

DESCRIPTION

Survey-Scanner: P25 + LTE + 5G

iBwave Mobile Survey is a simple and seamless way to survey wireless indoor and outdoor networks using just your Android device (LTE, 5G & Wi-Fi) or the seamless integration to the lightweight and affordable Epiq Solutions' PRiSM™ scanner. (LTE, 5G or P25)

With the choice of either using a SIM card or the Epiq PRiSM™ scanner, you have the flexibility to use the mobile app according to your survey needs and use cases. You can also leverage the GPS mode for seamless hands-free outdoor surveys with slow-moving vehicles such as golf carts and drones. You can also document your site as you go by taking pictures, videos, audio and notes saved to push pins on the floor plan, making it simple to reference them during the design phase.

Collect survey data using just your mobile device

Technologies: LTE, 5G, 4G, 3G, 2G, 802.11 a/b/g/n/ac/ax • Wi-Fi KPIs: RSSI, CCI, Throughput, and more. • Cellular KPIs: RSSI, RSRP, RSRQ, SINR, and more.

Survey cellular networks with the Epiq PRiSM scanner

- **Lightweight and low-visibility hand-held scanner that magnetically attaches to your phone or tablet to survey cellular networks.**
- **Technologies: LTE, 5G, P25**
- **KPIs: Band, Channel, RSSI, BER, SINR**
- **Seamless integration to iBwave Mobile Survey for a simplified end-to-end survey and design experience.**
- **Highly portable: weighs under 6 ounces (170 grams)**
- **Eliminated post-processing**
- **Powered from the host device: simple USB-C connects to your Android device and lap-tops for power - no need for batteries or chargers.**
- **Web-based Spectrum Analyzer: works with the device's browser.**
- **Works with unmodified devices: no device rooting necessary.**
- **SDR-Driven: easily calibrated and upgraded with new capability without changing hardware.**



FEATURE SET

iBWAVE INTEGRATION

- Create a new project from scratch or from a template
- Download and upload projects from iBwave Cloud or iBwave Unity and work offline
- Transfer projects directly to/from iBwave Design through USB
- Store up to 10 GB of projects on iBwave Cloud
- Share projects from iBwave Cloud by email to external partners

SITE SURVEY

- Display surrounding network signals (Network Scan)
- Survey indoor & outdoor networks with the GPS mode
- Internal data collection engine (Optional add-on module)
- Run interpolation of survey measurements (Optional add-on module)
- Capture site details, contact information & initial requirements
- Create, scale and geolocalize floor plans
- Add geolocated photo, text, video and audio annotations to floor plans
- Create geolocated pushpins with photo, text, video and audio annotations
- Draw and type text on photos
- Draw construction markup & cable routes on floor plans
- Integrate with 3rd party network test tools
- Share iBwave floor plans, transmitters & zones to apps on the same device
- Display back all received measurements on iBwave floor plans
- Save survey measurements in the project for access in iBwave Design

AS-BUILT DESIGN

- Submit design changes to iBwave Design for approval:
 - > Update all component location and height
 - > Update antenna azimuth, downtilt & mount orientation
 - > Update cable routes and add measured length

REPORTING

- Generate reports from free iBwave Viewer (PDF, PPT, DOC, XLS and more)
- > Annotations and floor plans
- > Survey measurements (plots)
- > Equipment list
- > Prediction maps

- Generate a report on the mobile device (PDF)

- > Project summary
- > Annotations
- > Survey maps

COLLECTION MODULE

- Internal data collection engine:
 - Wi-Fi:
 - > Technologies: 802.11 a/b/g/n/ac/ax
 - > Wi-Fi KPIs: RSSI, CCI+O, Throughput and Channel (view KPI table)
 - Cellular:
 - > Technologies: 2G, 3G, LTE and 5G
 - > Cellular KPIs: RSSI, RSRP, RSRQ, SINR, & more (view KPI table)
- External data collection:
 - > Epiq Solutions' PRiSM scanner
 - **Technology: LTE, 5G, P25**
 - > LTE KPIs: RSSI, RSRP, RSRQ, SINR, PCI and more
 - > 5G KPIs: RSSI, RSRP, RSRQ, SINR, PCI and more

INTERPOLATION MODULE

- Run interpolation of survey measurements on following KPIs:
 - > Cellular: RSSI, RSCP, RSRP, RSRQ, Ec/No and SINR
 - > Wi-Fi: RSSI and CCI+O

EPIQ SOLUTIONS' PRiSM SCANNER SPECS

- **FREQUENCY**
 - > Range: 70 MHz - 6 GHz
 - > Accuracy: 1 ppm
- **PHYSICAL**
 - > Size: 87 mm x 61 mm x 12 mm
 - > Weight: Under 6 ounces (170 grams/s)
- **POWER**
 - > Power Input: USB-C
 - > Power Consumption: 3W (Active)
- **POWER MEASUREMENTS**
 - > Accuracy: ± 2 dB @ 25°C

TECHNICAL REQUIREMENTS

SOFTWARE REQUIREMENTS

- Android 8 or higher
- Android 10 or higher (Collection Module)

RECOMMENDED COMPATIBLE DEVICES

- Smartphones:
 - > Samsung Galaxy S20 5G, S21, S22, S23
 - > Samsung Galaxy Note10, Note20 5G
 - > Samsung Galaxy XCover Pro
 - > Samsung Galaxy A51
 - > Google Pixel 6
- Tablets:
 - > Samsung Galaxy Tab S7 5G
 - > Galaxy Tab A 8.4 LTE
 - > Samsung Galaxy Tab S8

