Wireless Interference Solutions

RF Command Center™ • RF-Vue™ • RF-intermodPRO™
RF-ResQ™ • RF-id SOLO™ • RF-id STATION™
CPAntenna™ • IEMRadiator™ • CPArray™
RF-ResQ™

Breakthrough Wireless Interference Technology Solves RF Congestion Issues!!!

Doubles the available channels, eliminates RF interference!!

Housed in a rugged single-rack-space unit, the RF-ResQ™ is the world’s first standalone wireless microphone filtering system employing multiple high-performance, high-Q bandpass filters. ResQ will clean up the received RF spectrum, allow for more adjacent channel spacing (potentially doubling available channel counts without sacrificing power), remove the issue of intermodulation effects, and improve the reception of weaker transmissions.

RF-ResQ’s onboard 8-channel antenna distribution amplifier with RF router allows its filters to adapt to various receiver and distribution configurations. This provides one filter/frequency per receiver channel, which ultimately means that the user’s receiver only sees its assigned transmitter frequency and nothing else — with no out-of-band RF interference to bog down or de-sensitize the receiver’s input. Alternatively, users can select “combined signal routing” to feed integrated receiver/distribution systems, as found in some newer digital mic and intercom systems.

RF-ResQ assigns a single, frequency-decorrelation, bandpass filtered feed for each transmitter’s frequency, and its eight amplifiers can maximize the individual RF signals up to 10 dB. This means that there’s no need for an amplified antenna.

DiverseQ™, the RF-ResQ’s new antenna diversity technology, pre-filters the antenna A/B signals in the IF stage for fast, accurate and quiet antenna switching. This improved, “best signal detection” function is performed within the RF-ResQ, so there’s no need for a two-antenna connection at the receiver input.

**RF-ResQ Specifications**
- Frequency band: 520 to 1400 MHz
- Channeling: 50 MHz, scalable by software
- Filter bandwidth: 150 kHz, adjustable by software
- New filter design uses antenna input to channel output, -70 dB max, valid for power levels of -70 to -10 dBm
- Gain from antenna input to Channel Out = 0 dB or -10 dB, valid for power levels of -70 to -10 dBm
- Signal index from antenna input to Channel Out = -1.5
- Input power range: -70 dBm min, -30 dBm max (note: above -3 dBm NI will exceed 10 dB)
- RF input/output ports: 2 antenna min, 8 antenna max, 50 channel max, built-in diversity
- Channels 1-8, router output assigns 1 to 4, 5 to 12, 1 to 2, 2 to 4, 4 to 8, 8 to 16
- Interfacing: USB and LAN, USB2.0 and XLR, controlling software included

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**Kaltman Creations Producing Innovative Wireless Technology**

**The Invisible Waves™ Brand**

Like the engineer behind the audio console whose ears, craft and knowledge can make a good band sound great, Kaltman Creations LLC uses its experience in live sound, RF, software and electronics design to create essential tools for wireless analysis and management. Though the spotlight is on the stage, not the mixer, the success of the show still rests in those skilled hands.

From its beginnings back in 2006, Kaltman Creations saw the necessity of wireless solutions for touring audio and AV installation, and set out to provide equipment that is effective while also being feature-rich and cost-efficient. Currently, Kaltman Creations sells laboratory-grade RF test & measurement equipment to major public safety, governmental and industrial entities throughout the world, yet their passion is serving the pro audio industry.

Wireless is a fact of present day life. At any significant concert, sports broadcast, or theatrical event, dozens of wireless microphones, in-ear monitors and intercom belt-packs are deployed in critical positions — and they’re competing with DTV, smart phones and myriad other wireless devices for the available spectrum. With this finite resource already overcrowded, having powerful, intuitive tools to visualize and maximize the wireless landscape can make the difference between a flawless performance and disaster.

