

18 IT 1500 N SUB

SWETON®



The **SWETON 18 IT 1500 N SUB** is a Ferrite 18-inch low-frequency transducer built for touring rigs and live shows where weight matters as much as output. At 15.2 kg it carries a 1195 cm² diaphragm, ± 12 mm X_{max} and a BL ≈ 24.4 N/A motor on a 229 g moving assembly, resonating at F_s ≈ 32.8 Hz — genuinely low for an 18-inch driver. With 1500 W AES and Q_{ts} ≈ 0.448 it serves equally as a full-range LF section or a dedicated subwoofer, reaching -3 dB at 35 Hz in a 190 L reflex cabinet.

How it performs:

- F_s 32.8 Hz with Vas 207.6 L puts real sub-bass within reach — -3 dB at ≈ 35 Hz in 190 L tuned 37 Hz, and ≈ 29 Hz in a 280 L / 32 Hz extended box.
- EBP 71 Hz with Q_{ts} 0.448 makes it unusually flexible: a compact 145 L punch box and a large deep-tuned cabinet both work well.

- ± 12 mm X_{max} and V_d 1.43 L move serious air; modelled peak travel is 11.0 mm at full 1500 W AES in the 190 L alignment — thermal and mechanical limits arrive together.
- Impedance minimum sits just above Re 5.83 Ω and the curve is smooth, free of secondary resonances.

Applications

- **Flown & Ground-Stacked Sub Arrays:** light enough to fly in quantity, deep enough to anchor a full system.
- **Touring Line-Array LF Sections:** Perfect subs for LF Section.
- **Festival & Outdoor Live Sound:** ≈ 128 dB band SPL at AES power with genuine 35 Hz extension.
- **High-End Club Installs:** the extended alignment reaches below 30 Hz for electronic programme.

Why Choose the 18 IT 1500 N SUB?

1. **True 32.8 Hz F_s:** extension most 18-inch drivers need a horn or a far larger box to reach.
2. **Balanced Limits:** excursion and thermal ceilings coincide at 1500 W AES, so no capability is left unused.
3. **Alignment Flexibility:** EBP 71 Hz supports compact punch boxes and large extended cabinets equally well.
4. **Klippel + CLIO Tested:** T/S parameters measured on a Klippel Analyzer; response verified on CLIO.

Use case	Enclosure (net, after driver/port)	Tuning (Fb)	Crossover (HPF / LPF)	Suggested EQ (parametric)	Notes	DSP Protection (based on AES 1500 W, 8 Ω)
Compact Reflex (single cab, truck-friendly)	140–150 L vented	40–42 Hz	HPF 34–36 Hz BW24; LPF 90–110 Hz LR24	-1.5 dB @ 95–115 Hz, Q ≈ 1.0 ; $+1$ dB @ 45–55 Hz, Q ≈ 0.8	-3 dB ≈ 41 Hz, -10 dB ≈ 28.5 Hz. Port area ≥ 400 cm ² for <17 m/s at AES. Peak travel 10.0 of 12 mm.	• RMS Limiter Voltage: 109.5 V RMS
Standard Reflex (best all-round balance)	180–200 L vented	36–38 Hz	HPF 31–33 Hz BW24; LPF 85–100 Hz LR24	-1 dB @ 100–120 Hz, Q ≈ 1.0 ; optional $+1$ dB @ 40–48 Hz, Q ≈ 0.8	-3 dB ≈ 35 Hz, -10 dB ≈ 26 Hz. Port area ≥ 460 –520 cm ² (wide slot). Peak travel 11.0 mm.	• Peak Limiter Voltage: $\approx 1.4 \times 109.5 = 153$ V peak
Extended Reflex (club / install, deep)	260–300 L vented	32–33 Hz	HPF 29–30 Hz BW24; LPF 80–95 Hz LR24	-1.5 dB @ 100–120 Hz, Q ≈ 1.0 ; $+1$ dB @ 35–45 Hz, Q ≈ 0.8 if the room allows	-3 dB ≈ 29 –30 Hz — genuine sub-bass. Port ≥ 550 –600 cm ² . Excursion limiter essential below 35 Hz (13–14 mm modelled vs 12 mm X _{max}).	• Attack/Release: 10–20 ms attack, 100–150 ms release for RMS; 1–3 ms attack, 20–40 ms release for peak.
Array of 4+ (coupled on ground)	180 L reflex each	36 Hz	HPF 31–33 Hz BW24; LPF 85–100 Hz LR24	Little or no boost below 60 Hz — coupling supplies $+6$ dB per doubling; keep only the 100 Hz trim	Use delay to steer/arc. Watch coupling lift below 60 Hz and re-check the excursion limiter.	

SPECIFICATIONS & PARAMETERS

Specifications

Nominal Diameter	457 mm
Nominal Impedance	8 Ω
Nominal Power Handling (AES)	1500 W
Program Power	3000 W
Sensitivity (1W/1m)	95 dB
Frequency Range	33-4000 Hz
Magnet Material	Ferrite
Voice Coil Diameter	99.3 mm
Winding Material	Copper
Former Material	Glass Fibre
Winding Type	In/Out

Mounting Info

Overall Diameter	457 mm
Bolt Circle Diameter	444 mm
Baffle Cutout Diameter	421 mm
Depth	225 mm
Flange and Gasket Thickness	18.75 mm
Gross Weight	15.20 Kgs

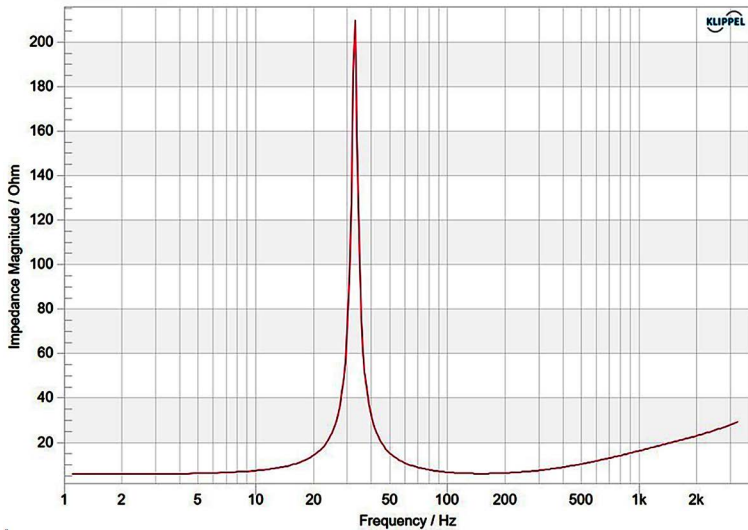
Parameters

Resonant Frequency	Fs	32.8 Hz
DC Resistance	Re	5.83 Ω
Electrical Q	Qes	0.461
Mechanical Q	Qms	16.36
Total Q	Qts	0.448
Compliance Equivalent Volume	Vas	207.56 Ltrs
Peak Diaphragm Displacement Volume	Vd	1.43 Ltrs
Effective Surface Area of Cone	Sd	1194.59 cm ²
Reference Efficiency	η_0	1.53%
Moving Mass including air load	Mms	229.23 gms
Motor Strength	Bl	24.45 T-m
Voice Coil Inductance	Le	1.01 mH
Efficiency Bandwidth Product	EBP	71 Hz
Voice Coil Overhang	Xmax	± 12.00 mm

Recone Kit

Recone Kit Number	REC18IT1500N8E
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Magnitude of Electrical Impedance $Z(f)$



On-Axis Frequency Response (CLIO)

