Multi-Service Platform
- FRM220

The FRM220 series is a multi-service platform chassis, which provides a reliable solution of high density media converter modules for applications such as telecom operator, enterprise, long haul transmission and factory automation. All of critical components of FRM220-CH20 and FRM220-CH08 chassis such as power modules, fans, management module and interface cards are hot swappable, allowing online field replacement. FRM220 series is offered in three chassis densities, a 2U 20-slot (FRM220-CH20), a 1U 8-slot (FRM220-CH08), and a 1U 4-slot (FRM220-CH04A). FRM220-CH04A utilizes fixed type AC, DC power built-in. The available power options are built-in AC, DC power or built-in AC+DC, AC+AC, DC+DC redundant power.

All FRM220/FRM220A series cards are hot-swappable and can be installed in a 20 slots (2U), or 8 slots (1U) rack-mountable chassis with any combination of redundant hot swappable AC, 24VDC or 48VDC power supplies, providing a scalable solution that is space-efficient and cost-effective. The cards can also be mounted in 4 slots, 2 slots, or 1 slot standalone housings with fixed AC/DC powered chassis.

The cards of FRM220/FRM220A series provide telecommunication solutions for most applications. CTC union offers a universal and cost-efficient transmission series for a variety of fiber optic technologies (Multimode, Single mode, WDM, CWDM) starting from converters and switches, to modems and extending to intelligent voice/data multiplexer systems. The products are designed as cards in combination with various chassis types. The concept is to ensure an extremely variable mixture of products at low storage costs for spares.

Features

- Interface cards are hot swappable
- Supports AC/DC power modules hot swappable and power redundancy (CH20 & CH08)
- Supports fixed type AC/DC power built-in and power redundancy (CH04A)
- Supports DB9 console port for local management (CH02M, CH01M)
- Telnet, Web, Console, SNMP management via NMC Card (CH20, CH08, CH04A, CH02/SMT, CH02/NMC)
- Two alarm relay contacts for critical events warnings (CH20/CH08)
- Chassis backplane consists of passive components (CH20/CH08)
- Fanless (CH02, CH01, CH01M)
- Cooling Fan (CH20, CH08, CH04A, CH02M, CH02/SMT, CH02/NMC)

Specifications

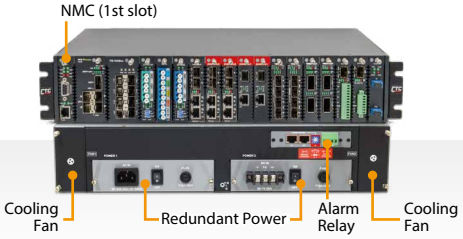
Power Input	AC	100-240VAC (CH20/CH08/CH04A/CH02/CH01)
	DC24	18-36VDC (CH20/CH08)
	DC48	36-75VDC (CH20/CH08)
	DC	18-60VDC (CH04A, CH02, CH01)
	Adapter Type (CH01)	Input Voltage 100-240VAC 50/60Hz
		Output Voltage 12VDC 1A
Weight	5.2kg (CH20), 3.5kg (CH08), 1.5kg (CH04A-AC/DC), 1.9kg (CH04A-AD)	
	1.3kg (CH02M), 1kg (CH02/NMC), 1.46kg (CH02/SMT)	
	0.5kg (CH01 Adapter Type), 0.8kg (CH01 Power Built-in Type), 1.2kg (CH01M)	

Temperature	Operationg 0-60C, Storage -10~70C
Humidity	5%~90% non-condensing
Certification	FCC Class A, VCCI Class A, CE
Safety	UL60950-1 (FRM220-CH20)

Chassis Overview

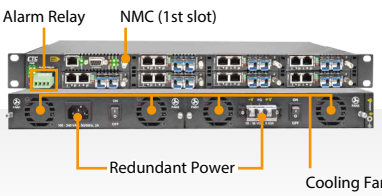
■ Rackmount Chassis

CH20 (2U 19" 20 Slots)



