

**FM SPECIFICATION DATA**

Churches • Schools • Auditoriums • Conference Rooms • Theaters

# PPA T45, PPA T45 NET, PPA T45 NET D

## Personal PA™ DSP FM Wideband Transmitters



All models are  
FCC Part 15 Compliant  
to the July 11, 2016 mandate\*

The cutting-edge PPA T45 models take hearing assistance to a whole new level, with network control capability from any remote location, optional Dante™ audio input, multiple digital and analog audio input options, and an OLED high-res screen with easy-to-manage menu navigation.



PPA T45

The PPA T45 NET and NET D models fully integrate with modern networked sound systems. They feature 3 powerful microprocessors and the same high-quality audio and RF performance you've come to expect from Williams Sound. They also offer an adjustable RF output and a sleep mode for energy conservation. It's technology that takes the guesswork out of complex audio installation. Simply select between voice, music, or hearing assistance in the audio preset menu, and this transmitter quickly configures itself.



PPA T45 NET

With an operating range of up to 1000 feet, the PPA T45 models are ideal for auditoriums, stadiums, theaters, or other large venues where superior coverage is essential. Designed to meet ADA (Americans with Disabilities Act) accessibility requirements for hearing assistance. Covered by a Lifetime PLUS Limited Warranty. Made in the USA.



PPA T45 NET D

PPA T45 - FM transmitter

PPA T45 NET - FM transmitter with network control

PPA T45 NET D - FM transmitter with network control and Dante™ input

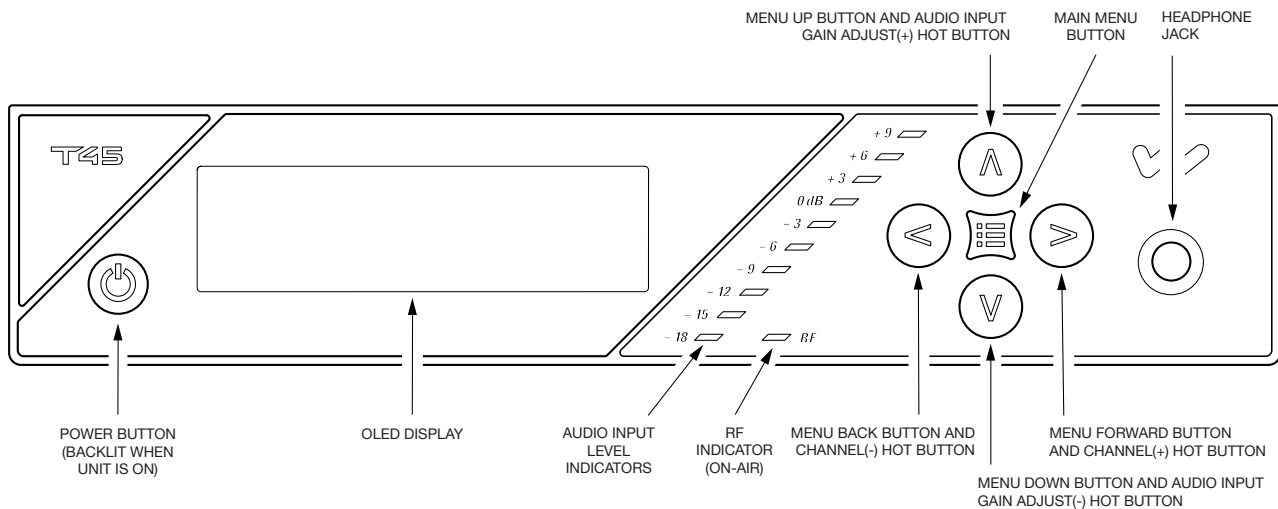
\*Effective July 11, 2016, the FCC has mandated tighter emissions limits on auditory assistance transmitters (72-76 MHz) manufactured or imported after this date to help avoid interference with and/or degradation of other airborne signals (All products manufactured prior to July 11, 2016, are compliant). Williams Sound FM transmitters – PPA T46, PPA T27 and PPA T45 (all models) – all have received a Grant of Certification from the FCC and are fully compliant/approved under this new mandate.

