



AXIENT®

# Giant steps.

The innovation imperative.

All too often, the product development process advances in increments. Narrow needs drive a focused innovation charter. Resulting products, while new to a portfolio, are rarely new to the world.

But every so often the issues, challenges and technical advances that drive real innovation converge in remarkable and unintended ways—and the stakes escalate. This is the AXIENT® story.

Introducing the AXIENT® Wireless Management Network from Shure. Ultimate control for the world's most extreme RF challenges. From the people who define Legendary Performance.

Axient features a suite of unprecedented technologies that underpin a range of new wireless audio capabilities. Each compelling on its own, they collectively represent the Shure response to a convergence of regulatory, market and technological forces.

**WIRELESS PERFORMANCE:**

## Magnified.

Axient is the response to changes made by global spectrum allocation policy makers that compelled wireless system providers to re-frame their platform innovation strategies around spectrum limitations.

**WIRELESS EXPERIENCE:**

## Simplified.

Axient is the reply to consensus demands of top-tier wireless audio system integrators/engineers for more comprehensive ways to control and manage increasingly unruly RF situations.

**WIRELESS INNOVATION:**

## Amplified.

Axient is the result of proactive Shure awareness that innovation on this scale requires the holistic alignment of inter-related audio, wireless and power management initiatives.

# Spectrum Management.

AXIENT® components are designed to intelligently monitor RF spectrum information and share it between networked devices in real time.

Axient spectrum management tools make clearing the air effortless. Providing detailed RF spectrum scans in rich visual displays, along with compatible frequency coordination for even the highest channel counts, Axient simplifies complex RF environments.

The Axient Spectrum Manager is the RF spectrum analysis and allocation hub of the Axient system. It continuously scans the entire usable UHF spectrum, performs compatible frequency coordination, and monitors, ranks and deploys backup frequencies on demand.

Together with Shure Wireless Workbench® 6 software, Axient spectrum management tools open up a rich graphical interface for viewing the RF world and choosing the optimal frequencies for all wireless channels on a production.

*Designed to continuously monitor, evaluate, prioritize, queue and assign UHF frequencies for even the highest channel counts, the **Axient Spectrum Manager** defines a new class of RF management tool.*



**Key component:**  
· AXT600 Axient Spectrum Manager

**Complementary components:**  
· AXT400 Axient Dual Channel Receiver  
· Shure Wireless Workbench 6

# Wireless Workbench® 6.

Shure Wireless Workbench 6 event planning and control software was developed concurrently with the AXIENT® platform to leverage its features and capabilities.

Shure Wireless Workbench 6 is the most comprehensive wireless system control software available. It tracks every facet of a wireless performance over the network, making everything from pre-show planning to live performance command simpler and more transparent.

Delivering the ability to coordinate, monitor and control the most complex wireless systems, all from a laptop computer, Wireless Workbench 6 unleashes the full power of Axient.



*Shure Wireless Workbench 6 features a re-imagined graphic user interface, with enhancements tailored to support Axient advances in RF spectrum plotting, comprehensive frequency coordination and live performance monitoring.*



**Key component:**  
· Shure Wireless Workbench 6  
MAC OS X / WINDOWS

**Complementary components:**  
· All Shure networked hardware

# Interference Detection & Avoidance.

AXIENT® Dual Channel Receivers provide alerts when interference strikes and can move to a clear, compatible frequency in milliseconds.

Axient receivers feature sensitive interference detection circuitry that can discern minute decays in RF signal quality and alert users when a signal is being compromised.

Engineers can respond to an alert by manually selecting a backup frequency or, when used in conjunction with the Axient Spectrum Manager, backup frequency assignments can be made automatically, in a fraction of a second.



*Ultra-low profile **Axient Bodypack Transmitters** and Axient handheld transmitters are equipped to execute remote, real-time frequency changes, via ShowLink® Remote Control.*



**Key components:**

- AXT400 Axient Dual Channel Receiver
- AXT100 Axient Bodypack Transmitter
- AXT200 Axient Handheld Transmitter

**Complementary components:**

- AXT600 Axient Spectrum Manager
- Shure Wireless Workbench® 6

# Frequency Diversity.

By maintaining two separate wireless channels and managing instantaneous transitions between them, AXIENT® Frequency Diversity re-defines “failsafe.”

