

Kumu Networks' KR5 Full Duplex Self-Backhaul LTE UE Relay enables small cell LTE eNodeB's to backhaul to an LTE macro base-station with the same access frequencies used by both the small cell and the macro network.

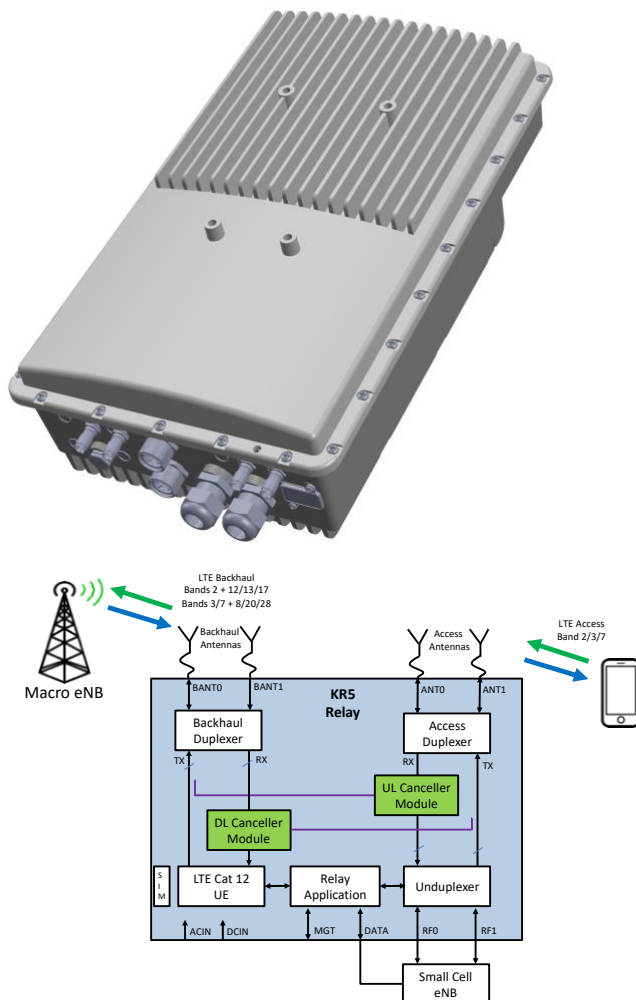
The Relay accomplishes full-duplex operation by utilizing Kumu Networks' proprietary Self-Interference Canceller technology to suppress transmitter interference into the receive radios in real-time, such that both the Uplink and

Downlink radios can be operational in the same channel at all times.

By using Full Duplex wireless backhaul, operators not only reduce frequency planning complexity but also improve spectral efficiency through channel reuse. The KR5 Relay is easy to install in a matter of minutes. It eliminates the cost of wired backhaul and minimizes operational costs by providing an easy to use network management interface.

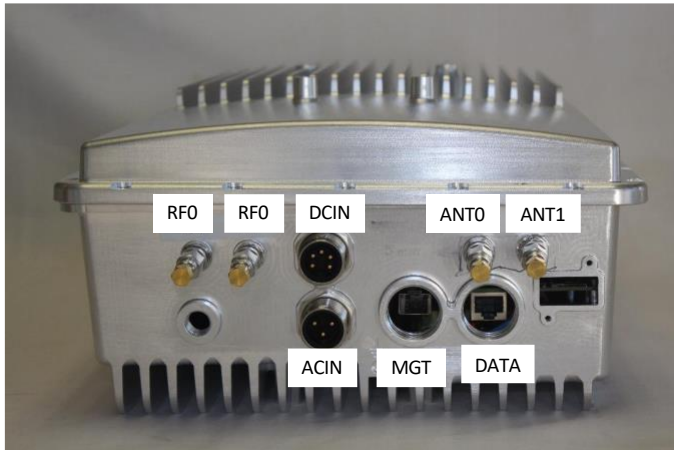
Features

- Simultaneous use of same channel for access and backhaul (Full-Duplex)
- SKU variants for different LTE bands
- Integrated Cat 12 LTE UE for maximum throughput on backhaul link
- Up to 2CC 40MHz Carrier Aggregation with low-band LTE for improved backhaul coverage
- Works with any LTE small cell
- eNodeB MIMO support up to 2Tx / 2Rx
- eNodeB transmit power support up to 5W per port (+37dBm)
- Transmit noise suppression in receive channel down to -85dBm with Self-Interference Cancellation
- Real-time tuning so cancellation is maintained even in presence of wireless channel variations



Interfaces

Interface	Connector	Purpose
BANT0	Nex10	Backhaul TX/RX RF I/O
BANT1	Nex10	Backhaul RX only RF Input
ANT0	Nex10	Access TX/RX RF I/O
ANT1	Nex10	Access TX/RX RF I/O
RFO	Nex10	TX/RX RF I/O to eNB
RF1	Nex10	TX/RX RF I/O to eNB
DATA	RJ-45	Ethernet Data I/O to eNB
MGT	RJ-45	Ethernet Config port
ACIN	Custom	90V-240VAC power supply
DCIN	Custom	-48VDC



Electrical

Specification	Description
LTE Bandwidths	5,10 & 20 MHz
Backhaul Carrier Aggregation	2CC Interband up to 40MHz
eNodeB Tx power	Up to +37 dBm (per port)
eNodeB MIMO	Up to 2Tx / 2Rx
UE Tx power	Up to +23dBm
UE MIMO	1Tx / 2Rx
Max DL Throughput (PHY)	150Mbps (20MHz) 225Mbps (20 + 10 MHz) 300Mbps (20 + 20MHz)
Antenna Isolation (Backhaul - Access)	>45dB required
Remote Operations and Maintenance	NetConf
AC Input	150W 90-254 V~ (AC), 47-63 Hz
DC Input	-48V DC

Environmental

Specification	Description
Operating temperature	-40° to 55° C
Operating humidity	5% - 100% non-condensing
Ingress protection (rain/dust)	IP65

Physical

Specification	Description
Size	20" x 10" x 6"
Weight	14.8 kg (without bracket)
Mounting	Pole or wall mounted
Safety	UL 62368
Hazardous materials	RoHS
Certifications	FCC Part 15 (US) FCC Part 24 (US) FCC Part 27 (US)

LTE Bands and Ordering Information

SKU	Access LTE Band	Backhaul LTE Band Combinations
KR5192	B2	B2 + B12/13/17
KR5181	B3	B3 + B8/20/28
KR5261	B7	B7 + B8/20/28

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