# Personal PA™ DSP FM Wideband Transmitter

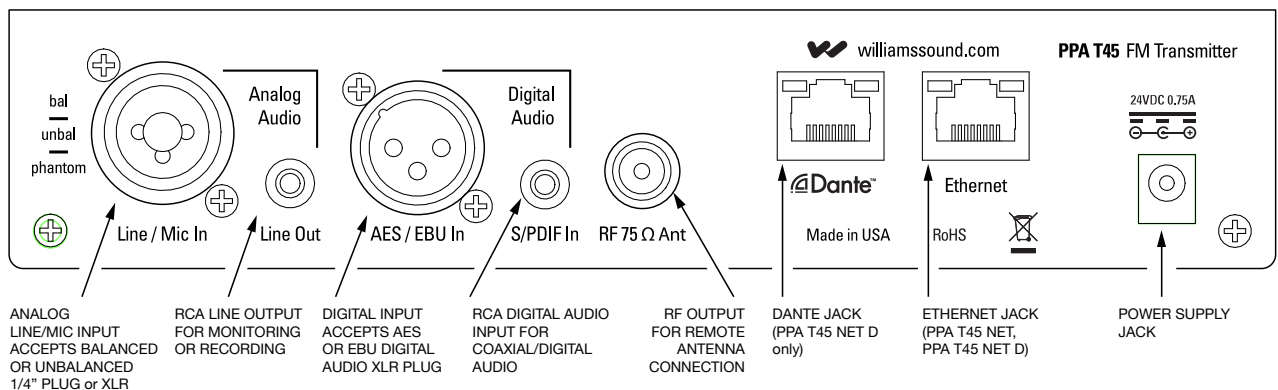
## Features / Benefits

- Network Control Capability\* via Ethernet (10-base-T) using any web browser
- Multiple Digital Audio Inputs (AES, S/PDIF) provide direct connection to digital signal sources
- Optional model with Dante™ audio input\*\*
- OLED high-resolution screen with simplified menu navigation, offers comprehensive and convenient access to full system functions
- DSP Audio Processing
- Sleek and stylish design
- All models are FCC Part 15 Compliant to the July 11, 2016 mandate

## T45 Front Panel (all models)



## T45 NET D Rear Panel\*\*



The PPA T45 does not have Ethernet or Dante™ jacks.

\* The PPA T45 NET has an Ethernet jack but no Dante™ jack.

\*\* The PPA T45 NET D has an Ethernet jack and a Dante™ jack.

