

# BSE4K-LD2

## 4kW FM TRANSMITTER



The **BSE4K-LD2** is a compact solid state 4kW VHF FM transmitter providing exceptional RF and audio performance with R.F. output in excess of 4kW.

The **BSE4K-LD2** utilizes 'State-of-the-Art' LDMOS technology that provides outstanding amplifier efficiency and reliability.

The **BSE4K-LD2** is based on two AL4-2000LD RF Amplifiers each capable of delivering in excess of 2kW. Each amplifier has 4 x 600W LDMOS amplifier stages, combined to provide 2kW RF Output. The unit also has two built-in SMPS rated at 2kW each with PFC control and efficiencies of > 90%. Two AL4-2000LD amplifiers are combined in the SC 4 2 way combiner to produce the >4kW RF Output.

An optional ESU-1 switching unit and EX1-25D can be used when dual exciter configuration is required and provides automatic switching to the standby exciter.

Mains supply required is three phase 400V, distributed as single phase internally across phases and neutral.

The BSE4K-LD2 utilizes a wideband, 2 way combiner, model SC4-2 way.

### FEATURES

- Digital Meter display (for accurate power measurement)
- Excellent stereo audio performance
- Single or Dual exciter operation (dual is optional)
- LDMOS RF Mosfet technology
- Built-in transient suppression module (optional)
- W/B and RDS/SCA auxiliary I/P (standard)
- Built-in forced air cooling system
- Operation into cavity input or star point combiner
- VSWR Fold-back and retry for maximum operational availability

### Optional Configurations

Dual exciter with auto change-over unit

Single or dual FM Relay receiver

Single or dual UHF link Receiver

30U cabinet size

Remote monitoring Interface (GSM) - Optional



2kW R.F Amplifier AL4-2000LD

# TECHNICAL SPECIFICATIONS

## PARAMETER

### RF SPECIFICATION

Frequency range	87.5 to 108 MHz
Modulation type	F3E and F8E (direct carrier)
Frequency synthesizer	PLL with Local/Remote control
Frequency increments	100 kHz
Frequency stability	2ppm
RF output power	> 4kW
RF spurious/harmonics	< -70dBc
Asynchronous AM	< -60dB
Synchronous AM	< -50dB
RF output connector	1 5/8" EIA flange 50 Ohm
RF monitor connector	BNC (female) 50 ohm
Max VSWR	1.5:1 (factory set)

### POWER SUPPLY

AC power input	400V three Phase (4 wire)
AC Frequency	47Hz to 63Hz
Mains variation	+/-15%
Consumption	5800VA (nominal)

### ENVIRONMENTAL

Operating temperature	-10 to +45 °C
Operating altitude	<2800 metres
Humidity	<90% (non condensing)

### PHYSICAL

Dimensions (mm)	600W x 800D x 1550H (30U)
Weight (with cabinet)	150kg nominal

### TELEMETRY

Alarms (voltage free)	Forward, Reflected, Temp, PSU
Command inputs	Mono/Stereo, RF enable
DC Outputs	Forward, Reflected, +12V (jig)

## PARAMETER

### COMPOSITE SPECIFICATION

W/B amplitude response	+/- 0.2dB (30Hz to 100kHz)
W/B stereo separation	>60dB (typical 67dB) 30Hz to 15kHz (decoded)
W/B stereo crosstalk	>50dB (30Hz to 15kHz) L+R into L-R
Total harmonic distortion	<0.1% (Typical 0.035%) 30Hz to 15kHz (decoded)
FM S/N ratio (stereo)	>75dB (30Hz to 15kHz)
I/P impedance	10k ohm unbalanced
Deviation sensitivity	3.5V p-p (adjustable)

### STEREO OPERATION (with 50uS de-emphasis)

AF amplitude response	+/-0.2dB (30Hz to 15kHz)
Stereo separation	>60dB 30Hz to 15kHz (decoded)
Mono/Stereo crosstalk	>50dB (30Hz to 15kHz)
Stereo distortion	<0.1% (30Hz to 15kHz)
Stereo S/N ratio	>75dB (30Hz to 20kHz)
Input impedance	600 ohm balanced (XLR)
Deviation sensitivity	+6dBm for +/-40kHz deviation (adj)
Pre-emphasis	50 or 75uS (internal link)