Kaltman Creation’s Invisible Waves™ brand provides a total solution for wireless coordination, interference avoidance and troubleshooting. These products have been field-proven on numerous major tours including Peter Gabriel, U2, Prince, Trans-Siberian Orchestra, Neil Diamond and Cirque de Soleil, networks such as CBS, NBC, FOX, major sports events, large houses of worship and Fortune 500 corporate boardrooms and auditoriums. Industry awards and nominations have met each new Invisible Waves product introduction, including LD’s Best Debuting Product and Live Sound’s #1 Pick, along with multiple Parnelli and TEC nominations.

Kaltman Creations continues building upon its understanding that the success of the show still rests in those skilled hands, giving audio engineers and installers the tools to achieve excellent, predictable results from their wireless microphones and other devices.

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**The Leader in RF Wireless Interference Solutions**
confirm **frequencies** and **power output** all in one convenient storage case!

- Industrial grade RF Shielding to reduce transmission-to-transmission intermodulation
- Convert group & channel designations to frequency
- Extra storage in carrying case
- Eraseable write-on strip to help with assignments
- Organization & management tool
- Lighted LCD displays for low-light readings

**Specifications**

- Dimensions: 27” x 16” x 7”
- Power: 120 VAC – 220 VAC
- Frequency range: 50 MHz – 2.5 GHz
- Carrying case storage: up to 12 handheld mic’s, + 4 belt packs + other accessories
- Results may be unreliable with spread-spectrum or frequency hopping transmissions
RF analysis at your fingertips

The newest Invisible Waves product offers tablet portability and affordability. Perfect for interference elimination, site and field analysis, frequency coordination, touring professionals and small venue RF management.

Designated for wireless users with applications for concerts, theatre, places of worship and corporate events.

- T10 Model integrated into Touch Tablet with Windows 8
- Touch to Listen™ to listen to all RF signals
- RF Congestion Scale™ to gauge the severity of local RF...and many more features

Software Highlights:
- Touch Screen controls
- Zoom in and out through the RF spectrum with touch screen gestures
- On screen notebook for deployment notes
- Custom Report...Name and date and a real reading your T10
- True Readouts
- Touch to listen™ to hear true RF readings
- Touch to listen™ from your external transmitter RF
- Display Actual Power, Average True Real-time readings
- RF Congestion Scale
- Moderate Sweep Speed to increase sweep speed
- True and False readings
- Software includes PTP, Secure, CRT
- Software includes built-in baud’s
- Interactive, on-screen Help Assistant
- Integration with the RF universal RFID software

Available Options:
- LCD screen, from external string case
- T10 Stand holder
- Baud cases to snap-on to easy RF-infrared PDA software

RF-Vue Specifications:
- T10 470MHz to 700MHz, T12 450MHz to 3.5GHz, RT 470MHz to 3.5GHz, MCT 800MHz to 1.5GHz, T17 3GHz to 6GHz (All indicate Table Options)
- Resolution Bandwidth Selections: 250kHz up to 1MHz
- Dynamic range: 60dB to 100dB
- Error input level: 100mV (100mV or battery)
- Mic Direct signal (weak) - 100mV (better than)
- Accuracy: ± 2dB (Typical)
- Frequency Stability: ±5ppm
- RF Input: 50ohms SMA (-) connector

ID your wireless devices

for use at concerts, theatre and places of worship

Approach handhelds and concealed belt pack transmitters to measure frequencies!

- Confirm frequencies
- Confirm signal presence
- Portable, pocket sized
- Rechargeable battery
- Convert group and channel designations to frequency
- Organization and management tool
- Lighted LCD displays for low-light readings

For wireless, microphone, belt pack, assisted listening device, intercom, cell phone and commercial RFID tag uses.

Specifications:
- Dimensions: 3.35” x 1.8” x .85”
- Power: 5 VDC, 1A - built-in rechargeable NiMH battery (includes adapter/charger)
- Frequency range: 50 MHz - 2.5 GHz*
- LCD: Frequency counter and signal level display
- Results may be unreliable with spread-spectrum or frequency hopping transmissions
Circular Polarity & Horn Radiators provide ‘Rock-Solid’ IEM Reception

The IEMRadiator™ antenna is not like your traditional paddle or helical antenna commonly used with pro-audio In-Ear-Monitoring systems (IEM). The antenna incorporates a unique combination of advanced Circular Polarization technology with a Horn Style Radiator for directional, high-gain enhanced radiating transmission.

