21 PT 3500 SUB/4-2

SWETON®



21 PT 3500 SUB/4-2 – MORE MOTOR. MORE CONTROL. MORE SPL.

The **21 PT 3500 SUB/4-2** is a 21-inch, high-power subwoofer transducer rated at 3500 W AES (7000 W program). Its motor develops a force factor of 51.17 N/A against a DC resistance of only 6.36 Ω. That is a Bl^2/Re of 412 N^2/W, about 60 % more motor than the 21 PT 2500 SUB. The 152 mm (6-inch), 4-layer copper voice coil, in/out wound on a glass-fibre former and driven by a ferrite motor, gives it the thermal capacity to stay at that level show after show.

With Fs 39.1 Hz, Qts 0.42 and Vas 93.4 L (EBP 90.5 Hz), the driver is made for vented and band-pass enclosures. A 1698 cm^2 cone with ±13.5 mm Xmax moves 2.29 L of air (Vd). In a 200 L vented box that is a calculated 128–132 dB at 1 m (half-space) at rated power, before power compression.

A stiff suspension (Kms 43.7 N/mm) and low mechanical losses (Qms 24.7) leave the cone under firm electrical control. Bass stays tight and fast at full drive, the way Indian roadshow, DJ and event systems are actually used.

Enclosure Recommendations:

Enclosure Type	Net Volume (Litres)	Tuning (Hz)	Port Area (min.)	Application Use Case
Reflex (Vented)	180–220 L (200 L optimum)	34–36 Hz	600 cm^2	General PA, DJ, live sound
4th Order Bandpass	Rear: 90–110 L (sealed) Front: 45–55 L (ported)	Front: 60–64 Hz	450 cm^2	DJ subs, club, dance music
6th Order Bandpass	Rear: 150–180 L (ported) Front: 55–65 L (ported)	Rear: 40 Hz Front: 80 Hz	Rear 600 cm^2 Front 500 cm^2	Roadshows, SPL, aggressive bass

Recommended HF Pairing

Parameter	Recommendation
Power Rating	120–150 W AES
Sensitivity	109–111 dB (1 W/1 m, on horn)
Diaphragm Type	Titanium preferred
Exit / Voice Coil	2" exit, 3"–4" VC (1.4" for compact tops)
Horn Coverage	90° × 40° (60° × 40° for long throw)

Crossover Recommendations:

Component	Type	Frequency	Slope
Subwoofer	LPF	80–100 Hz	24 dB/oct LR
Subwoofer	Subsonic HPF	32 Hz vented 36 Hz 4th BP 33 Hz 6th BP	24 dB/oct BW
Mid / Top	HPF	80–100 Hz	24 dB/oct LR
HF Driver	HPF	1.2–1.6 kHz	24 dB/oct LR

Required: always run the subsonic HPF. Below port tuning the cone unloads, and at rated power it would go past Xmax (±13.5 mm).

Application

- Roadshows & DJ systems
- Ground-stacked subs for line-array & point-source tops
- Outdoor public address & large public events
- Religious events, festivals and mela grounds
- Concert, stadium and large-venue systems
- Club and dance-music installations (4th order bandpass)

Why Choose 21 PT 3500 SUB/4-2?

- Bl 51.17 N/A, Bl^2/Re 412 N^2/W: a very strong motor for control and punch
- 3500 W AES / 7000 W program on a 6-inch, 4-layer copper in/out coil
- Vd 2.29 L: ±13.5 mm Xmax over a 1698 cm^2 cone
- Qts 0.42, EBP 90.5 Hz: ideal for vented and band-pass boxes
- Kms 43.7 N/mm, Qms 24.7: stable suspension for extreme gig duty

Legal Disclaimer (Technical Recommendations):

Disclaimer: All enclosure volumes, port dimensions, crossover frequencies, and HF driver recommendations in this document are derived from measured Thiele/Small parameters (Klippel LPM) and lumped-parameter simulation for typical application scenarios. Large-signal effects (power compression, Bl(x), Kms(x)) are not included. These are suggested guidelines to assist system designers and integrators. Actual results may vary with cabinet construction, environment, signal chain, and usage conditions. SWETON shall not be held liable for any direct or indirect losses, damages, or performance issues arising from reliance on these recommendations. Users are advised to conduct their own system-level testing before deployment.

