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Entwicklungslabor

Hochfrequenztechnik

1 kW Power Amplifier HPA-8000B-54



Operational Description

Version 2017-04



The HPA-8000B-54 is a 1000W solid state linear amplifier that covers the amateur radio band range as shown in Tab. A1-2 and Tab. A1-3.

Tab. A1-2: Frequency Bands HF

Button	Band	Sign	Frequency Range	
<input type="text" value="1.8"/> <input type="text" value="1"/>	160 m	MF	1.810 ¹ / 1.800 ^{2,3}	... 2.000 MHz
<input type="text" value="3.5"/> <input type="text" value="2"/>	80 m	HF	3.500	... 3.800 ¹ / 4.000 ² / 3.900 ³ MHz
<input type="text" value="7.0"/> <input type="text" value="3"/>	40 m		7.000	... 7.200 ¹ / 7.300 ^{2,3} MHz
<input type="text" value="10"/> <input type="text" value="4"/>	30 m		10.100	... 10.150 MHz
<input type="text" value="14"/> <input type="text" value="5"/>	20 m		14.000	... 14.350 MHz
<input type="text" value="18"/> <input type="text" value="6"/>	17 m		18.068	... 18.168 MHz
<input type="text" value="21"/> <input type="text" value="7"/>	15 m		21.000	... 21.450 MHz
<input type="text" value="24"/> <input type="text" value="8"/>	12 m		24.890	... 24.990 MHz
<input type="text" value="28"/> <input type="text" value="9"/>	10 m		28.000	... 29.700 MHz

IARU Region 1 ² = IARU Region 2 ³ = IARU Region 3

Tab. A1-3: Frequency Band VHF

Button	Band	Sign	Frequency Range	
<input type="text" value="50"/> <input type="text" value="0"/>	6 m	VHF	50.000	... 52.000 ¹ / 54.000 ^{2,3} MHz
<input type="text" value="52 MHz"/>				

IARU Region 1 ² = IARU Region 2 ³ = IARU Region 3

Two transceivers can be connected to the HPA-8000B-54 and up to 4 antennas can be managed. The transceiver and the antennas can be switched manually directly with the soft keys at the front panel. If the control interface is connected to a transceiver, the frequency and the antennas are controlled by the transceiver. Tab. 4-1 shows the connectors for the transceivers and the antennas.

Tab. 4-1: Connectors on Rear Panel

No.	Label	Type	Description	
J10	VHF TRX 1	N	VHF input transceiver 1 only for TRX PT-8000A	50 MHz TRX PT-8000A only 'CAT Type' selection: 'Hilberling' (Sec. 5.4.2 and 7.2). *
J11	TRX 1	N	Input transceiver 1	1.8 ... 29.7 MHz TRX PT-8000A 1.8 ... 29.7 / 50 MHz TRX by other manufacturer
J12	VHF TRX 2	N	VHF input transceiver 2 only for TRX PT-8000A	50 MHz TRX PT-8000A only 'CAT Type' selection: 'Hilberling' (Sec. 5.4.2 and 7.2). *
J13	TRX 2	N	Input transceiver 2	1.8 ... 29.7 MHz TRX PT-8000A 1.8 ... 29.7 / 50 MHz TRX by other manufacturer
J14	ANT. 4	N	HF output antenna 4	
J15	ANT. 3	N	HF output antenna 3	



Tab. 4–1: Connectors on Rear Panel (continued)

No.	Label	Type	Description
J16	ANT. 2	N	HF output antenna 2
J17	ANT. 1	N	HF output antenna 1

With a driving power of typ. 50W the output power reaches the 1000W. The amplifier has built in two MRFE6VP1K25H transistors working in AB mode. An automatic Tuner is implemented that handles load mismatches up to 3:1 within the frequency range from 1.8MHz to 30MHz.

Tab. A1-1 shows an overview of the technical details for the HPA-8000B-54.

Tab. A1-1: Technical Data

Output Power (FM / AM / SSB / CW)	1kW
Add. PA Output (Predistortion Feedback Channel)	–60 dBc ATT.
Amateur Radio Bands	160 m – 6 m (1.8 – 54 MHz) s. Tab A2–2
Input Power	typ. 50 W / 1kW RF Out
Transceiver Connectors	2
Antenna Connectors	4
Antenna Tuner fully automatic	1.8 – 29.7 MHz (max. SWR 3:1)
Remote Control by Transceiver (CAT)	◆ Band Switch ◆ Frequency Display
CAT Interfaces	◆ RS232 ◆ Band Data 4bit ◆ CI-V ◆ Band Voltage
Manual Control	◆ Band Buttons ◆ PTT Input (RCA) ◆ ALC Input (RCA)
PC Interface (Programming / Update)	USB / RS232
Protective circuits	◆ Overcurrent ◆ SWR ◆ Temperature ◆ Input Power ◆ Output Power
Power Supply	Internal Power Supply Unit 200 – 260 V / 50 – 60 Hz / 13 A
Dimensions	approx. 425 x 459 x 173 mm (W x D x H) (approx. 16.75 x 18.1 x 6.8")
Weight	19.8 kg (43.7 lbs)