

# LCEL EcoLine Series

Extended L-Band Active Combiners (4-way, 8-way, 16-way, 32-way)

Made  
in  
Germany

## GENERAL

The LCEL EcoLine series represents cost effective active L-Band combiners available as single combiners (4:1, 8:1, 16:1 and 32:1) or dual combiners (2 x 4:1, 2 x 8:1 or 2 x 16:1) each housed into a compact and space saving 1RU/19" rack-mount chassis

This units operate within the extended L-Band frequency-range (850...2450MHz) ready for KA-Band and HTS applications and allow easy combining of up to 32 input signals to 1 output with zero loss. The units feature DC-supply e.g. to feed a BUC (switchable ON/OFF) and 1:1 dual power supply redundancy. Optionally the units can be equipped with a 10MHz external reference signal input port for feeding a 10MHz signal e.g. to BUC's. Front side colored status LED's display the health status of each power-supply and status of DC-supply while the unit is additionally equipped with a potential free alarm/error contact interface.

The LCEL EcoLine series combiners are available with 50Ohm SMA(f) or BNC(f) as well as 75Ohm F(f) or BNC(f) connectors and a perfect fit for Satellite-, Broadcast and Broadband RF distribution infrastructures such as for Teleports, Earth-Station or Cable/IPTV headend operations.



## FEATURES

- Space saving 1RU/19" rack mount design
- Excellent price-performance ratio
- Extended L-Band frequency (850...2450MHz) also suitable for Ka-Band and HTS applications
- Available as single 4:1, 8:1, 16:1 and 32:1 or dual 4:1, 8:1 and 16:1 (2 x 4:1, 2 x 8:1 or 2 x 16:1) active combiners
- Coming with 50Ohm SMA(f)/BNC(f) or 75Ohm F(f)/BNC(f) connectors (mixed input/output connectors possible upon request)
- Internally amplified zero loss active combiner units
- Professional PCB design assuring excellent RF performance, quality and reliability
- Supports switchable DC-supply 24VDC (ON/OFF), 400mA e.g. to feed BUC
- 10MHz external reference signal input (Option)
- Colored LED's displaying power-supply & status
- Potential free alarm/error contact (DB9-female)
- 1:1 redundant dual power-supply

## TECHNICAL SPECIFICATIONS

- **Dimensions:** 1RU/19" rack-mount
- **Power supply:** 85...230V, 50/60Hz / 1:1 redundant
- **Power consumption:** <10W (without DC-supply)  
<20W (with max. DC-supply voltage)
- **Combiner variants:** 4:1, 8:1, 16:1 & 32:1  
Dual 4:1, 8:1, 16:1
- **Frequency range:** 850...2450MHz (Extended L-Band)
- **Input/Output connectors:** 50Ohm SMA(f) or BNC(f)  
75Ohm F(f) or BNC(f)

## TECHNICAL SPECIFICATIONS

- **Input RF power:** +30dBm max.
- **Input Return loss:** 15dB min.
- **Output Return loss:** 15dB min.
- **Noise figure**  
4:1, 8:1; 16:1,32:1 (50Ohm): 18dB typ.  
4:1, 8:1; 16:1,32:1 (75Ohm): 19dB typ.
- **Isolation:** ≥ 20dB
- **Insertion loss:** 0dB typ., ± 1.0dB max.
- **Frequency response:** ±1.50dB max.  
± 0,25dB @ any 36MHz
- **P1dB:** : ≥ +16dBm
- **IMA3 @ -10dBm:** < -60dBc
- **SFDR:** < -70dBm
- **Switchable DC-supply:** 24VDC (ON/OFF); 400mA  
automatic fuse protection
- **10MHz reference port:** 50Ohm SMA(f), rear side
- **Status LED's:** Power-supply / DC supply
- **Potential free alarm contact:** DB9-female (rear side)
- **Operating temperature:** 0...50°C
- **Storage temperature:** - 20°C...75°C
- **Humidity:** 90% non-condensing
- **RoHs:** compliant