$390 per antenna

for professional wireless audio systems

Traditional paddle and rod antennas used for wireless In-Ear-Monitor (IEM) are either horizontally or vertically polarized (usually vertically). When an In-Ear-Monitor receiver antenna changes its orientation in reference to the transmitting antenna — as wireless IEM belt pack receivers always do — the phase relationship changes.

The new IEMRadiator™ antenna uses a unique combination of advanced Circular Polarization technology with a Horn Style Radiator which produces a powerful ‘drop-out free’ transmitter and receiver combination that is never out of phase. This technology guarantees as reliable and as efficient of an RF signal link as possible. The antenna design is unique in many ways, the most obvious being its rugged flat panel design and ‘thumb-screw’ removable horn radiator. Unlike paddle and helical antennas, the IEMRadiator™ features forward enhancing horn radiators that increase gain and directivity which create a more robust and reliable radiated signal.

New drop-out free technology

Old technology subject to drop-outs

Frequency Range: 470MHz - 890MHz
Gain: 10.5 dBi
3 dB Beamwidth – Azimuth: 55°
Weight: 2.5 lbs.

RF-intermodPRO™ calculates and predicts intermodulation interference

The program graphically displays on screen the predicted locations of the intermod components and assists in the frequency coordination process.

It is designed for professional audio wireless microphone users, frequency coordinators, AV installers of wireless devices, and broadcasters.

- One-click mic assignments
- Create custom wireless inventories and groups
- Use Click & Drag and auto assign to place transmitters on the spectrum display
- Interfaces with IWx RF Command Center
- Editable local TV station, NTSC, DTV and other transmitter frequency locations
- Editable and printable wireless mics and devices inventory list
- Custom marker point and color coding

Features

The opening screen for RF-intermodPRO™ displays a box at the bottom left to select zip-code based localized interference frequencies such as TV stations, NTSC channels, DTV channels and other transmitters. There’s a bottom right box with a listing of the most popular wireless mics and devices with the ability to create custom inventories and groups. Also included is a high contrast legend to guide the user.

You can click and drag, or group-select, all of the wireless mics and devices you will be using during your production from a pre-set list (editable) of commonly used equipment or your custom inventories, then add them to the screen.

With the click of the “Assign” button wireless devices are automatically positioned to the most optimum frequencies. The wireless devices, TV stations and other transmitters are all keyed with related icons for visual reference.

The “one click” and “click and drag” functions make the RF-intermodPRO incredibly fast. Once you have your screen set you will see color bars marking harmonics to avoid in setting your wireless devices, and warning icons showing frequencies with interference.

A further feature is to have the RF-intermodPRO interface with our existing IWx RF Command Center (creating the complete RF suite) to analyze your frequency interference and simultaneously find the best intermod positioning for your wireless mics and devices.
circular polarization improves your reception

The new IWxCPA antenna uses advanced circular polarization technology which produces a ‘drop-out free’ transmitter and receiver combination that is never out of phase. This technology, along with the antenna’s directional attributes, helps to guarantee as reliable of an RF signal link as possible.

for professional wireless microphones

The IWxCPA antenna is not like your traditional paddle or rod antenna commonly used with wireless microphone receivers and pro-audio antenna distribution systems. The antenna incorporates directional, Circular Polarization (CP) technology for both receiving and transmitting pro-audio wireless applications. We guarantee that this antenna will reduce interference, reduce drop outs, help eliminate ‘swishing’ noise artifacts, improve RF signal to to noise, and enhance reception of signals propagated through and around objects.

Micro-Technology Offers Better Reception

The CPA™ micro-technology offers better reception than its larger paddle and beam style antenna counterparts. And because of the circular polarized pick-up pattern and multi-directional focusing ability, the CPA™ guarantees reduced interference, reduced drop outs and enhanced reception of signals propagated through and around objects.