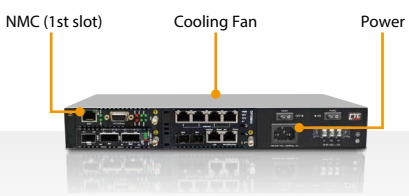
- DIM: 303(D) x 438 (W) x 88(H)mm

CH08 (1U 19" 8 Slots)



- DIM: 310(D) x 440(W) x 44(H)mm

CH04A (1U 4 Slots)



- Rack mount kits uses (A) type
- DIM: 170(D) x 310(W) x 44.7(H)mm

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

Ordering Information

Model Name	Description
CH20	
FRM220-CH20	2U 19", 20 slots rack mount chassis with cooling fan and rack mounting kit
FRM220-CH20 (HS)	2U 19", 20 slots rack mount chassis with high speed cooling fan and rack mounting kit
Power Module	
FRM220-AC	Chassis Power module 100~240 VAC, IEC connector, 200W
FRM220-DC24	Chassis Power module 18~36 VDC, 3 pin terminal block, 200W
FRM220-DC48	Chassis Power module 36~72 VDC, 3 pin terminal block, 200W
FRM220-AC (HP)	Chassis power module 90 ~ 264 VAC, IEC connector, 300W
FRM220-DC48 (HP)	Chassis power module 36 ~ 75 VDC, 3 pin terminal block, 300W
Note: When high power dissipation cards are placed in CH20 chassis, we recommend choosing the 300W power module option to ensure adequate power and avoid any performance degradation.	
Cooling Fan	
FRM220-FNL	Chassis cooling fan left side module
FRM220-FNR	Chassis cooling fan right side module
FRM220-HFNL	Chassis high speed cooling fan left side module
FRM220-HFNR	Chassis high speed cooling fan right side module
CH08	
FRM220-CH08	1U 8-slot Rackmount Chassis
FRM220-CH08-AC	Chassis Power module 100~240 VAC, IEC connector, 180W
FRM220-CH08-DC24	Chassis Power module 18~36 VDC, 3 pin terminal block, 200W
FRM220-CH08-DC48	Chassis Power module 36~72 VDC, 3 pin terminal block, 200W
CH04	
FRM220-CH04A-AC	4-slot Chassis with built-in AC Power, 65W
FRM220-CH04A-DC	4-slot Chassis with built-in DC Power, 50W
FRM220-CH04A-AD	4-slot Chassis with built-in AC/65W+DC/50W

■ Standalone Chassis

▪ 1-Slot Chassis

CH01 (Adapter Type)

▪ DIM: 139 (D) x 23.2(W) x 88(H)mm

CH01 (Power Built-in)

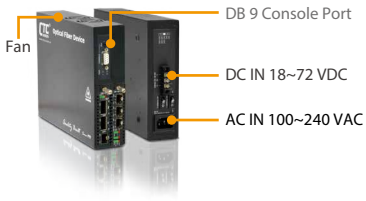
▪ DIM: 180(D) x 30(W) x 135(H)mm

CH01M (Power Built-in)

▪ DIM: 185(D) x 30(W) x 135(H)mm

▪ 2-Slot Chassis

CH02M (Power Built-in)

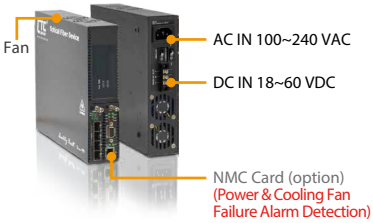


▪ DIM: 219.4(D) x 44.5(W) x 167.4(H)mm
▪ Rack mount kits uses (B) type

CH02/NMC (Power Built-in)

▪ DIM: 219.4(D) x 44.5(W) x 167.4(H)mm
▪ Rack mount kits uses (B) type

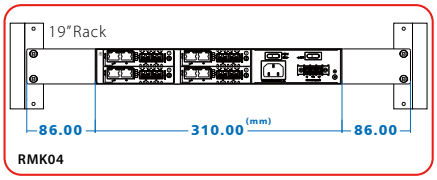
CH02/SMT (Power Built-in)



