

## 51483-C theory of operation

51483-C CELLULAR OVER FIBER CABLE CELL EXTENDER UNIT, manufactured by AeroComm, Inc. consists of a pair of units called Server and Donor. Its purpose is to extend the range of Cellular RF signal to inaccessible places where the RF signal can not penetrate and where the coax cable is not practical or too expensive.

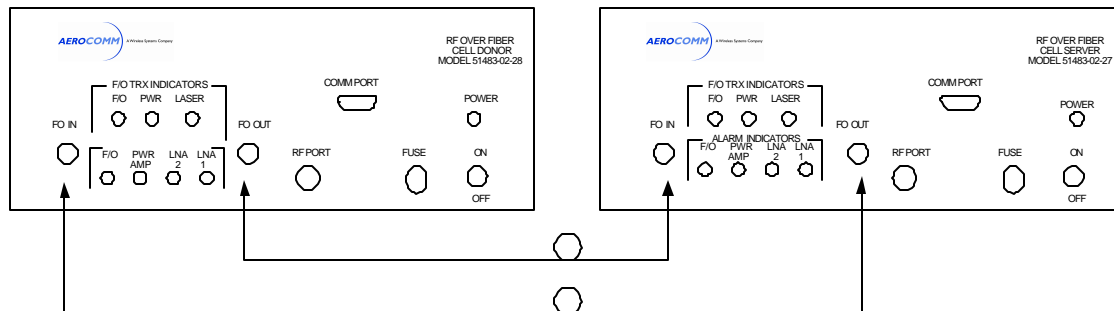
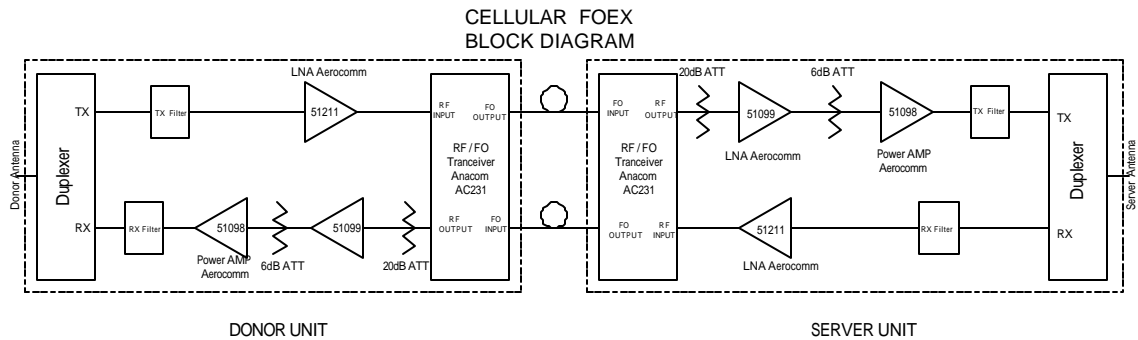
The unit operates by converting the RF signal to an optical signal, so that it can be transmitted on single mode cable over long distances then converted back to RF signal for transmission. Both the Server and Donor units are transceivers capable of receiving and transmitting signals at the same time. It helps eliminate costly repeaters to boost signal loss. The frequency of operation is 824-849 MHz for uplink and 869-894 MHz for downlink frequencies. The units are in either NEMA wall mount enclosures or 19" standard rack mount enclosures.

There is a visual alarm indication LEDs to indicate internal or fiber disconnect failures.

The unit operates on 110 volts AC; it has an internal power supply for the active modules.

The connections to the units are the following; FC/APC connectors for the single mode fiber input and output. Also "N" type connectors for coax cable connection to the antenna.

Below you will see a block diagram and specification data for the unit.



<i>Service: CELLULAR</i>		
Frequency Range:	<u>Uplink</u> : 824-849 MHz	<u>Downlink</u> : 869-894 MHz
Noise Figure:	6.3 dB Typical	7.0dB Typical
Gain:	51 dB Min.	51dB Min.
Delay:	5usec/Km	5usec/Km
Output Power:	+22 dBm	+23 dBm
Input Power (No Damage):	-30 dBm Max	-30 dBm Max
Power Consumption:	2 A @ 110 VAC Per Donor/Server	
Weight:	21 lbs.	
Temperature:	-25C to + 75 C	
Size:	19" Rack Mount Unit, 4U (7"H) x 18"	
RF Connectors:	N-Female	
Fiber Optic Connectors:	FC/APC	
Cable:	9/125 mm Single Mode FO Cable	
Enclosure:	19" Rack Mount	