Combiner Pair: $599
Diversity Pair: $649

two can be better than one

The standard CPA™ package consists of 2 antennas mounted onto a Tee-bar with a low-loss antenna combiner. This two antenna arrangement offers the unique ability to selectively cover in opposing, off-set, and multi-elevation directions and offers the unique ability to focus reception in selected areas for maximum efficiency while avoiding extraneous and interfering RF.

Offered in a Combiner or Diversity pair, and measuring only 6.7” x 6.2” x 1.6” (per antenna) and weighing in at only 1.2lbs., these extremely low-profile, micro antennas are perfect for intimate venues and facilities such as auditoriums, theaters, boardrooms, lecture halls and worship centers.

Specifications
Sold in a matched pair for Coupled or Diversity use
Frequency Range: 470MHz – 960MHz
Gain: 6.5 dBi
Maximum VSWR: 1:4:1
3 dB Beamwidth – Azimuth: 65°
Front to Back Ratio: 20 dB
Polarization: Circular right-hand or circular left-hand
Maximum Input Power: 3 Watts
Input Impedance: 50 Ohms
Axial Ratio: 1 dB
Weight: 1.2 lbs. each antenna
Mechanical Size: 6.7” x 6.2” x 1.6” each antenna
Color: Theatre Black
Antenna Connection: Coax Pigtail BNC(F)
Radome: High Strength PVC
Mount Style: Mic Stand Swivel/Threaded Stud
Low Loss Combiner – Coupled/Combined version only
Temperature Operational: -25°C to 70°C
Lightning Protection: DCV Grounded

The CPA™ can be wallmounted with an optional bracket.
circular polarization improves your reception

The new IWxCPA antenna uses advanced circular polarization technology which produces a ‘drop-out free’ transmitter and receiver combination that is never out of phase. This technology, along with the antenna’s directional attributes, helps to guarantee as reliable of an RF signal link as possible.

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Micro-Technology Offers Better Reception

The CPAarray™ micro-technology offers better reception than its larger paddle and beam style antenna counterparts. And because of the circular polarized pick-up pattern and multi-directional focusing ability, the CPAarray™ guarantees reduced interference, reduced drop outs and enhanced reception of signals propagated through and around objects.

Combiner Pair: $599
Diversity Pair: $549

two can be better than one

The standard CPAarray™ package consists of 2 antennas mounted onto a T-bar with a low-loss antenna combiner. This two antenna arrangement offers the unique ability to selectively cover in opposing, off-set, and multi-elevation directions and offers the unique ability to focus reception in selected areas for maximum efficiency while avoiding extraneous and interfering RF.

Offered in a Combiner or Diversity pair, and measuring only 6.7” x 6.2” x 1.6” (per antenna) and weighing in at only 1.2lbs., these extremely low-profile, micro antennas are perfect for intimate venues and facilities such as auditoriums, theaters, boardrooms, lecture halls and worship centers.

Specifications

Sold in a matched pair for Coupled or Diversity use
Frequency Range: 470MHz – 960MHz
Gain: 6.5 d BiG
Maximum VSWR: 1.4:1
3 dB Beamwidth – Azimuth: 65°
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Weight: 1 2 lbs, each antenna
Mechanical Size: 6.7” x 6.2” x 1.6” each antenna
Color: Theatre Black
Antenna Connection: Coax Pigtails BNC(F)
Radome: High Strength PVC
Mount Style: Mic Stand Swivel/Threaded Stud
Low Loss Combiner – Coupled/Combined version only
Temperature Operational: -25°C to 70°C
Lightning Protection: DCV Grounded

The CPAarray can be wallmounted with an optional bracket.
Circular Polarity & Horn Radiators
provide ‘Rock-Solid’ IEM Reception

The IEMRadiator™ antenna is not like your traditional paddle or helical antenna commonly used with pro-audio In-Ear-Monitoring systems (IEM). The antenna incorporates a unique combination of advanced Circular Polarization technology with a Horn Style Radiator for directional, high-gain enhanced radiating transmission.