▪ DIM: 220(D) x 44.7(W) x 205(H)mm
▪ Rack mount kits uses (C) type

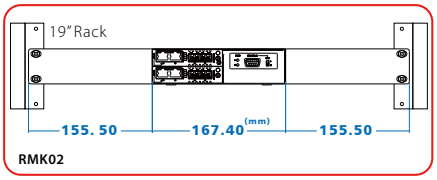
■ Rack Mount Kits (optional)

(A)



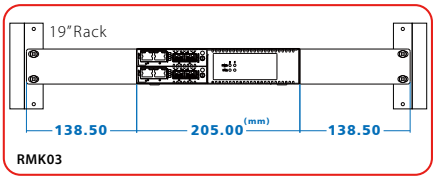
RMK04

(B)



RMK02

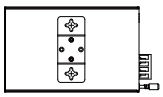
(C)



RMK03

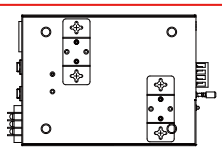
■ Wall Mount Kits (optional)

Adapter Type
CH01



WMK01

Power Built-in Type
CH01-AC/DC/AD,
CH01M
CH02M,
CH02/NMC,
CH02/SMT



WMK01

Remark:
Adapter Type uses one wall mount kit, Power built-in Type uses two wall mount kits.

Ordering Information

Model Name	Description
FRM220-CH01	1-slot chassis with 100 ~240VAC to 12VDC adapter (12W) , fanless
FRM220-CH01-AC	1-slot chassis with 100 ~240VAC (12W), fanless
FRM220-CH01-DC	1-slot chassis with 18 ~60VDC (12W), fanless
FRM220-CH01-AD	1-slot chassis with AC/12W+DC/12W, fanless
FRM220-CH01M-AC	1-slot chassis with console port and 100 ~240VAC (12W), fanless
FRM220-CH01M-DC	1-slot chassis with console port and 18 ~60VDC (12W), fanless
FRM220-CH01M-AD	1-slot chassis with console port and AC/12W+DC/12W, fanless
FRM220-CH02M-AC	2-slot chassis with console port and 100 ~240VAC (30W), with fan
FRM220-CH02M-DC	2-slot chassis with console port and 18 ~60VDC (30W), with fan
FRM220-CH02M-AD	2-slot chassis with console port and AC/30W+DC/30W, with fan
FRM220-CH02/NMC-AC	2-slot chassis with fan, managed via optional NMC card and with 100~240VAC (30W) power
FRM220-CH02/NMC-DC	2-slot chassis with fan, managed via optional NMC card and with 18~60VDC (30W) power
FRM220-CH02/NMC-AD	2-slot chassis with fan, managed via optional NMC card and with AC/30W+DC/30W power
FRM220-CH02/SMT-AC	2-slot chassis with fan, managed via optional NMC card and with 100~240VAC (30W) power plus fan/power alarm detection
FRM220-CH02/SMT-DC	2-slot chassis with fan, managed via optional NMC card and with 18~60VDC (30W) power plus fan/power alarm detection
FRM220-CH02/SMT-AD	2-slot chassis with fan, managed via optional NMC card and with AC/30W+DC/30W power plus fan/power alarm detection

