

55-227901 is a UHF Band Selective Line Amplifier for use in the frequency range 489.5 – 499.9MHz.

Please refer to the System Diagram which identifies the component positions thus (x).

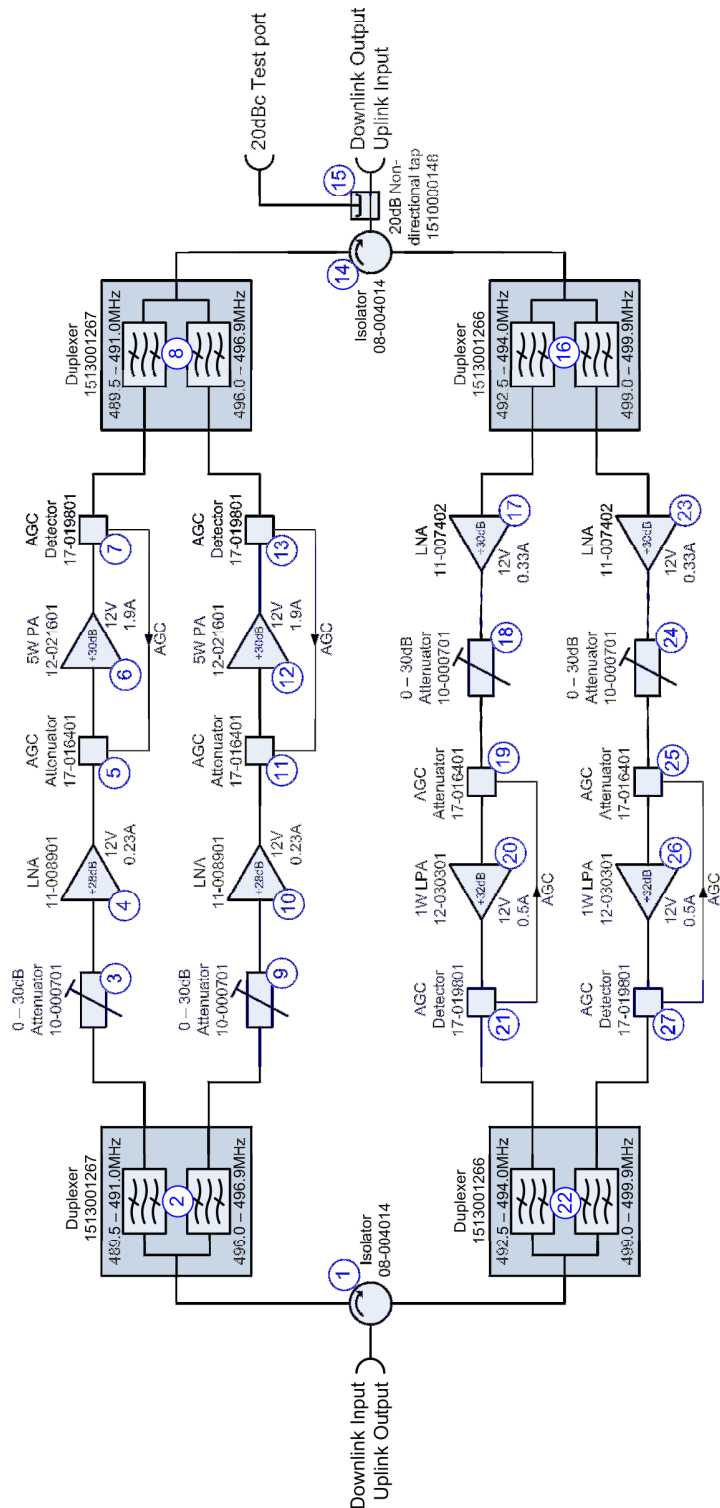
### Downlink path

The downlink input signal from the preceeding base station feeding radiating cable enters the donor input port and is fed to a circulator (1) which directs the transmission into the downlink duplexer (2). The downlink duplexer filters the signal to provide 2 downlink outputs to the amplifier chains. Each amplifier chain consists of a similar line up of components. The filtered downlink is fed via an adjustable attenuator (3 or 9) and into a low noise amplifier (4 or 10) which provides 28dB gain. The amplified signal is then fed via a diode attenuator module (5 or 11) which forms part of the ALC feedback control loop. The ALC attenuator then feeds the signal into an output amplifier (6 or 12) which provides 30dB gain and +37dBm output power. The downlink signal then passes through the ALC detector (7 or 13), the ALC detector ensures that should the output power level reach a predetermined threshold, a control voltage is fed back to the ALC attenuator to reduce the input drive level to prevent overload of the output amplifier. Following the detector the two downlink paths are recombined in the output duplexer (8) before passing through the server port circulator (14) and the 20dB signal monitor tapper (15) and out to the server radiating cable.

### Uplink path

The uplink input signal from the mobile feeding radiating cable enters the server input port and is fed via a 20dB signal monitor tapper (15) to a circulator (14) which directs the transmission into the uplink duplexer (16). The uplink duplexer filters the signal to provide 2 uplink outputs to the amplifier chains. Each amplifier chain consists of a similar line up of components. The filtered uplink is fed via a low noise amplifier (17 or 23) which provides 30dB gain and into an adjustable attenuator (18 or 24). The signal is then fed via a diode attenuator module (19 or 25) which forms part of the ALC feedback control loop. The ALC attenuator then feeds the signal into an output amplifier (20 or 26) which provides 32dB gain and +30dBm output power. The uplink signal then passes through the ALC detector (21 or 27), the ALC detector ensures that should the output power level reach a predetermined threshold, a control voltage is fed back to the ALC attenuator to reduce the input drive level to prevent overload of the output amplifier. Following the detector the two downlink paths are recombined in the output duplexer (8) before passing through the donor port circulator (1) and out to the base station fed radiating cable.

## System Diagram



55-227901 RF system diagram  
With component numbering

|                                                                                                                                                                                                                        |               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Date: 18 February 2014                                                                                                                                                                                                 | Not to Scale  |
| © Axell Wireless 2014                                                                                                                                                                                                  | Drawn by: AJS |
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| Aerial House<br>Ashenridge Road<br>Chesham<br>Buckinghamshire<br>HP5 2QD United Kingdom<br>Telephone: +44 (0) 1494 777000<br>Facsimile: +44 (0) 1494 777002<br>E-Mail: info@axellwireless.com<br>www.axellwireless.com | A4            |
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