$390 per antenna

for professional wireless audio systems

The new IEMRadiator™ antenna uses a unique combination of advanced Circular Polarization technology with a Horn Style Radiator which produces a powerful ‘drop-out free’ transmitter and receiver combination that is never out of phase. This technology guarantees as reliable and efficient as possible of an RF signal link as possible. The antenna design is unique in many ways, the most obvious being its rugged flat panel design and ‘thumb-screw’ removable horn radiator. Unlike paddle and helical antennas, the IEMRadiator™ features forward enhancing horn radiators that increase gain and directivity which create a more robust and reliable radiated signal.

New drop-out free technology

Old technology subject to drop-outs

Frequency Range: 470MHz – 890MHz
Gain: 10.5 dBi
3 dB Beamwidth – Azimuth: 55°
Weight: 2.5 lbs.

RF-intermodPRO™

calculates and predicts intermodulation interference

The program graphically displays on screen the predicted locations of the intermod components and assists in the frequency coordination process.

It is designed for professional audio wireless microphone users, frequency coordinators, AV installers of wireless devices, and broadcasters.

- One-click mic assignments
- Create custom wireless inventories and groups
- Use Click & Drag and auto assign to place transmitters on the spectrum display
- Interfaces with IWx RF Command Center

Features

The opening screen for RF-intermodPRO™ displays a box at the bottom left to select zip-code based localized interference frequencies such as TV stations, NTSC channels, DTV channels and other transmitters. There’s a bottom right box with a listing of all the popular wireless mics and devices with the ability to create custom inventories and groups. Also included is a high contrast legend to guide the user.

You can click and drag, or group-select, all of the wireless mics and devices you are using during your production from a pre-set list (editable) of commonly used equipment or your custom inventories, then add them to the screen.

With the click of the “Assign” button wireless devices are automatically positioned to the most optimum frequencies. The wireless devices, TV stations and other transmitters are all keyed with related icons for visual reference.

The “one-click” and “click and drag” functions make the RF-intermodPRO incredibly fast. Once you have your screen set you will see color bars marking harmonics to avoid in setting your wireless devices, and warning icons showing frequencies with interference.

A further feature is to have the RF-intermodPRO interface with our existing IWx RF Command Center (creating the complete RF suite) to analyze your frequency interference and simultaneously find the best intermod positioning for your wireless mics and devices.
RF analysis at your fingertips

The newest Invisible Waves product offers tablet portability and affordability. Perfect for interference elimination, site and field analysis, frequency coordination, touring professionals and small venue RF management.

* Designed for wireless users with applications for concerts, theatre, places of worship and corporate events.
  * T10 Model integrated into Touch Tablet with Windows 8
  * Touch to Listen™ to listen to all RF signals
  * RF Congestion Scale™ to gauge the severity of local RF...and many more features

Software Highlights
- Touch Screen control
- Zoom in/out and sweeping through RF spectrum with touch screen gesture
- On screen indication for deployment entry
- Gain Reference—Never out at old reading your T1
- Push button Confirm
- Touch to Create Sweep Box for the Touch to Listen™ T10 function
- Touch to Listen™ from your antenna transmitter RF
- Display Source, Frequency, Average and Max Hertz
- RF Congestion Scale
- Absolute Sweep function to increase sweep speed
- Scan & recall feature settings
- Auto-prediction in PPM, STR
- Unlimited levels of input
- Diagnostic on screen Help Assistant
- Integration with the RF advanced PES software

Available Options:
- Food menu, from themed gaming case
- Wireless receiver back stand—id clip to grip and table
- RF未经RF800 software

RF-Vue Specifications
- T10: 470MHz to 700MHz, T12: 400MHz to 3.5GHz, NT 470MHz to 700MHz
- WiFi 2.4GHz to 2.45GHz ("T" indicates Tablet version)
- Resolution Bandwidth Selection: 125 kHz from 300kHz to 3MHz
- Dynamic range: 126dB
- Water proof level: IP50 (IP68 or better) or battery
- Mic Direct signal (minimum) -100dBm (better than)
- Accuracy: ± 3 dB (Typical)
- Frequency accuracy: ± 2 ppm
- RF input: 50ohm, SMA (T) connector
- 8.5 inch touch/visual antenna - Omni directional (RF800MHz to 2.4GHz)
- Audio Downconversion: PPM audio output six (6) line monitor audio output (line level output)
- Power: Internal rechargeable LiPo battery or included universal 120VAC/12VDC AC adapter/charger
- Battery life: Approximately 6 hours
- Interface: USB 2.0
- Required operating systems: Windows 7 or 8

RF-id SOLO™

ID your wireless devices for use at concerts, theatre and places of worship

Approach handhelds and concealed belt pack transmitters to measure frequencies!