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## ORDER INFORMATION

### In-/Output: 50Ohm SMA(f) connectors

- **LC104EL-50S:** Active L-Band Combiner, 1 x 4:1, DC-supply, 50Ohm SMA(f), 1RU/19" rack mount, EcoLine
- **LC108EL-50S:** Active L-Band Combiner, 1 x 8:1, DC-supply, 50Ohm SMA(f), 1RU/19" rack mount, EcoLine
- **LC116EL-50S:** Active L-Band Combiner, 1 x 16:1, DC-supply, 50Ohm SMA(f), 1RU/19" rack mount, EcoLine
- **LC132EL-50S:** Active L-Band Combiner, 1 x 32:1, DC-supply, 50Ohm SMA(f), 1RU/19" rack mount, EcoLine
- **LC2104EL-50S:** Active **Dual** L-Band Combiner, 2 x 4:1, DC-supply, 50Ohm SMA(f), 1RU/19" rack mount, EcoLine
- **LC2108EL-50S:** Active **Dual** L-Band Combiner, 2 x 8:1, DC-supply, 50Ohm SMA(f), 1RU/19" rack mount, EcoLine
- **LC2116EL-50S:** Active **Dual** L-Band Combiner, 2 x 16:1, DC-supply, 50Ohm SMA(f), 1RU/19" rack mount, EcoLine

### In-/Output: 50Ohm BNC(f) connectors

- **LC104EL-50B:** Active L-Band Combiner 1 x 4:1, DC-supply, 50Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC108EL-50B:** Active L-Band Combiner 1 x 8:1, DC-supply, 50Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC116EL-50B:** Active L-Band Combiner 1 x 16:1, DC-supply, 50Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC132EL-50B:** Active L-Band Combiner, 1 x 32:1, DC-supply, 50Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC2104EL-50B:** Active **Dual** L-Band Combiner, 2 x 4:1, DC-supply, 50Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC2108EL-50B:** Active **Dual** L-Band Combiner, 2 x 8:1, DC-supply, 50Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC2116EL-50B:** Active **Dual** L-Band Combiner, 2 x 16:1, DC-supply, 50Ohm BNC(f), 1RU/19" rack mount, EcoLine

### In-/Output: 75Ohm F(f) connectors

- **LC104EL-75F:** Active L-Band Combiner, 1 x 4:1, DC-supply, 75Ohm F(f), 1RU/19" rack mount, EcoLine
- **LC108EL-75F:** Active L-Band Combiner, 1 x 8:1, DC-supply, 75Ohm F(f), 1RU/19" rack mount, EcoLine
- **LC116EL-75F:** Active L-Band Combiner, 1 x 16:1, DC-supply, 75Ohm F(f), 1RU/19" rack mount, EcoLine
- **LC132EL-75F:** Active L-Band Combiner, 1 x 32:1, DC-supply, 75Ohm F(f), 1RU/19" rack mount, EcoLine
- **LC2104EL-75F:** Active **Dual** L-Band Combiner, 2 x 4:1, DC-supply, 75Ohm F(f), 1RU/19" rack mount, EcoLine
- **LC2108EL-75F:** Active **Dual** L-Band Combiner, 2 x 8:1, DC-supply, 75Ohm F(f), 1RU/19" rack mount, EcoLine
- **LC2116EL-75F:** Active **Dual** L-Band Combiner, 2 x 16:1, DC-supply, 75Ohm F(f), 1RU/19" rack mount, EcoLine

### In-/Output: 75Ohm BNC(f) connectors

- **LC104EL-75B:** Active L-Band Combiner, 1 x 4:1, DC-supply, 75Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC108EL-75B:** Active L-Band Combiner, 1 x 8:1, DC-supply, 75Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC116EL-75B:** Active L-Band Combiner, 1 x 16:1, DC-supply, 75Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC132EL-75B:** Active L-Band Combiner, 1 x 32:1, DC-supply, 75Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC2104EL-75B:** Active **Dual** L-Band Combiner, 2 x 4:1, DC-supply, 75Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC2108EL-75B:** Active **Dual** L-Band Combiner, 2 x 8:1, DC-supply, 75Ohm BNC(f), 1RU/19" rack mount, EcoLine
- **LC2116EL-75B:** Active **Dual** L-Band Combiner, 2 x 16:1, DC-supply, 75Ohm BNC(f), 1RU/19" rack mount, EcoLine

## OPTIONS

- Option 096: 10MHz external reference signal port (via common port)

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