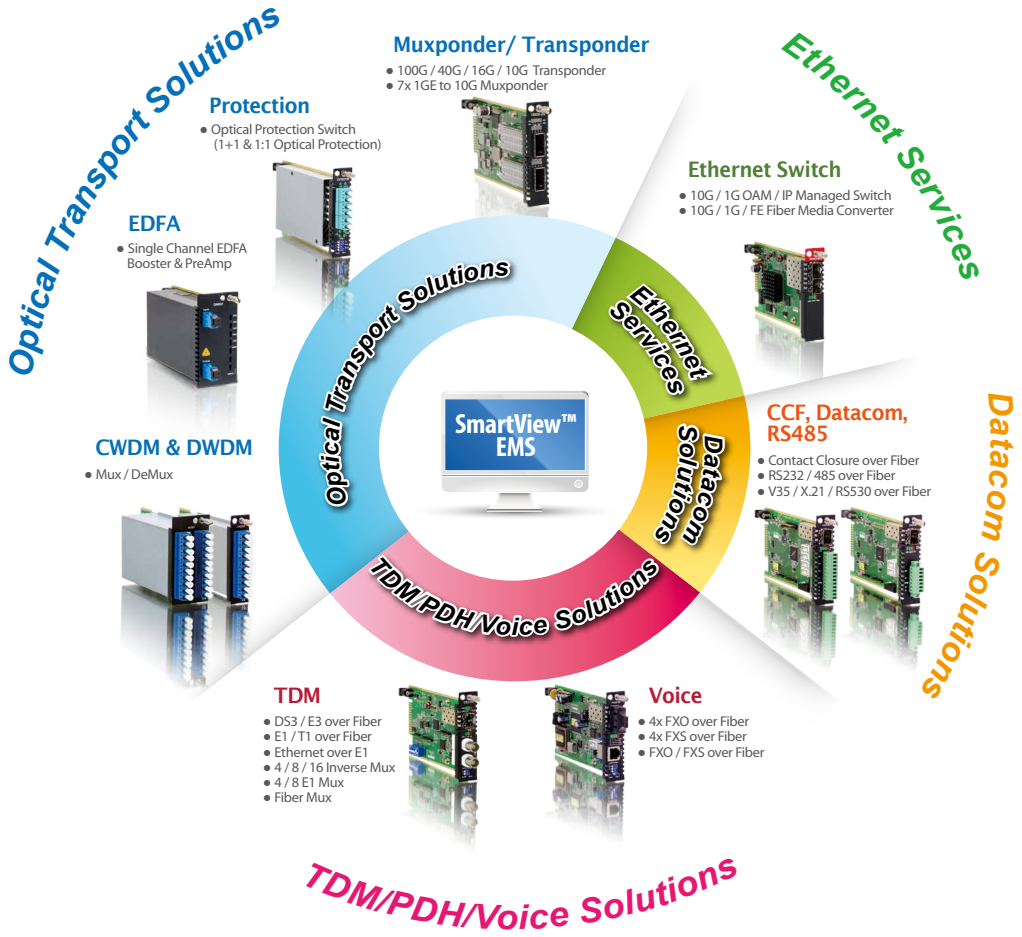
■ Optional Accessories

Item	Model Name	Description
Rack Mount Kit	RMK01	Single unit rack mount kits only for 1 slot chassis power build-in type (CH01M and CH01/P-AC/DC/AD)
	RMK02	Single unit rack mount kits only for 2 slots chassis power build-in type (CH02M and CH02/NMC)
	RMK03	Single unit rack mount kits only for 2 slots chassis power build-in type (CH02/SMT)
	RMK04	Single unit rack mount kits only for 4 slots chassis power build-in type (CH04A)
Wall Mount Kit	WMK01	Single unit wall mounting kit

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

iAccess™ Platform Solutions

iAccess™ Multi-Service Platform offers a full range of solutions for service providers and enterprises, including **Optical Transport Solutions** (transponders, muxponders, CWDM, DWDM), **TDM/PDH/Voice Solutions** (fiber converters and multiplexers), **Ethernet Services** (switches and converters) and **Data Communication Solutions** (Sync/Async serial over fiber). The iAccess is a fully modular product series that integrates a wide range of modules for any interface or protocol hosted in a selection of Chassis sizes for simple and flexible operations.