* Dimensions: 3.35” x 1.8” x .85”
* Power: 5VDC, 1A - built-in rechargeable NiMH battery (includes adapter/charger)
* Frequency range: 50 MHz – 2.5 GHz*
* LCD: Frequency counter and signal level display
* Specifications subject to change without notice

For wireless, microphone, belt pack, assisted listening device, intercom, cell phone and commercial RFID tag uses.
RF-id STATION™

confirm frequencies and power output all in one convenient storage case!

- Industrial grade RF Shielding to reduce transmission-to-transmission intermodulation
- Convert group & channel designations to frequency
- Extra storage in carrying case
- Eraseable write-on strip to help with assignments
- Organization & management tool
- Lighted LCD displays for low-light readings

Specifications
- Dimensions: 27” x 16” x 7”
- Power: 120 VAC – 220 VAC
- Frequency range: 50 MHz – 2.5 GHz
- Carrying case storage: up to 12 handheld mic’s, + 4 belt packs + other accessories
- Results may be unreliable with spread-spectrum or frequency hopping transmissions

RF Command Center™

the standard in analyzing RF for pro audio wireless

The IWxLIVE and IWxAV is more than a RF Spectrum Analyzer; it’s your mobile RF Command Center. This ground-breaking RF tool, encompasses a whole arsenal of “World First” RF analysis, controlling and monitoring features. Applications include live events such as concerts, theatre, worship and corporate events, as well as AV integration and event frequency coordination.

Screen Highlights:
- 12 different center and alarm panels, each one durable or screen floating
- Visual and audible alarms for RF levels and rogue interference
- Custom Marker Point setting and color coding
- Click & Drag the RF Trends (transmissions) right onto the Master Status Display for continuous RF trance monitoring
- Tunable Indicator: Swings Bar for the Click to Listen™ (CTL) function, or brings the individual Speaker Icon to the Master Status Display
- Zoom in and out of the RF spectrum with the Click & Drag function
- On screen activation of the cursorHoly Assistant
- Unlimited levels of on-id’s

Specifications
- RF Command Center™ General Specifications
  - ENLIVE: 100kHz – 1.5GHz
  - ENLIVE®: 500kHz – 1.5GHz
  - Envelope range (typical): 130dBm to 60dBm
  - Filter Bandwidth: 1kHz – 50kHz
  - IF/IFM Frequency Stability Accuracy: 10ppm
  - PC Interface: Serial or USB Adapter 2.0 Audio Output: Line-Level, Mono stereo plug
  - Antenna Interfaces: DB S80 SMA

- UFO Alert™ (“Undetected Frequency Alert”) Rashes to indicate that an un-detected transmission has entered your RF spectrum. UFO warnings appear in several places including the Spectral Trace View along with an audible alarm sound.
RF-ResQ™

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**RF-ResQ Specifications**

- Frequency band: 20MHz to 6GHz
- Channel spacing: 20kHz to 20GHz
- Filter bandwidth: 150kHz, adjustable by software
- Noise figure from antenna input to Channel Out = -70dBm, valid for power levels of -70 to -10dBm
- Gain from antenna input to Channel Out = 0dB or -10dB, valid for power levels of -70 to -10dBm
- Output power range: -70 dBm min. to +20 dBm max (note: above -35 dBm RF will exceed +10dB)
- RF input/output ports: 2 antenna min. 8 antenna max
- Chassis: 19" rackmount, 1U high
- Chassis: 1 or 2, router output assignable to 1, 2, 3, 2 to 4, 4 to 8, bypass
- Interface: USB and LAN, USB2.0 and E40, controlling software included

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