivered upon request.

Hardware

Hardware Overview

2x USB 3.2 Gen 1 Type-A port with PowerShare

2x USB 3.2 Gen 2 Type-C port with Power Delivery

- Ruggedized, ergonomic tablet
- Custom Linux Distribution OS
- 12” Full High-Definition Plus (FHD+) Touchscreen
- 35.6 Wh 2-cell interchangeable battery
- 90W USB-C adapter
- Powered by an ultra-fast receiver
- Starting Weight: 2.8 lbs.

What’s in the Box

Dark Compass Tablet + Mount

Dark Compass Receiver

90W USB-C Power Adapter

Mobile Stand

Shoulder Strap

Passive Pen

Rigid Tablet Handle

Optional Accessories Sold Separately

- Additional battery packs
- Fully rugged keyboard
- Mobile 2x Battery Charger with Wall Mount
- Fast charging docking station
- Wired mouse

Detection & Reporting Features

Frequency Analyzer

Perform real-time trace, peak trace and reference previously saved traces within a 70 MHz-6 GHz range.

Bluetooth

Perform real-time Bluetooth and BLE analysis for active devices with additional device information.

Cellular

Perform real-time analysis of GSM and UMTS devices; detect devices using 2G, 3G, 4G, LTE, and 5G NSA networks.

Direction Finder

Lock-on and hunt potential threats using the Dark Compass' proprietary compass and proximity via Received Signal Strength Indicator (RSSI).

Radio

Perform real-time signal analysis and demodulation for analog and digital radio communications (including DMR, NXDN, P25, X2, and DSTAR).

Wi-Fi

Perform real-time device and packet flow analysis. Gain a holisitic view of the network via the Network Map, which supports up to Wi-Fi 6 detection.

Create and Recall Scans

Create and standardize client information, (including site, room, and country details) for quick session setup at a later date.

In-Depth Reporting

Export all relevant sweep data into .csv files and screenshots with the tap of a button to any flash drive of your choice.

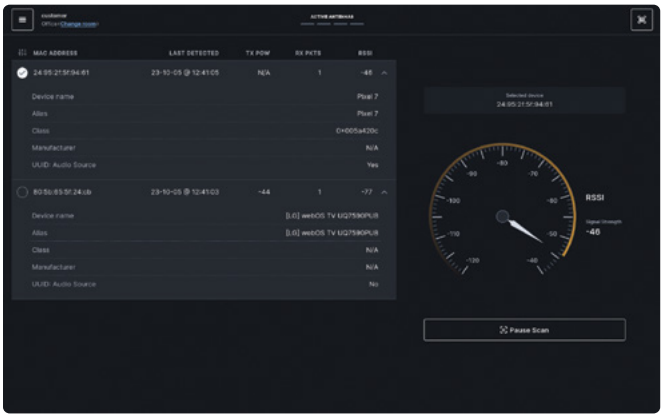
Feature Highlights

Frequency Analyzer

- Real-time Trace and Peak Trace
- Scans 70 MHz - 6 GHz
- Visual indication of receive amplitude change
- Targeted scanning to increase scan performance and accuracy
- Save and Compare Trace
- Zoom in to further analyze frequency of interest or run analysis with raster waterfall

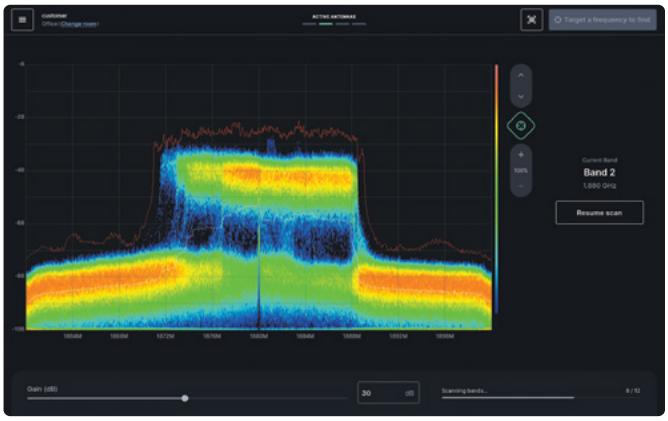
Bluetooth

- Real-time Bluetooth analysis
- Bluetooth and Bluetooth Low Energy (BLE) device scanning
- Ability to analyze transmitting devices with details like manufacturer name
- 80MHz Instantaneous Bandwidth
- Target device to find with RSSI meter



Cellular (2G, 3G)

- Real-time 2G and 3G analysis and detection
- Pre-selected bands for local 2G and 3G networks
- Passive interception of devices
- No ‘man-in-the-middle’ scenario
- Displays active devices in your proximity
- Target device to find with Direction Finder