When operated in Frequency Diversity mode, Axient Dual Channel Receivers utilize two identical signals sent from a Frequency Diversity transmitter. All the while, the receiver continuously monitors the quality of each of the two signals to provide optimized audio on a single channel.

If the receiver detects RF interference in the active signal, the audio from the companion frequency is automatically assigned. Since both channels are transmitting continuously, there is zero interruption.



*Axient Handheld Frequency Diversity Transmitters support simultaneous transmission on two independent frequencies to ensure seamless audio for mission-critical channels.*



---

**Key components:**

- AXT400 Axient Dual Channel Receiver
- AXT200 Axient Handheld Frequency Diversity Transmitter
- AXT100 Axient Bodypack Transmitters (2x)

# Transmitter Remote Control.

The AXIENT® Showlink® Network establishes a new-to-the-world wireless capability: comprehensive management of in-use transmitter settings.

ShowLink Remote Control enables real-time remote adjustments of all transmitter parameters using a wireless network connection between linked Axient transmitters and receivers. Whether performers are on stage in the middle of a show, or off stage waiting for their cue, ShowLink lets engineers make crucial changes to their transmitter settings—without ever leaving the control booth.

Remote frequency assignments, gain adjustments, RF mute enabling, RF output power changes and more are all possible over the ShowLink network. Simply add a ShowLink Access Point to any Axient network and instantaneous wireless control of up to 16 transmitters is realized over a wide coverage area. Additional ShowLink Access Points can be used to extend the coverage area and increase the number of supported channels.

*Axient ShowLink Access Point establishes a two-way wireless control network for up to 16 bodypack or handheld transmitters within a reception footprint similar to Axient microphone systems.*



**Key components:**

- AXT610 Axient ShowLink® Access Point

**Complementary components:**

- AXT100/200 Axient Bodypack and Handheld Transmitters
- AXT400 Axient Dual Channel Receiver
- AXT644 ShowLink® Access Point Directional Antenna
- Shure Wireless Workbench® 6



# Advanced Power Management.

The AXIENT® rechargeable power system sets new standards for monitoring and management of rechargeable batteries and chargers.

All Axient transmitters utilize Shure-engineered, high-performance rechargeable batteries. The networkable Rack Mounted Charging Station precisely tracks and reports battery states, including charge level, time-to-empty and time-to-full-charge, battery health, charge history and temperature.

Axient battery states can be monitored at the charger or reviewed and managed remotely via Shure Wireless Workbench® 6. When used with ShowLink® Remote Control, the battery conditions of in-use transmitters can be monitored and even adjusted remotely to conserve power.

**Axient Rechargeable Batteries** deliver reliable, rechargeable power with up to 10 hours of run time.



---

#### Key components:

- AXT910 + AXT920 Axient Rechargeable Batteries
- AXT901 + AXT902 Axient Charging Modules
- AXT900 Axient Rack Mount Charging Station
- AXT903 + AXT904 Axient Portable Charging Stations

# The AXIENT<sup>®</sup> system of products.

## SHURE SOFTWARE SOLUTIONS

- Wireless Workbench<sup>®</sup> 6

## REMOTE CONTROL

- ShowLink<sup>®</sup> Remote Control Access Point

## CONNECTIVITY

- Ethernet Switch
- Antenna Distribution System

## SPECTRUM MANAGEMENT

- Spectrum Manager

## MICROPHONE SYSTEMS

- Transmitters
- Receiver
- Batteries + Chargers

# AXIENT®



### AXIENT® BODYPACK TRANSMITTER

## AXT100

Combining the most advanced features and precision performance available, the AXT100 Axient Bodypack Transmitter is a giant leap forward in wireless transmission. The AXT100 delivers ultra-linear RF performance for more channels on air and superb audio quality. Advanced power management provides extended, rechargeable battery life and highly accurate status metering. ShowLink® Remote Control enables comprehensive real-time remote control of all transmitter parameters, including real-time frequency adjustments.