MINIMUM VERSION FOR COLLECTION TOOLS

- Accuver - XCAL-Harmony: 2.01.088
- Accuver - XCAL-Mobile: 4.13.268
- Infovista - TEMS Pocket: 14.3.1 (single device only)
- Enhancell - Echo One: 2.0.6
- Enhancell - Echo Plus: 2.0.9
- Falcon Smart - Falcon Kit: 1.10
- Keysight - Nemo Handy: 2.70
- Keysight - Nemo Walker Air: 1.60
- PCTEL - Seehawk Engage: 2.0.6
- PCTEL - Seehawk Engage+: 2.0.9
- PCTEL - SeeHawk Touch: 1.2
- Solutelia - WIND Pro: 4.1.0
- Rohde & Schwartz - QualiPoc: 15.0
- Rohde & Schwartz - QualiPoc Freerider: 16.2

Note: While iBwave Mobile Survey should work on most Android™ based phones & tablets, we cannot guarantee that they will be compatible with all of them. For integration with 3rd party collection tools, you should first contact your respective vendor to determine device requirements.

	KPI	VALID RANGE	EXAMPLE	COMMENTS
NETWORK KPIs	Operator	N/A	Rogers, Bell, Telus	
	MCC	001 to 999	302	3-digit Mobile Country Code
	MNC	00 to 999	720	2 or 3-digit Mobile Network Code
	Frequency	300 MHz to 100 GHz	1900 MHz or 2.6 GHz	
	Band Number	1 to 100	B2, B66	
	Band Name	N/A	PCS, AWS	
	KPI	VALID RANGE	EXAMPLE	COMMENTS
GSM/EDGE KPIs	LAC	0 to 65535	13000	Location Area Code
	CID	0 to 65535	5781	Cell Identity
	ARFCN	0 to 65535	129	Absolute RF Channel Number
	RSSI	-120 to -20	-80 dBm	Received Signal Strength Indication
	KPI	VALID RANGE	EXAMPLE	COMMENTS
HSPA/UMTS KPIs	LAC	0 to 65535	55100	Location Area Code
	RNC ID	0 to 4095	43	Radio Network Controller Identity
	Cell ID	0 to 65535	9942	Cell Identity
	PSC	0 to 511	158	Primary Scrambling Code
	DL_UARFCN	0 to 65535	412	UMTS Absolute RF Channel Number for DownLink
	UL_UARFCN	0 to 65535	12	UMTS Absolute RF Channel Number for UpLink
	RSSI	-120 to -20	-80 dBm	Received Signal Strength Indication
	RSCP	-120 to -24	-90 dBm	Reference Signal Code Power
Ec/No	-24 to 1	-10 dB	Energy per chip over the Noise spectral density (Android 11 only)	
	KPI	VALID RANGE	EXAMPLE	COMMENTS
LTE KPIs	TAC	0 to 65535	25100	Tracking Area Code
	eNodeB ID	0 to 1048575	50562	eNodeB Identity
	Cell ID	0 to 255	23	Cell Identity
	PCI	0 to 503	451	Physical Cell Identity
	DL_EARFCN	0 to 70645	1075	E-UTRA Absolute RF Channel Number for DownLink
	UL_EARFCN	18000 to 134280	19075	E-UTRA Absolute RF Channel Number for UpLink
	Channel BW	1.4 to 20	15 MHz	Channel width or bandwidth, has only 6 possible values (1.4, 3, 5, 10, 15, or 20 MHz)
	RSSI	-120 to -20	-80 dBm	Received Signal Strength Indication, range in Android is [-113, -51]
	RSRP	-140 to -40	-107 dBm	Reference Signal Received Power, range in Android is [-140, -43]
	RSRQ	-20 to -3	-12 dBm	Reference Signal Received Quality
	SINR	-20 to 50	25 dB	Signal-to-Interference-plus-Noise Ratio (typical values between -10 to 30)
	CQI	1 to 15	10	Channel Quality Indicator (not reported by all devices)
	KPI	VALID RANGE	EXAMPLE	COMMENTS
5G KPIs	Cell ID	0 to 68719476735	10	Cell Identity
	NR-ARFCN	0 to 3279165	422000	New Radio Absolute RF Channel Number for Downlink
	PCI	0 to 1007	300	Physical Cell Identity
	TAC	0 to 16777215	842	Tracking Area Code
	SS RSSI	-140 to -44 dBm	-90 dBm	Secondary Sync Block Received Signal Strength Indication
	SS RSRP	-140 to -44 dBm	-100 dBm	Secondary Sync Signal Block Reference Signal Received Power
	SS RSRQ	-43 to 20 dB	-3 dB	Secondary Sync Signal Block Reference Signal Received Quality
	SS SINR	-23 to 40 dB	10 dB	Secondary Sync Signal Block Signal-to-Interference-plus-Noise Ratio
	KPI	EXAMPLE	COMMENTS	
Wi-Fi KPIs	SSID	iBwave	Service Set Identifier	
	BSSID	d8:c7:c8:44:32:40	Basic Service Set Identifier	
	Channel Number	1, 36	Wi-Fi Channel	
	RSSI	-65 dBm	Received Signal Strength Indication	
	CCI	4	Co-Channel Interference	
	KPI	VALID RANGE	EXAMPLE	COMMENTS
P25 KPIs (with Epiq Solutions' PRISM Channel)	BER	0 to 100 %	4 %	Bit Error Rate
	RSSI	-120 to -20 dBm	-80 dBm	Received Signal Strength Indication
	SINR	-23 to 40 dB	12 dB	Signal-to-Interference-plus-Noise Ratio
	DAQ	1 to 5	4	Delivered Audio Quality Score