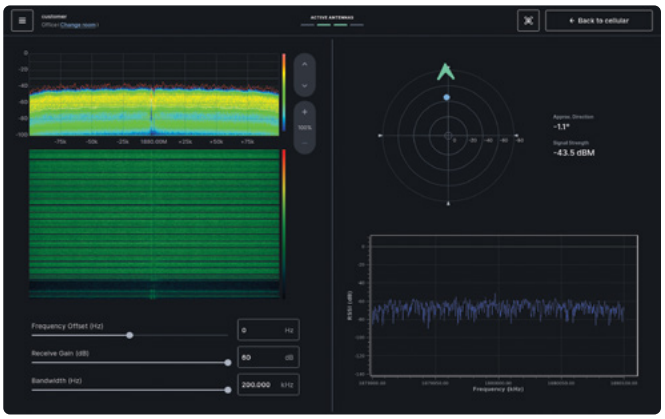


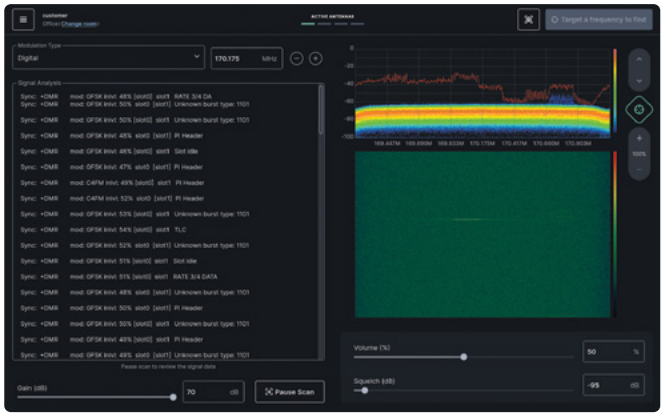
Cellular (4G, LTE, 5G NSA)

- Real-time 4G, LTE, and 5G NSA detection
- Passive detection and direction finding of multiple uplink signals
- Automated scanning of licensed bands within the chosen country
- Database supports 226 country codes
- Interactive raster waterfall to adjust amplitude, zoom view, and store center frequency
- Target frequency to find with Direction Finder

Direction Finder

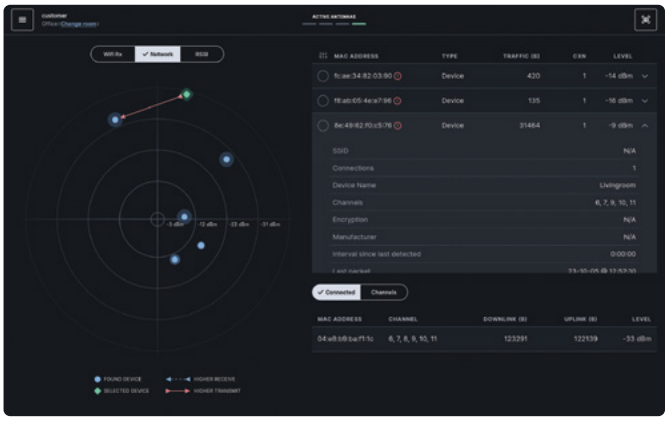
- Proprietary Direction Finding technique
- Provides captured direction combined with proximity location
- Intuitive frequency, receive gain, and bandwidth fine-tuning
- Interactive raster waterfall to adjust amplitude, zoom view, and store center frequency





Radio

- Real-time Radio Communications analysis
- Analog signal demodulation for FM, Wideband and Narrowband
- Digital signal identification for P25, NXDN, DMR, X2 and Dstar
- Target frequency to find with Direction Finder

