

**In-Building Radio Installation for 4G LTE with STARVIEW solution**

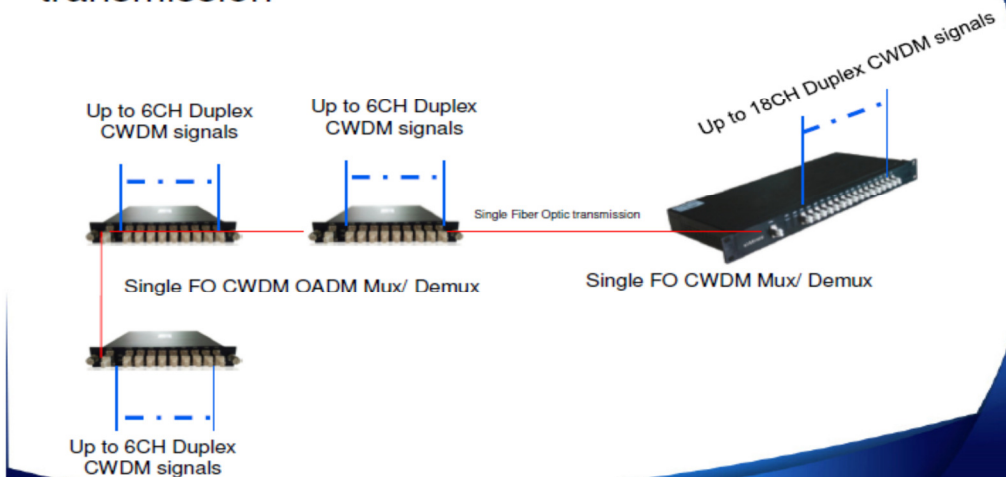
With the popularity of smart phones, mobile operators worldwide are seeking new ways to improve connectivity and speed to their mobile base stations. 4G LTE (4<sup>th</sup> Generation Long-Term Evolution) technology allows high speed data rate to be transferred from the Base Station (BBU) to the Radio Station (RRU) via fiber optic cable, allowing 4G LTE enabled smart phones to transfer high bit data rate for communication.

STARMUX (Starview CWDM Multiplexer/ Demultiplexer), which is using CWDM (Coarse Wavelength Division Multiplexing) technology, allows multiple high speed 4G LTE signal (usually CPRI (Common Public Radio Interface)/ OBSAI (Open Base Station Architecture Initiative)) to be transported via fiber optic cable with point to point or linear add-drop topology.

**Single Fiber CWDM point to point transmission**



**Single Fiber CWDM Optical Add and Drop transmission**



The key features of STARMUX are:

1. Single fiber transmission able to multiplex 18 channels of CWDM signal via single fiber core
2. Available with single fiber CWDM OADM (Optical Add and Drop Multiplexer) with various channel options (1/ 3/ 4/ 6/ 9 CH)



With STARMUX, mobile operators will enjoy the following benefits:

1. Save cost and easy to deploy
2. No trained engineers required
3. Fast delivery lead time
4. Compact CWDM unit to be put into outdoor enclosure
5. Fully passive solution

The STARMUX solution is a plug-and-play configuration, with no network management, power nor maintenance required. The mobile operator can connect the STARMUX directly to the corresponding CWDM wavelengths of the device, and the transmission will be directly from the BBU and the RRU. STARMUX is capable of multiplexing up to 18 Channels of high bit rate data via a single fiber optic core transmission.

Besides STARMUX, Starview International also offers the CWDM transceiver modules to interwork with the major equipment vendors, such as SFP, SFP+ and XFP modules. The key advantages of the Starview Transceiver modules are

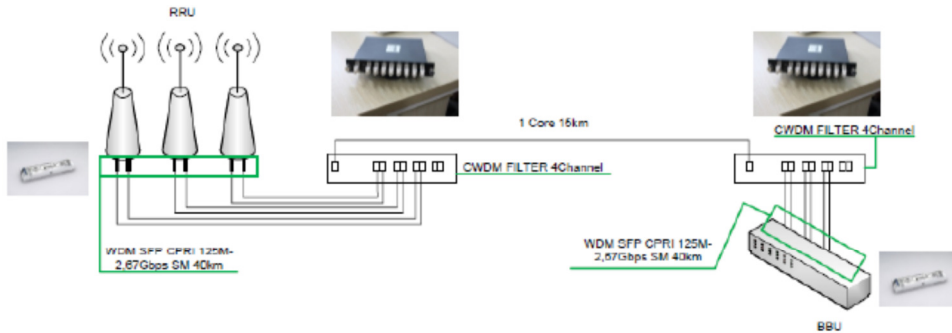
1. Re-programmable to work with the major equipment vendors such as Huawei, Ericsson, ZTE, CISCO and etc.
2. Multi-rate to support 18 Channels CWDM wavelengths with distance up to 80km
3. Available with CPRI/ OBSAI data rates
4. Digital Diagnostic Monitoring (DDM) capability



With the Starview solution, mobile operators will enjoy greater savings especially on CAPEX (Capital Expenses) and OPEX (Operational Expenses). On CAPEX savings, the equipment are competitively priced. On OPEX savings, there is no maintenance cost on the STARMUX products.

Below examples show the typical mobile operator connections in their 4G LTE radio network:

## Applications – CWDM with single fiber connection



## Applications – CWDM with 2 x OADM fiber connections

