

1.0 TVWS Quickstart

This guide is intended to provide a very quick introduction to establishing an RF link between an RDL-3000 UHF sector and subscriber. The units have been shipped mostly pre-configured, with only some site-specific parameters remaining.

As shipped, the units are configured as follows:

Radio Mode	Radio MAC	Radio S/N	Management IP
Sector Controller	00:09:02:14:B4:FB	182PC13030002	192.168.45.64
Subscriber	00:09:02:14:B5:02	182PC13030003	192.168.45.65

1.1 Physical Connectivity

- Before powering up the radios, make sure to connect each radio's RF ports to the other radio's corresponding port. Make sure there is at least 60dBm of attenuation inline.
- Connect each radio to the output port of the PoE injector via Ethernet cable.
- Connect the sector controller PoE injector's input port into your local area network, ensuring that there is a valid route through your network to the internet (for WSDB access).

1.2 Configuring network connectivity

- Configure your PC's network interface to an IP address within the radios' subnet (e.g. 192.168.45.100 / 255.255.255.0).
- Connect your PC to the sector controller's PoE injector input port, and verify ping connectivity to the sector's IP address (listed above).
- Open Internet Explorer and browse to the sector's IP address. Note that if you're using Internet Explorer 10, you'll need to place your browser into compatibility mode.
 - To place IE10 in compatibility mode, browse to the page you're trying to view, then click the small "broken page" icon next to the address bar's "refresh" button.



- The login credentials are "admin"/"admin".
- The next step is to configure the radio's internet access. To do this, you need to provide your network's default gateway and DNS server IP addresses, accessed in the System Configuration menu.



Basic Ethernet Configuration	
IP Address	192.168.45.64
IP Subnet Mask	255.255.255.0
Default Gateway Address	
DNS Server 1	
DNS Server 2	
DHCP Enable	<input type="checkbox"/>

- - DNS Server 2 is optional.
 - If your DHCP server provides this information, you can use DHCP instead of providing this information yourself. However, you'll need some way to determine what IP address your DHCP server has provided the radio. Your IT department should be able to help out there.
- Press "Apply and Save All" to activate your changes. If you've changed your IP address (or activated DHCP) you'll need to browse to the radio's new IP address, as these changes take effect immediately after activation.
- That's it for the sector controller. Repeat these steps on the subscriber station, then proceed to section 1.2.

1.3 Configuring WSDB Access – Sector Controller

- Configure the radio's registration information as appropriate to your location.
- If the unit has a GPS antenna connected and has a fix on a sufficient number of satellites, the "Use GPS" checkbox will be enabled. This will automatically populate the Lat/Long fields.
 - You can view information on the current GPS status in the "System Status" menu. Click on the "GPS Status" link to open a new window.
- Make sure to "Apply and Save" your changes.
- Once you have everything configured, wait 60 seconds and then navigate to the "WSDB Status" menu. Check to make sure that "Server Connectivity Status" shows "SUCCESS". If so, you should see a color-coded indication of available channels in the bottom half of the page.
 - If "Server Connectivity Status" shows FAILURE, check the system log for an indication of the reason for the failure.
- In the displayed channel list, red channels are unavailable for use at your location, blue channels are available, and the green one is the currently selected channel.
- Navigate to the "Wireless" page, and select a non-red channel from the dropdown list.



Wireless Configuration

Basic Wireless Configuration

System Mode	PMP SC	▼
Channel Size [MHz]	6	▼
RF Frequency [MHz]	515	Channel
Tx Power[dBm]	0	

- <Select>
- 14 [473 MHz]
- 15 [479 MHz]
- 16 [485 MHz]
- 17 [491 MHz]
- 18 [497 MHz]
- 19 [503 MHz]
- 20 [509 MHz]
- 21 [515 MHz]
- 22 [521 MHz]
- 23 [527 MHz]
- 24 [533 MHz]

1.4 Configuring WSDB Access – Subscriber

- Repeat the same steps as in the previous section, making sure to select the same channel as was selected in the sector controller.



2.0 Hardware Testing / RDL-3000 Backup Unit

In regards to third Hardware Testing & Backup unit (S/N 160PC13030002, MAC 00-09-02-14-B5-04, IP 192.168.45.69)

- Note about debug/engineering mode which is provided to FCC for testing purposes, but is not provided to end customers
- Before applying POE power, ensure all ports are terminated into a 50-ohm load
- Login to GUI using MSIE web browser using admin/admin
- select desired power and center frequency
- select the desired RF1, RF2 or RF1&RF2 configuration
- Click Apply

For Part 15, Subpart H tests, continuous transmit mode is required. To do this:

- DUT must be in SC (Sector Controller) mode
- Using Windows CMD window or a Telnet program, telnet into the DUT (“telnet 192.168.45.69” for example) and login as debug/debug
- Enter command: “dbg txloop 1”
- Before adjusting other system parameters (such as frequency) from the GUI, disable continuous Tx mode with “dbg txloop 0”

Note that in the customer software the following restrictions are made:

- Channels 36, 37, and 38 are disallowed
- Tx power for all channels is limited to +18dBm, except channels 35 and 39 which are limited to +16dBm
- On channel 35, the center frequency is moved down by 0.5MHz
- On channel 39, the center frequency is moved up by 0.5MHz