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SPECIFICATIONS & PARAMETERS

Specifications

Nominal Diameter	21 in (533 mm)
Nominal Impedance	8 Ω
Minimum Impedance	6.8 Ω @ 100 Hz
Nominal Power Handling (AES)	3500 W
Program Power	7000 W
Sensitivity (1W/1m)	94 dB
Max SPL (calc., AES, 1 m)	129 dB
Frequency Range	30 – 1500 Hz
Recommended Operating Band	30 – 120 Hz
Magnet Material	FERRITE
Voice Coil Diameter	152 mm (6.0 in)
Winding Material	COPPER
Number of Layers	4
Former Material	GLASS FIBRE
Winding Type	IN/OUT

Mounting Info

Overall Diameter	555 mm
Bolt Circle Diameter	540 mm
Baffle Cutout Diameter	495 mm
Depth	215 mm
Flange and Gasket Thickness	21.10 mm
Weight	26.62 Kgs

Parameters

Resonant Frequency	Fs	39.1 Hz
DC Resistance	Re	6.36 Ω
Electrical Q	Qes	0.43
Mechanical Q	Qms	24.68
Total Q	Qts	0.42
Compliance Equivalent Volume	Vas	93.41 Ltrs
Peak Diaphragm Displacement Volume	Vd	2.29 Ltrs
Effective Surface Area of Cone	Sd	1698.23 cm^2
Reference Efficiency	η0	1.25 %
Moving Mass including air load	Mms	722.97 gms
Moving Mass (diaphragm assy.)	Mmd	643.89 gms
Mechanical Compliance	Cms	0.023 mm/N
Motor Strength	Bl	51.17 T•m
Voice Coil Inductance	Le	4.44 mH
Efficiency Bandwidth Product	EBP	90.5 Hz
Voice Coil Overhang	Xmax	±13.50 mm

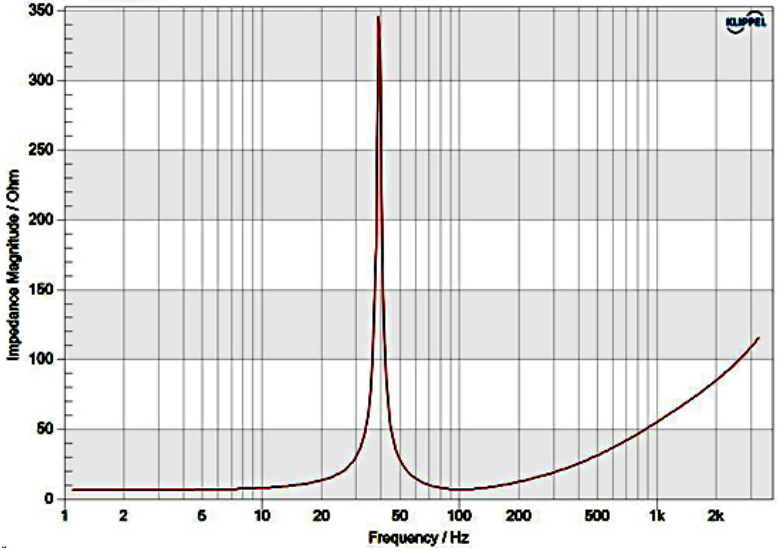
Recone Kit

Recone Kit Number	REC21PT3500SUB

T/S parameters measured with Klippel LPM (laser), small signal, 8 Ω nominal. Vd = Sd × Xmax. EBP = Fs / Qes. Sensitivity is the Klippel Lnom (1 W into 8 Ω, 1 m, half-space). Max SPL = sensitivity + 10•log(3500), before power compression.

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Impedance Magnitude Z(f) — Klippel LPM



On-Axis Frequency Response (CLIO)