### AXIENT® HANDHELD FREQUENCY DIVERSITY TRANSMITTER

## AXT200

The AXT200 Axient Handheld Frequency Diversity Transmitter is a rechargeable, remotely controllable handheld transmitter with Frequency Diversity for seamless, uninterrupted audio in even the most crowded RF environments. In addition to Frequency Diversity, the AXT200 delivers superb audio quality and ultra-linear RF performance for more channels on air. Advanced power management supports extended battery life and highly accurate status metering. ShowLink® Remote Control enables comprehensive real-time remote control of all transmitter parameters, including remote frequency adjustments.



### AXIENT® DUAL CHANNEL RECEIVER

## AXT400

Featuring the most advanced analog and digital audio technology in its category, the AXT400 Dual Channel Receiver delivers unrivaled RF and audio performance. Its suite of groundbreaking functionalities optimize setup efficiencies and live performance control and reliability. Innovative new features include ShowLink®

Remote Control for real-time wireless transmitter adjustments, Frequency Diversity for seamless dual-frequency switching, and Interference Detection & Avoidance. With up to 228 MHz of wideband tuning, the AXT400 provides the highest assurance of flawless performance—even in congested RF environments.



### AXIENT® SPECTRUM MANAGER

## AXT600

Defining a new class of RF management tools, the AXT600 Axient Spectrum Manager delivers wide-band UHF spectrum scanning, spectrum analysis and compatible frequency coordination—all in a single rack unit. By scanning and displaying the RF environment, calculating compatible frequencies and deploying them to Axient

receivers easily and efficiently, the Axient Spectrum Manager offers a sophisticated interface and precise information for allocating the best available frequencies to any number of wireless channels.

### AXIENT® SHOWLINK® ACCESS POINT

## AXT610

ShowLink® Remote Control enables comprehensive, instantaneous control of transmitters, as well as the unprecedented ability to make remote, real-time adjustments to all transmitter settings. The AXT610 Axient ShowLink® Access Point



establishes a wireless network connection between linked Axient transmitters and receivers, enabling real-time networked control over a wide coverage area, equivalent to the range of Axient transmitters.



**AXIENT® ETHERNET SWITCH**  
**AXT620**

Specifically tailored for Axient systems, the AXT620 Axient Ethernet Switch is a rugged, rack-mountable 9-port switch that makes the networking of Axient wireless systems more efficient and speeds network configuration setup. Equipped with

Power over Ethernet for enabled devices, the AXT620 also features a DHCP server to automatically assign IP addresses to components.



**AXIENT® ANTENNA DISTRIBUTION SYSTEM**  
**AXT630**

The AXT630 Axient Antenna Distribution System delivers ultra-linear amplification and precision filtering for optimal performance in even the most difficult RF environments. The AXT630 features selectable 60 MHz input filters that match the available frequency bands of Axient transmitters, providing extra protection from strong out-of-band signals

and a lower overall RF noise floor. Four BNC antenna output pairs distribute a filtered signal to receivers, and an unfiltered RF cascade port is included to connect wideband devices such as the Axient Spectrum Manager. Networkable via Ethernet connection, the AXT630 enables WWB6 control of filtering ranges, antenna power and attenuation.



**AXIENT® RACK MOUNT CHARGING STATION**  
**AXT900**

The AXT900 Axient Rack Mount Charging Station provides a touring-ready battery charging and storage solution with networked visibility of all battery status parameters. Configurable for up to 8 bodypack or handheld batteries, the AXT900 delivers detailed

status reports for each battery, including remaining battery power, time to full charge, capacity and battery health. Status reports are displayed on the front panel, or in WWB6 for enhanced visibility.