# Personal PA™ DSP FM Wideband Transmitter

## PPA T45 / PPA T45NET / PPA T454 NET D

General	
<b>Dimensions</b>	8.45" W x 8.25" D x 1.72"H (21.5 cm x 21 cm x 4.4 cm)
<b>Weight</b>	<b>Transmitter:</b> 3.0 lbs (1.36 kg)
	<b>Shipping Weight:</b> 4.50 lbs (2.04 kg) (Transmitter, Power Supply, Antenna and packaging)
<b>Color</b>	Black/Silver with black legends on the front, white legends on the back
<b>Rack Mount</b>	Standard 19" Rack, one EIA rack space high, 1/2 space wide 1-2 units can be mounted in a single rack space with optional RPK 005 (single) or RPK 006 (double) Rack Mount Kits
<b>Power Supply</b>	Desktop Style Transformer (TFP 048)
	Input: 100-240 VAC, 50/60 Hz. IEC Line Cord
	Output: 24 VDC, 750 mA, 18W. 2.5mm ID center positive barrel connector
	Approvals: UL, CUL, Energy Star VI, CSA listed
<b>Power ON Indicator</b>	Push On/Push Off latching power button, backlit green indicates power ON, backlight off indicates power OFF, fading from bright to dark indicates Sleep Mode* (see "RF Time-out (Sleep Mode)")
<b>Temperature Range</b>	Operating: +32° F to +104° F (0° C to 40° C)
	Storage: -4° F to +158° F (-20° C to 70° C)
<b>Menu Settings</b>	Audio Presets (Music, Voice, Hearing Assist, Custom), Frequency/Channel selection, Frequency/Channel mode, Audio Input Source (Microphone, Line, Phantom, Digital AES/EB, Digital S/PDIF), High Pass Filter, Low Pass Filter, Compression, RF Output Power, Screen Saver Time-Out, Test Tone (400 Hz), Headphone Volume, Headphone Source, Ethernet/ Network Settings (PPA T45 NET and PPA T45 NET D).
RF	
<b>Operating Frequencies</b>	72.1-75.9 MHz , 17 wideband channels (selectable)
<b>Frequency Accuracy</b>	± 2 ppm stability, 0-50° C
<b>Deviation</b>	± 75 kHz maximum
<b>Pre-Emphasis</b>	75 µsec
<b>RF Field Strength</b>	Does not exceed 80 mV/m at 3 m
<b>Compatible Antennas</b>	ANT 005, ANT 021, ANT 024, or ANT 025
<b>Transmission Range</b>	Up to 1000 ft (304 m) with ANT 005 coaxial antenna mounted on rear chassis connector
<b>*RF Time-out (Sleep Mode)</b>	Menu selectable - 30 Min, 4 Hours, or Always On; timer starts when audio is below the -21dB VU level and no buttons are pressed
<b>RF Power</b>	Menu selectable - Full, Medium, Low, Off
<b>RF Outputs</b>	(1x) #10-32 stud connector in center of unit (pcb mounted) (1x) F-connector on rear chassis
<b>RF Transmit Indicator</b>	1 Green LED, indicates RF "On Air"

# Personal PA™ DSP FM Wideband Transmitter

<b>Audio</b>			
<b>Audio Processor Functions</b>	DSP based; Compression: 1:1, 1.5:1 or 2:1; High Pass and Low Pass Filter Frequency control		
<b>Frequency Response</b>	31 – 16,000 Hz, ±3 dB (“Music” Audio Preset)		
<b>Signal-to-Noise Ratio</b>	≥74 dB Transmitted RF		
<b>Total Harmonic Distortion</b>	Less than 0.25% @ 1 kHz (RF output)		
<b>Common Mode Rejection</b>	>57 dB @ 1 kHz, Mic or Line		
<b>Audio Inputs</b>	(1x) Combination 3-pin XLR, 1/4” (TRS) jack for Mic or Line Level Analog Audio, Balanced or Unbalanced Line Level, or Microphone with Selectable Phantom Power (1x) XLR for Digital Audio, AES3/EBU, supported sample rates 44.1 kHz and 48 kHz (1x) RCA for Digital Audio, S/PDIF, supported sample rates 44.1 kHz and 48 kHz		
<b>Audio Input Gain Adjust</b>	In menu, adjustable to 0 to -50 dB, in 1dB steps		
<b>Phantom Power</b>	14.4 VDC applied through 2.2 kΩ resistors to analog combo jack: Pin 2 and Pin 3 on XLR jack, or tip and ring on 1/4” TRS jack		
<b>Audio Level Indicators</b>	10-LED array that reads -18 to +9 dB at 3 dB intervals. 7 Green, 2 Amber, and 1 red LED. Green LEDs indicate normal operating audio level peaks, Amber LEDs indicate close to overload peaks, Red LED indicates overload peaks		
<b>Input Levels (Bal or Unbal) (at Audio Input Gain = 0dB)</b>	<b>Nominal (1st Amber LED)</b>	<b>Overload Warning (Displayed on Screen)</b>	<b>Absolute Maximum Ratings*</b>
<b>Microphone</b>	-55 dBV (1.7 mV RMS)	-15 dBV (180 mV RMS)	+20dBV (10.0 V RMS)
<b>Line</b>	-25 dBV (55 mV RMS)	+16 dBV (6.3 V RMS)	+20 dBV (10.0 V RMS)
<b>Headphone Output</b>	1/4” TRS stereo jack, mono signal, 15.7 mW, maximum in 33 Ω (level adjustable in menu 0 to -40 dB in 2 dB steps)		
<b>Line Output</b>	RCA jack (black), -10 dBV (.32 VRMS); Output impedance 100 Ω		
<b>Other</b>			
<b>Ethernet</b>	RJ-45 on back of unit (PPA T45NET and PPA T45 NET D) supports CAT5e cable lengths up to 328 feet (100 meters); 10/100 Base-T IEEE 802.3 compliant, unique MAC address. Cat5e <b>shielded</b> cable must be used to meet FCC requirements.**		
<b>Dante™ Audio Input</b>	RJ-45 on back of unit (PPA T45 NET D only) supports CAT5e cable lengths up to 328 feet (100 meters); 10/100 Base-T IEEE 802.3 compliant, unique MAC address. Cat5e <b>shielded</b> cable must be used to meet FCC requirements.** (See “Approvals”)		
<b>Approvals</b>	FCC including Part 15, July 11, 2016 mandate** (see footnote below), RoHS2, WEEE, Industry Canada		
<b>Warranty</b>	Lifetime PLUS Limited Warranty (90 Days on most accessories)		

