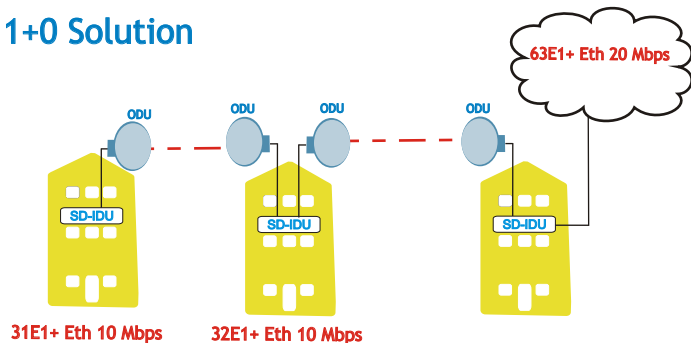
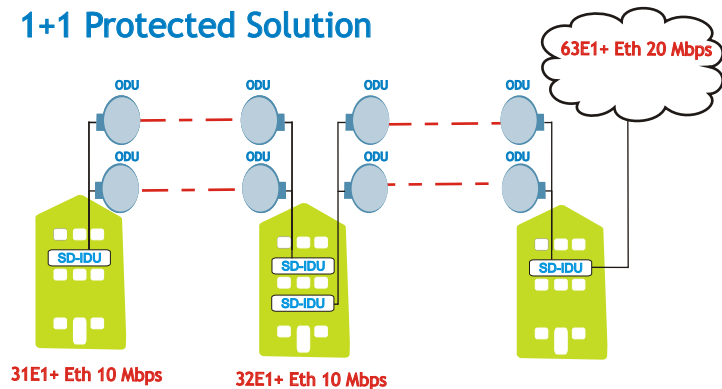


■ CFQ 63E1 + Eth

1+0 Solution



1+1 Protected Solution



CFQ 63E1 + Eth link includes:

- 1+0 solution
 - 2 x CFQ-IDU 1+0
 - 2 x CFQ-ODU xxGHz
- 1+1 solution
 - 2 x CFQ-IDU 1+1
 - 4 x CFQ-ODU xxGHz
- ODU available in frequency bands:
 - 6; 7; 8; 11; 13; 15; 18; 23; 38 Ghz
- Available antennas:
 - 30cm, 60cm, 120cm, 180cm, 240cm, 320cm

Key Features

- Provides wireless link with E1 or Ethernet traffic
- Protected solution for full redundancy
- Increased capacity solution available by upgrading only modem and radio

1+1 Solution Description

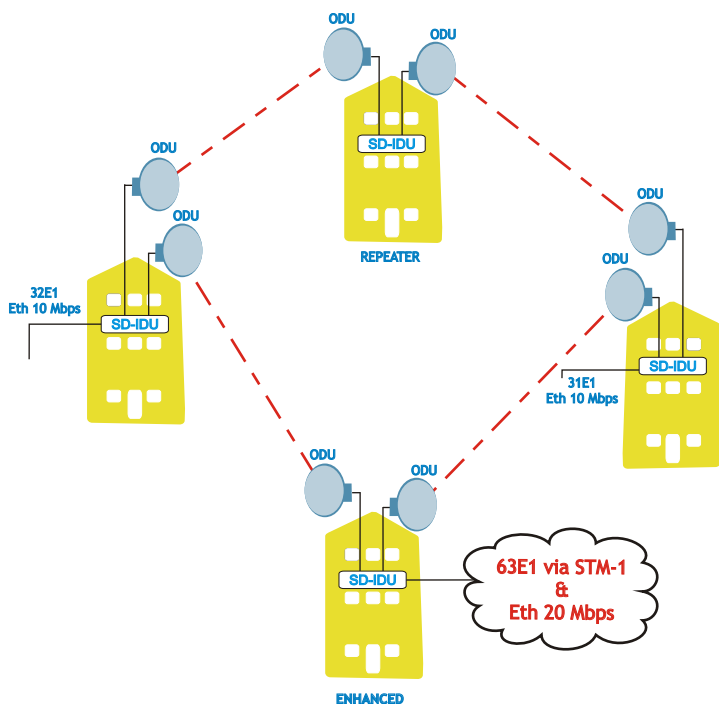
- Frequency diversity mode:
 - The link between each pair of modems is the same, providing complete redundancy
 - This arrangement requires bandwidth for both links and non-interference between the links, but it provides hitless receive and transmit switching
 - The CFQ-SD-IDU supports Frequency diversity: two frequencies are used
 - In either case, the proprietary framer chooses the best, or error-free, data stream
- Space diversity or HSB mode:
 - One ODU at each location transmits to both opposite ODUs;
 - Does not require the extra bandwidth or interference protection of diversity mode;
 - Provides hitless receive switching and hot standby
 - CFQ-SD-IDU automatically switches transmit ODU upon appropriate ODU alarm or ODU interface error, minimizing transmit outage time
 - The power supply, ODU, IF/telemetry and modem are protected