**AXT901**  
**AXIENT® BODYPACK CHARGING MODULE**



**AXT902**  
**AXIENT® HANDHELD CHARGING MODULE**



**AXT903**  
**AXIENT® PORTABLE BODYPACK CHARGING STATION**



**AXT904**  
**AXIENT® PORTABLE HANDHELD CHARGING STATION**



**AXT910**  
**AXIENT® BODYPACK RECHARGEABLE BATTERY**



**AXT920**  
**AXIENT® HANDHELD RECHARGEABLE BATTERY**

Axient Bodypack and Handheld Rechargeable Batteries are advanced lithium-ion, high-efficiency, rechargeable batteries for Axient transmitters. They provide up to 10 hours of battery life for extended performance, zero memory effect and real-time

metering of remaining charge and other battery status parameters. They integrate seamlessly into transmitters and offer a sustainable, powerful and reliable alternative to disposable batteries.

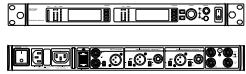
**SHURE SOFTWARE SOLUTIONS**  
**WIRELESS WORKBENCH® 6**

Wireless Workbench 6 (WWB6) is comprehensive event management and control software from Shure that optimizes the power of Axient. WWB6 features an enhanced graphic user interface, tailored to support the breakthroughs Axient provides in advanced RF spectrum plotting, comprehensive frequency coordination and live

performance monitoring. Delivering the ability to coordinate, monitor and control the most complex wireless systems—all from a laptop computer, Wireless Workbench 6 truly unleashes the Axient system's full potential.

# AXIENT™ Wireless Management Network Specifications (Note: All specifications are subject to change.)

## AXT400 Dual Channel Receiver



RF Carrier Frequency Range	470–952 MHz (Note: varies by region)
Working Range	Under typical conditions: 150 m (500 ft) Line of Sight, outdoors for a single system: 500 m (1600 ft) Note: Actual range depends on RF signal absorption, reflection and interference.
Audio Frequency Response	40 Hz–18 kHz (+1, -3 dB) Note: Dependent on microphone type
RF Tuning Step Size	25 kHz
Modulation 45 kHz max. deviation	FM, Audio Reference Companding with pre- and de-emphasis
Dynamic Range	XLR Output: >118 dB, A-weighted / AES3 Output: >130 dB, A-weighted
Image Rejection	>120 dB, typical
RF Sensitivity	-110 dBm for 12 dB SINAD, typical
Spurious Rejection	>110 dB, typical
Ultimate Quieting	>110 dB, A-Weighted
Squelch Quieting	>115 dB, A-Weighted
Latency	<1 ms
Total Harmonic Distortion 45 kHz max. deviation	<0.3%, A-weighted, typical
System Audio Polarity	Positive pressure on microphone diaphragm (or positive voltage applied to tip of WA302 phone plug) produces positive voltage on pin 2 (with respect to pin 3 of low-impedance output) and the tip of the high impedance 1/4-inch output.
Gain Adjustment Range	0 to -30 dB (in 1 dB steps), plus Mute setting
Dimensions	44 mm x 483 mm x 366 mm (1.7 in. x 19.0 in. x 14.4 in.), H x W x D
Weight	5.5 kg (12.0 lbs)
Housing	Steel; Extruded aluminum
Power Requirements	100 to 240 V AC, 50-60 Hz
Current Drain	1.1 A RMS (referenced at 120 V AC)
Operating Temperature Range	-18°C (0°F) to 63°C (145°F)
Storage Temperature Range	29°C (-20°F) to 74°C (165°F)