**NOTE: SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE!**

**\*Stresses above these ratings may cause permanent damage. Exposure for extended periods may degrade reliability.**

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# Personal PA™ DSP FM Wideband Transmitter

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## Architectural / Engineering Specifications

### PPA T45 / PPA T45NET / PPA T45 NET D

There shall be three models of the transmitter - an FM transmitter only, one with network control and one with network control and a Dante™ input.

The transmitter shall be a microprocessor-based unit. It may be configured through the on-screen menu.

The model with network control will be configurable over an ethernet (10 base T) network accessible through common web based browsers.

The model with Dante™ input will also be configurable over an ethernet (10 base T) network accessible through Dante™ Controller.

The transmitter shall have a transmitting range of up to 1000 feet. It shall have 17 wideband channels operating on 72.1–75.9 MHz. It shall be supplied with a top mount 39" whip antenna and external power supply.

#### Front Panel:

The transmitter shall have an OLED screen displaying current settings and menu functions.

Channel/frequency selection, audio input source, audio presets (Hearing Assist, Music, Voice and Custom), audio input level, high and low pass filter, compressor gain and RF output power shall be configurable via the front OLED menu or web browser.

There shall be a 10 segment LED bar graph indicating audio input level and an RF "on air" LED. A 1/4" stereo headphone jack will allow monitoring of the transmitted audio.

#### Rear Panel:

The PPA T45 shall be powered by an external 24 VDC power supply.

It shall have a 75 Ω F-connector on the rear for remote antenna applications and an RCA line level output.

It shall have analog 1/4"/XLR combo microphone or line level input jack, XLR AES3 and S/PDIF RCA digital input jacks. The model with Ethernet control shall have an RJ-45 Ethernet jack. The model with Dante™ input capability shall have an RJ-45 Ethernet jack configured for Dante™ virtual sound card.

The transmitter shall be compatible with all Williams Sound FM wideband 72-76 MHz receivers and have a lifetime limited warranty.

All transmitter models shall comply to FCC Part 15.

The FM transmitter shall be the Williams Sound model number PPA T45.

The FM transmitter **with network control** shall be the Williams Sound model number PPA T45 NET.

The FM transmitter with **network control and Dante™ input** shall be the Williams Sound model number PPA T45 NET D.

#### Domestic Sales

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