■ CFQ-SD-IDU (63E1, 1+0)



Product Name	Code
CFQ-IDU (63E1,1+0)	Q0G63E01
CFQ-IDU (63E1,1+1)	Q0G63E11
CFQ-ODU 23GHz, 8-155Mbps, 1008MHz 51HA	Q23RFM51HA
22GHz, 30cm antenna, Comhat v 03 HAA2303	C22A3003

■ CFQ Ring STM-1, 63E1



CFQ Ring STM-1, 63E1 link includes:

- 2 x CFQ-IDU 1+1 STM-1
- 2 x CFQ-ODU xxGHz
- ODU available in frequency bands:
6; 7; 8; 11; 13; 15; 18; 23; 38 GHz
- Available antennas:
30cm, 60cm, 120cm, 180cm, 240cm, 320cm

Key Features

- Protected solution
- E1, STM-1 and Ethernet connectivity

Description

■ CFQ-SD-IDU provides the ability to demultiplex 63 x E1 PDH signals from SDH signal. The demultiplexed E1s are routed via crosspoint switch to the east modem, west modem or front panel.

The STM-1 Mux/Demux feature requires an Enhanced Standard IO Module.

■ Instead of sending data in both directions around the ring, the ring is divided into two parts - the active ring and the protected ring. During normal operation, data only flows in a counter-clockwise direction around the ring.

■ Since all of the data is flowing in the active ring, the protection ring is idle. However, if one of the links were to go down the protection ring comes into service. CFQ-SD-IDU on the east side of the link outage automatically switches the data from the east modem to go out on the west modem. The data then circulates around the ring until it reaches the other side of the break, where CFQ-SD-IDU patches the data back in, restoring the ring.

■ CFQ-SD-IDU (STM-1opt, 16E1 + Eth, Enhanced1+1)

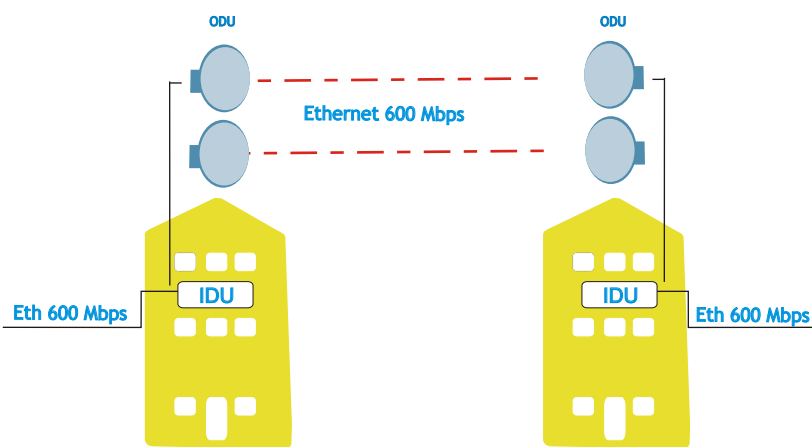


Product Name	Code
CFQ-IDU (STM-1 opt, 16E1 + Eth, M/D, 1+1, Enh)	Q0GES011
CFQ-IDU (32E1, 1+1)	Q0G32E11
CFQ-ODU 23GHz, 8-155Mbps, 1008MHz 51HA	Q23RFM51HA
22GHz, 30cm antenna, Comhat v 03 HAA2303	C22A3003

SAF CFQ Backhaul Solutions



CFQ 600 Mbps Wideband



CFQ 600 Mbps 2+0 link includes:

- 2 x CFQ-IDU 1+1 WB GigE
- 4 x CFQ-ODU xxGHz WB
- ODU available in frequency bands: 6; 7; 8; 11; 13; 15; 18; 23; 38 Ghz

- Available antennas: 30cm, 60cm, 120cm, 180cm, 240cm, 320cm
The solution is available with Dual-polarization antennas and using Single-polarization antenna with a coupler

Key features

- Increased capacity
- Besides Ethernet available with E1 and STM-1 connectivity
- Also 3+0 and 4+0 solutions available

Ethernet feature summary:

- 10/100/1000Base-T Half/Full duplex auto-detect
- TP auto MDIX TX/RX swap
- MAC addresses table - 4096 bytes
- Store and forward architecture, QoS
- Aging function

Decription

2+0 East/East mode:

- Ethernet capacity up to 600 Mbps by using 2x56 MHz channels;
- Protected system - loss of a link reduces bandwidth only by 50%;
- Optional E1 Expansion IO module (Q0GM2101) for E1 connectivity.