## AXT100 Bodypack Transmitter



RF Carrier Frequency Range	470–814 MHz Note: varies by region
Working Range	Under typical conditions: 150 m (500 ft) Line of Sight, outdoors for a single system: 500, (1600 ft) Note: Actual range depends on RF signal absorption, reflection and interference.
Audio Frequency Response	40 Hz–18 kHz (+1, -3 dB) Note: Dependent on microphone type
RF Tuning Step Size	25 kHz
Modulation (45 kHz max. deviation)	FM, Audio Reference Companding with pre- and de-emphasis
Dynamic Range	> 113 dB, A-weighted (referenced at 0 dB setting on transmitter)
Total Harmonic Distortion (45 kHz max. deviation)	<0.3%, A-weighted, typical
System Audio Polarity	Positive pressure on microphone diaphragm (or positive voltage applied to tip of WA302 phone plug) produces positive voltage on pin 2 (with respect to pin 3 of low-impedance output) and the tip of the high impedance 1/4-inch output.
Gain Adjustment Range	-10 to +40 dB (in 1 dB steps)
Battery Type	Shure AXT910 (Rechargeable Li-Ion)
Battery Life	Up to 8 hours (low power mode)
Dimensions	77 mm x 66 mm x 17 mm (3.0 in. x 2.6 in. x 0.7 in.) H x W x D, (with AXT910 battery)
Weight	146.6 g (5.2 oz.), with batteries
Housing	Cast aluminum
Operating Temperature Range	-18°C (0°F) to 63°C (145°F) Note: Battery characteristics may limit this range.
Storage Temperature Range	-29°C (-20°F) to 74°C (165°F) Note: Battery characteristics may limit this range.

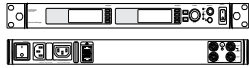
## AXT200 Handheld Frequency Diversity Transmitter



RF Carrier Frequency Range	470–814 MHz Note: varies by region
Working Range	Under typical conditions: 150 m (500 ft) Line of sight, outdoors for a single system: 500 m (1600 ft) Note: Actual range depends on RF signal absorption, reflection and interference
Audio Frequency Response	40 Hz–18 kHz (+1, -3 dB) Note: dependent on microphone type
RF Tuning Step Size	25 kHz
Modulation (45 kHz max. deviation)	FM, Audio Reference Companding with pre- and de-emphasis
Dynamic Range	>113 dB, A-weighted (referenced at 0 dB setting on the transmitter)
Total Harmonic Distortion (45 kHz max. deviation)	<0.3%, A-weighted, typical
System Audio Polarity	Positive pressure on microphone diaphragm (or positive voltage applied to tip of WA302 phone plug) produces positive voltage on pin 2 (with respect to pin 3 of low-impedance output) and the tip of the high impedance 1/4-inch output.
Gain Adjustment Range	-10 to +32 dB (in 1 dB steps)
Battery Type	Shure AXT920/920SL (Rechargeable Li-Ion)
Battery Life	Up to 9 hours (low power mode, Single Carrier Mode)
Dimensions	261 mm x 37 mm (10.3 in. x 2.6 in.) L x Dia.
Weight	395 g (13.9 oz.), with batteries
Housing	Machined aluminum
Operating Temperature Range	-18°C (0°F) to 63°C (145°F) Note: Battery characteristics may limit this range.
Storage Temperature Range	-29°C (-20°F) to 74°C (165°F) Note: Battery characteristics may limit this range.

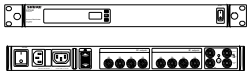
# AXIENT™ Wireless Management Network Specifications (Note: All specifications are subject to change.)

## AXT600 Spectrum Manager



RF Tuning Frequency Range	470–865, 925–952 MHz
RF Tuning Step Size	25, 200, 1000 kHz
Scan Time	The Spectrum Manager scans the entire RF tuning frequency range in 64 seconds using 8 scanning modules in parallel. Scan time per 60 MHz may be less for specified ranges that allow scanning modules to work in parallel. <b>Step Size      Maximum Scan Time per 60 MHz</b> 25 kHz:      48 seconds *200 kHz:    7 seconds *1000 kHz:   1 second <small>*Available only with WWB6 control</small>
Noise Floor	Resolution Bandwidth 25 kHz:      -110 dBm 200 kHz:     -100 dBm 1000 kHz:    -90 dBm
Image Rejection	>110 dB, typical
Spurious Response	<-100 dBm, typical
Ultimate Quieting	>90 dB, A-Weighted
Dimensions	44 mm x 483 mm x 366 mm (1.7 in. x 19.0 in. x 14.4 in.), H x W x D
Weight	5.5 kg (12.0 lbs)
Housing	Steel; Extruded aluminum
Power Requirements	100 to 240 V AC, 50-60 Hz
Current Drain	0.8 A RMS (referenced at 120 V AC)
Storage Temperature Range	-29°C (-20°F) to 74°C (165°F)
Operating Temperature Range	-18°C (0°F) to 63°C (145°F)