### STEREO LIMITER (Option 1)

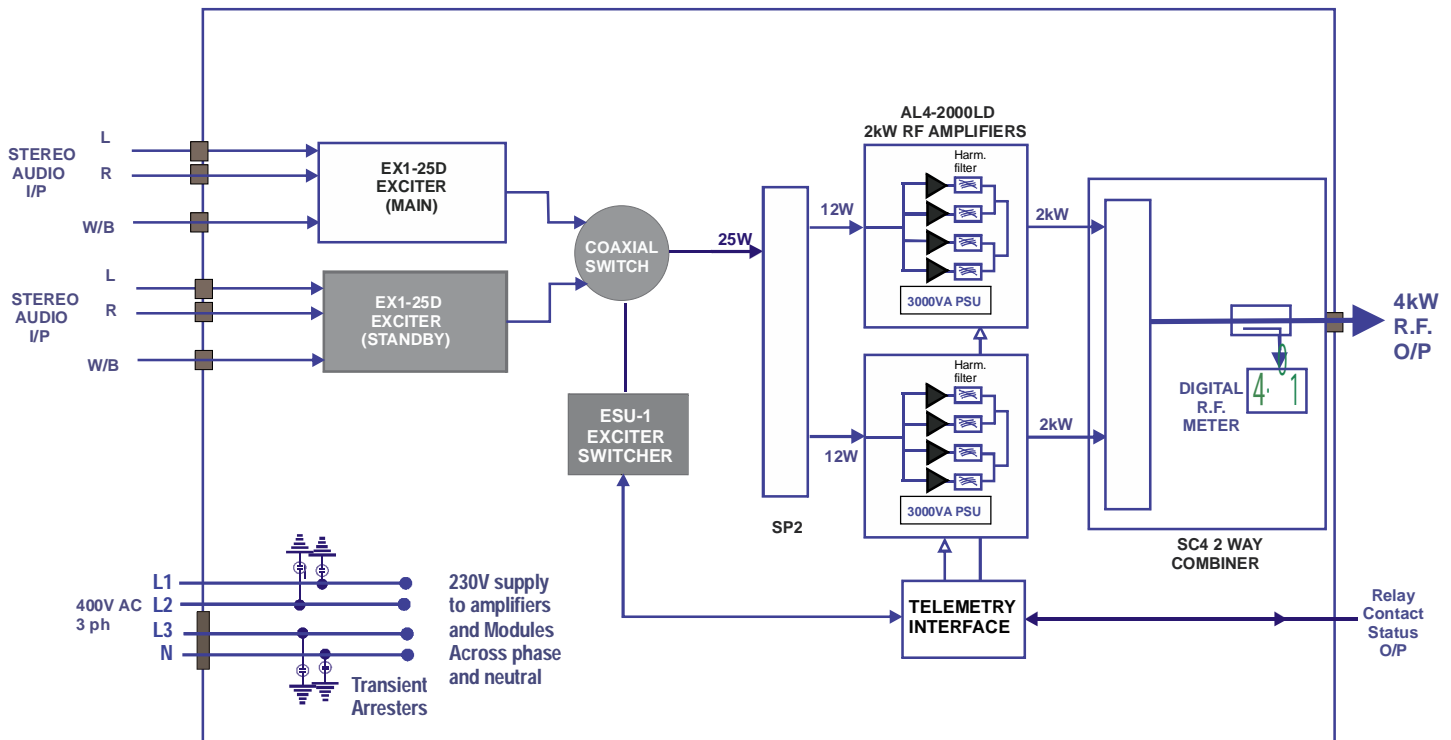
Audio limiter sensitivity	10dBm nom. for 68kHz deviation
Attack time	< 2mS for increased 10dB I/P step
Decay time	>80mS for decreased 10dB I/P step
Limiter distortion	< 0.25% (10dB into limiting)
Limiter threshold	Internally adjustable

### RF AMPLIFIER TRANSISTORS

Type	LDMOS BLF178XR or BLF188XR
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### STANDARDS

Complies with ITU Recommendation BS.450-3



OPTIONAL

**SCHEMATIC DIAGRAM OF BSE4K-LD2 4KW FM STEREO TRANSMITTER**