4+0 East/East mode:

- Ethernet capacity up to 600 Mbps by using 4x28 MHz channels;
- Protected system - loss of a link reduces bandwidth only by 25%.

CFQ-SD-IDU (2E1,GigE,1+1 WB)

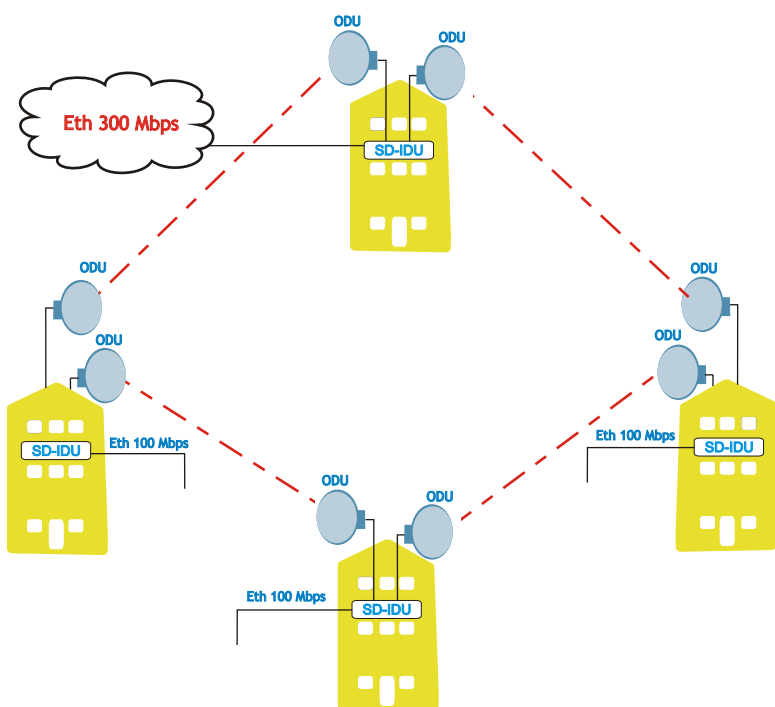


Product Name	Code
CFQ-IDU (2E1,GigE,1+1,WB)	Q0G3G011
CFQ-ODU 18GHz WB, 310 Mbps, dupl xxxx Mhz	18RFW01HA
18GHz, 30cm antenna, Comhat HAA1803	C18A3002

SAF CFQ Backhaul Solutions



CFQ Ring 300 Mbps Wideband



CFQ Ring 300 Mbps link includes:

- 2 x CFQ-IDU 1+1 WB GigE
- 2 x CFQ-ODU xxGHz WB
- ODU available in frequency bands:
6; 7; 8; 11; 13; 15; 18; 23; 38 Ghz
- Available antennas:
30 cm, 60cm, 120cm, 180cm, 240cm, 320cm

Key Features

- Increased capacity
- Protected solution
- E1, STM-1 and Ethernet connectivity
- Additional 21E1 can be added using 21E1 expansion module
- Up to 63E1 via STM-1 adding STM-1 electrical or optical modules

Description

- **Connecting Ethernet Traffic in Ring:**
Spanning Tree Protocol (STP) keeps Ethernet loops from forming in a ring architecture. Without STP, loops would flood a network with packets. STP prevents loops by creating an artificial network break. In the event of a network outage, STP automatically removes the artificial break, restoring connectivity.
- Instead of sending data in both directions around the ring, the ring is divided into two parts the active ring and the protected ring. During normal operation, data only flows in a counter-clockwise direction around the ring.
- Since all of the data is flowing in the active ring, the protection ring is idle. However, if one of the links were to go down the protection ring comes into service. CFQ-SD-IDU on the east side of the link outage automatically switches the data that was supposed to go out on the east modem to go out on the west modem. The data then circulates around the ring until it reaches the other side of the break, where CFQ-SD-IDU patches the data back in, restoring the ring.

CFQ-SD-IDU (2E1, GigE, 1+1 WB)



Product Name	Code
CFQ-IDU (2E1, GigE, 1+1, WB)	Q0G3G011
CFQ-ODU 18GHz WB, 310 Mbps, dupl xxxx Mhz	18RFW01HA
18GHz, 30cm antenna, Comhat HAA1803	C18A3002