## AXT630, AXT631 Antenna Distribution Systems



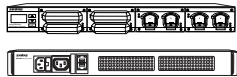
Dimensions	44 mm x 483 mm x 366 mm (1.7 in. x 19.0 in. x 14.4 in.), H x W x D
Weight	4.6 kg (10.1 lbs)
Housing	Steel; Extruded aluminum
Operating Temperature Range	-18°C (0°F) to 63°C (145°F)
Storage Temperature Range	-29°C (-20°F) to 74°C (165°F)
Power Requirements	100 to 240 V AC, 50-60 Hz
Current Drain	1.0 A RMS (referenced at 120 V AC)
RF Frequency Range	AXT 630: 470–698 MHz Wideband AXT 631: 606–814 MHz
Gain Adjustment Range	Cascade Enabled: -15 dB to 0 dB (In 1 dB steps) Cascade Disabled: -12 dB to +3 dB (In 1 dB steps)

## AXT610 ShowLink Wireless Access Point



Antenna Type	Omnidirectional 2.4 GHz
Capacity	16 Axient transmitters
Mounting Type	WA371 Mic Clip or 1/4-20 thread mount
Operating Temperature Range	-18°C (0°F) to 63°C (145°F)
Storage Temperature Range	-29°C (-20°F) to 74°C (165°F)
Dimensions	186 mm x 101 mm x 46 mm (7.34 in. x 3.960 in. x 1.825 in.) H x W x D, without antenna
Weight	476 g (16.8 oz.), without antenna
Housing	Extruded Aluminum
Power Requirements	Power over Ethernet (PoE) Class 1: 36 to 57 VDC/VAC External Power Supply (if PoE is unavailable): 15 V DC (600 mA), double insulated
Frequency Range	2.40 to 2.4835 GHz (16 Channels)
Working Range	Under typical conditions: 150 m (500 ft) Line of Sight, outdoors for a single system: 500 m (1600 ft) Note: Actual range depends on RF signal absorption, reflection and interference.

## AXT900 Rack Charger



Battery Type	Up to 8 rechargeable Li-Ion batteries (AXT910/920/920SL)
Charge Time	50%=1 hour; 100%=3 hours
Charging Module Type	Up to 4 charging modules (AXT901 or AXT902) in any combination
Operating Temperature Range	-18°C (0°F) to 63°C (145°F)
Battery Charging Temperature Range	0°C (32°F) to 60°C (140°F)
Storage Temperature Range	-29°C (-20°F) to 74°C (165°F)
Dimensions	44 mm x 483 mm x 366 mm (1.7 in. x 19.0 in. x 14.4 in.), H x W x D
Weight	4.4 kg (9.8 lbs), without batteries or charging modules
Housing	Steel; Extruded aluminum
Power Requirements	100 to 240 V AC, 50-60 Hz
Current Drain	2.5 A RMS (referenced at 120 V AC)
<b>Networking</b>	
Network Interface	Dual Port Ethernet 10/100
Network Addressing Capability	DHCP or Manual IP address

**SHURE**<sup>®</sup>  
LEGENDARY  
PERFORMANCE™

**United States, Canada,  
Latin America, Caribbean:**  
Shure Incorporated  
5800 West Touhy Avenue  
Niles, IL 60714-4608 USA

Phone: 847-600-2000  
Fax: 847-600-1212 (USA)  
Fax: 847-600-6446  
Email: info@shure.com

**Europe, Middle East, Africa:**  
Shure Europe GmbH  
Jakob-Dieffenbacher-Str. 12,  
75031 Eppingen, Germany

Phone: 49-7262-92490  
Fax: 49-7262-9249114  
Email: info@shure.de

**Asia, Pacific:**  
Shure Asia Limited  
22/F, 625 King's Road  
North Point, Island East  
Hong Kong

Phone: 852-2893-4290  
Fax: 852-2893-4055  
Email: info@shure.com.hk



**SHURE**<sup>®</sup>

LEGENDARY  
PERFORMANCE™