CPRI and OBSAI over CWDM Fronthaul to Cell Towers

This application illustrates how to transport four **Common Public Radio Interface (CPRI)** channels over one fiber fronthaul link using Coarse Wavelength Division Multiplexing (CWDM).

The CTC Union FRM220 CWDM MUX/DEMUX, OADM and 3R Transponder enable CWDM connectivity in a C-RAN (Cloud-Radio Access Network) over a fronthaul fiber link between Base Band Units (BBU) and Remote Radio Heads (RRH) located at two different cell towers.

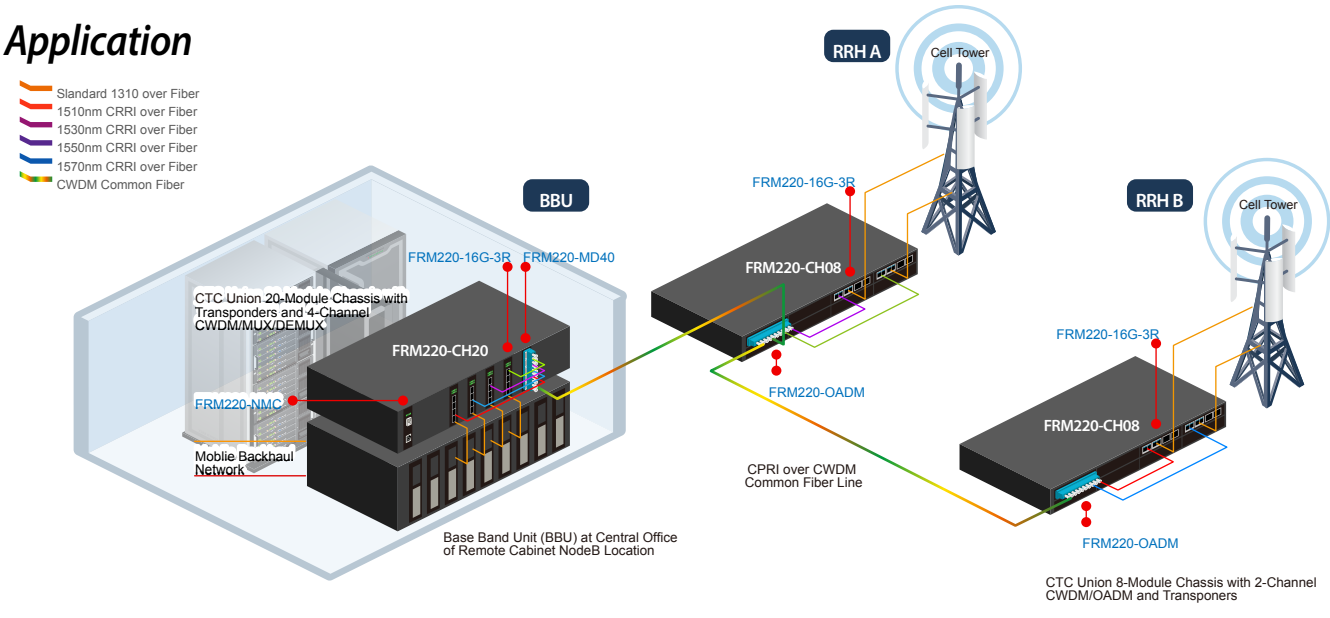
The BBU is located at a BBU hotel or at a Central Office location. The fiber ports on line cards in the BBU support standard 1310 wavelengths. Fiber patch cables connect the BBU line cards to FRM220 3R transponders installed in a high-density FRM220-CH20 chassis. The four FRM220 3R transponders convert the fiber with standard wavelengths to CWDM wavelengths (channels) with Small Form Pluggable (SFP) transceivers. Standard wavelength SFP and CWDM wavelength SFP are installed in each of the FRM220 3R transponders. The CWDM SFP support specific wavelengths to enable connectivity to the matching channel ports on the FRM220 CWDM MUX/DEMUX with fiber patch cables (shown in different colors to represent the CWDM wavelengths). CTC Union CWDM transceivers have color-coded latch handles for easy identification. The CWDM MUX/DEMUX multiplexes the wavelengths that transport the four CPRI channels over the CWDM Common Fiber Line (fronthaul).

At the first cell tower, a FRM220-CH08 chassis with a two-channel FRM220 CWDM Add/Drop Multiplexer and FRM220 3R Transponders is deployed. The FRM220 CWDM/AD Add/Drop Multiplexer filters out the 1550nm and 1570nm CWDM channels to connect the CPRI data to the Remote Radio Heads in the cell tower. Fiber patch cables (shown in purple and green to represent the CWDM wavelengths) connect the channel ports on the FRM220 CWDM add/drop multiplexer to FRM220 3R Transponders that convert the fiber with CWDM wavelengths back to standard 1310 wavelengths. The standard wavelength fiber connects to the two Remote Radio Heads at the cell tower.

The 1510nm and 1530nm CWDM channels pass through the Add/Drop MUX and travel over the CWDM Common Line to the second cell tower.

At the second cell tower, another FRM220-CH08 chassis with FRM220 two-channel CWDM add/drop Multiplexer and FRM220 3R Transponders is deployed. The FRM22 CWDM add/drop Multiplexer filters out the 1510nm and 1530nm CWDM channels to connect the CPRI data to the Remote Radio Heads at the cell tower.

Application



Products

iAccess Multi-Service Platform
FRM220-CH20 & CH08 & CH04A

16Gbps 3R Multi-rate Transponder
FRM220-16G-3R

4 and 8 Channel CWDM Mux/DeMUX
CWDM (FRM220 Mux/DeMux)

Optical Add-Drop Multiplexer
FRM220-OADM

• The specification and pictures are subject to change without notice.

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