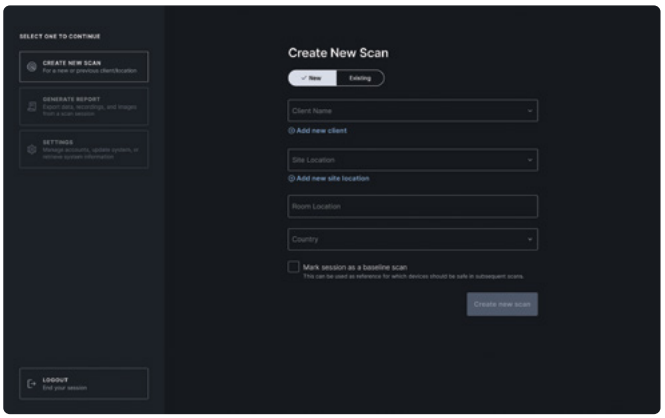


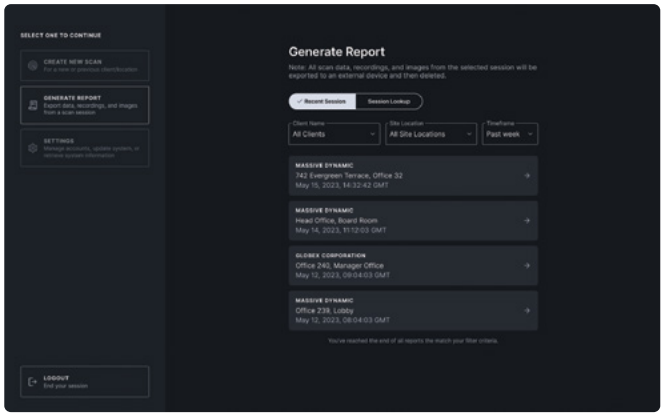
Wi-Fi

- Real-time analysis of IEEE802.11A/B/G/N/AC/AX (Dual-band under 6 GHz)
- Access point and device analysis on 2.4 GHz and 5 GHz spectrum
- Packet flow analysis to identify potential threats
- Interactive Network Map to view all discovered MAC addresses, connections, and contextual data that has been received from devices
- RSSI Direction Finding via MAC address for both devices and access points

Create and Recall Scans

- Create and standardise client information by client name, site location, country, and room
- Recall previously stored client information for quick scan session setup

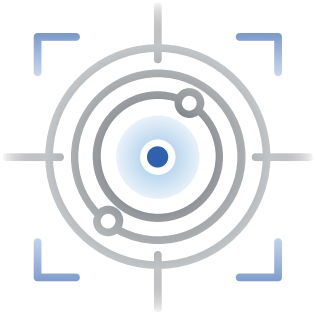




In-Depth Reporting

- Conveniently export a recent session with a tap of a button or perform a session lookup
- Session data exported as .csv files along with screenshots to any flash drive of your choice for ease of data extraction for your reports
- Automatically clear exported session data to maximize device performance

Accuracy Over Sweep Speeds



Precision in signal detection is paramount when locating hidden surveillance threats. The Dark Compass has optimized sweep speeds to deliver the most accurate data for you to:

Perform Comprehensive Threat Assessment	This provides a more complete picture of the security landscape by enabling a thorough examination of the electromagnetic spectrum—leaving no room for hidden electronic surveillance devices. This includes transmitters using low power or unconventional modulation.
Discriminate Between Signals	Distinguish between legitimate signals and unauthorised transmissions to ensure false positives are minimised, reducing the likelihood of unnecessary disruptions or false alarms that could compromise the integrity of the protected area.
Comply with Legal Requirements	Accuracy in signal detection and analysis is vital for ensuring evidence admissibility, maintaining transparency, and upholding ethical principles in TSCM operations—especially when conducted in corporate or government settings.
Apply Subsequent Countermeasure Tactics Effectively	The effectiveness of subsequent countermeasures depends on the accuracy of the initial assessment. Accurate data and precise localization of signals empower TSCM operators to implement targeted and efficient countermeasures.

FOR MORE INFORMATION ON THE IMPORTANCE OF ACCURACY OVER SPEED IN SPECTRUM ANALYSIS, REQUEST OUR WHITEPAPER:

info@darkcompass.co

Software

Database & Reporting

- Hardened SQL-based storage
- Digital reporting to USB flash drive in a CSV file with attached screenshots
- Integrated update server provides continous RF systems updates and new RF detection schemes

Signal Analyzer

- Trace, save, and compare
- Integrated raster waterfall with persistence
- Frequency zoom
- Rapid tune and retune capability

Direction Finder

- Integrated compass-based Direction Finding across applications

Bluetooth

- Passive real-time Bluetooth 5.3 with Bluetooth Low Energy Detection
- Integrated manufacture database for quick device Identification
- RSSI (Received Signal Strength Indicator) Hunt Mode

Radio

- Analog audio demodulation
- Digital demodulation providing signal technical specification and identification
- Supported digital modules: DMR+, NXDN, X2, P25, Dstar

Wi-Fi

- IEEE 802.11 a,b,g,n,ac,ax (dual-band)
- Passive network listening
- Network connectivity and traffic detection
- RSSI Hunt Mode
- Device-to-device directional traffic monitoring

Cellular

2G, 3G

- Passive ARFCN scanning
- Uplink device scanning with network discovery

4G, LTE, 5G NSA

- Passive by-country specific band scanning
- Visual representation of uplink signal

Hardware

General

Casing	**Rugged Control Tablet**	Radio Attachment	**VESA Magnet**
Storage Capabilities	**USB, Micro-USB**		

Receiver & Radio Frequency

ADC Sample Rate	**Up to 61.44 MS/s**	Frequency Accuracy	**±2.0 ppm**
ADC Resolution	**12 bits**	Radio Frequency Coverage	**70 MHz – 6 GHz**
DAC Sample Rate	**Up to 61.44 MS/s**	Instantaneous Bandwidth	**56 MHz**
DAC Resolution	**12 bits**		

DARK COMPASS

For more information or other inquiries, please contact us at:

info@darkcompass.co

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