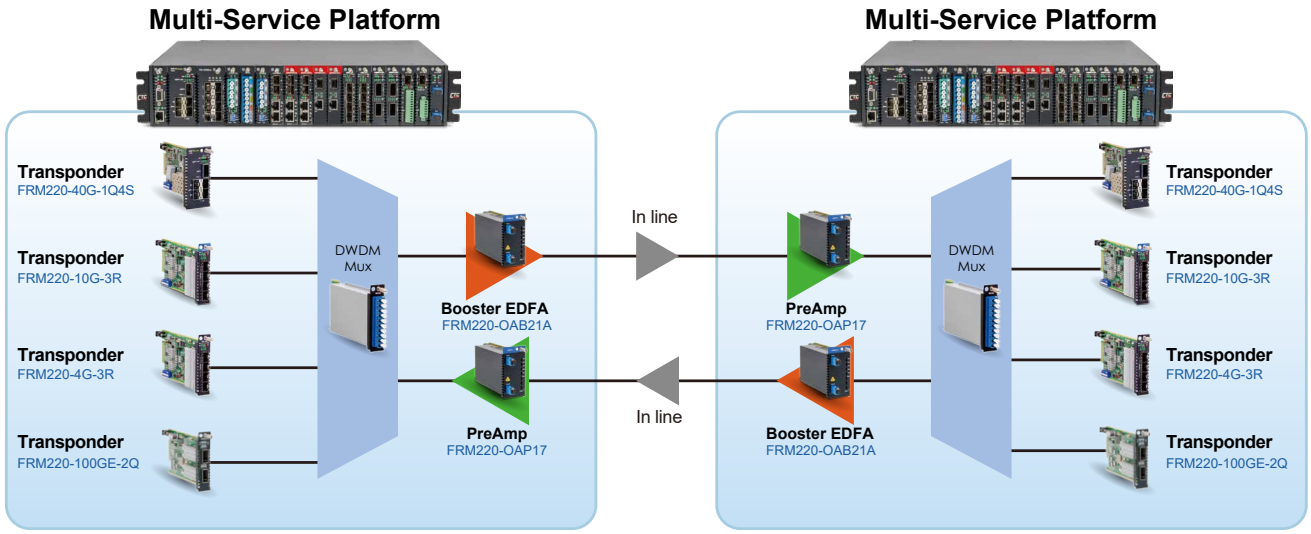


iAccess Platform Solution Category

Applications

▪ Optical Transport Solution

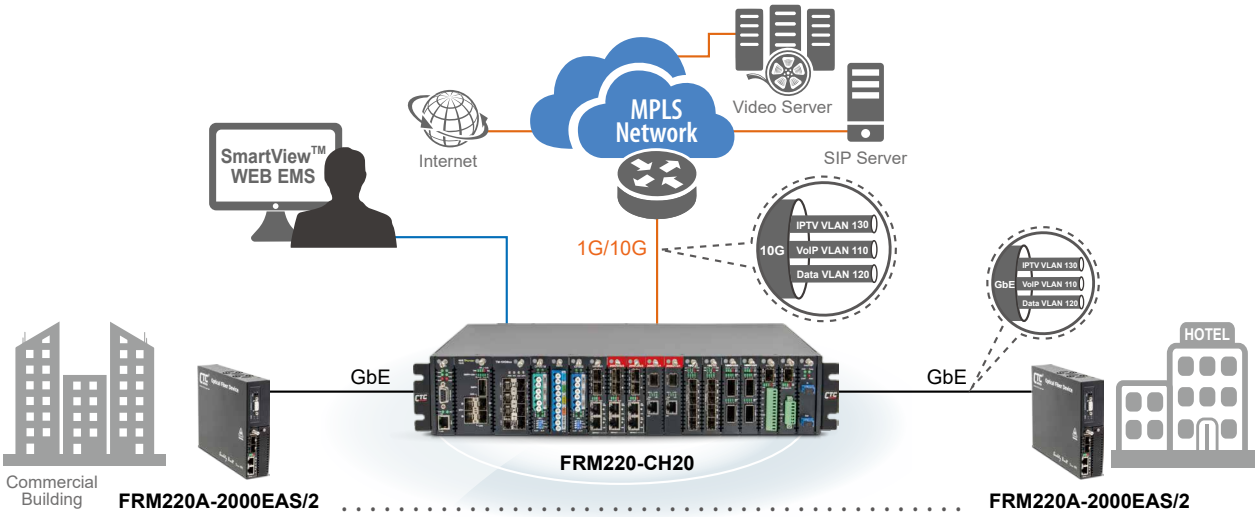
Optical transport is important in providing data over long distances. CTC Union's Optical Transport Solutions include the optical transport building blocks of Mux/Demux, transponders, muxponders, EDFA and optical protection switching.



CWDM /DWDM P to P Application

▪ Ethernet Services

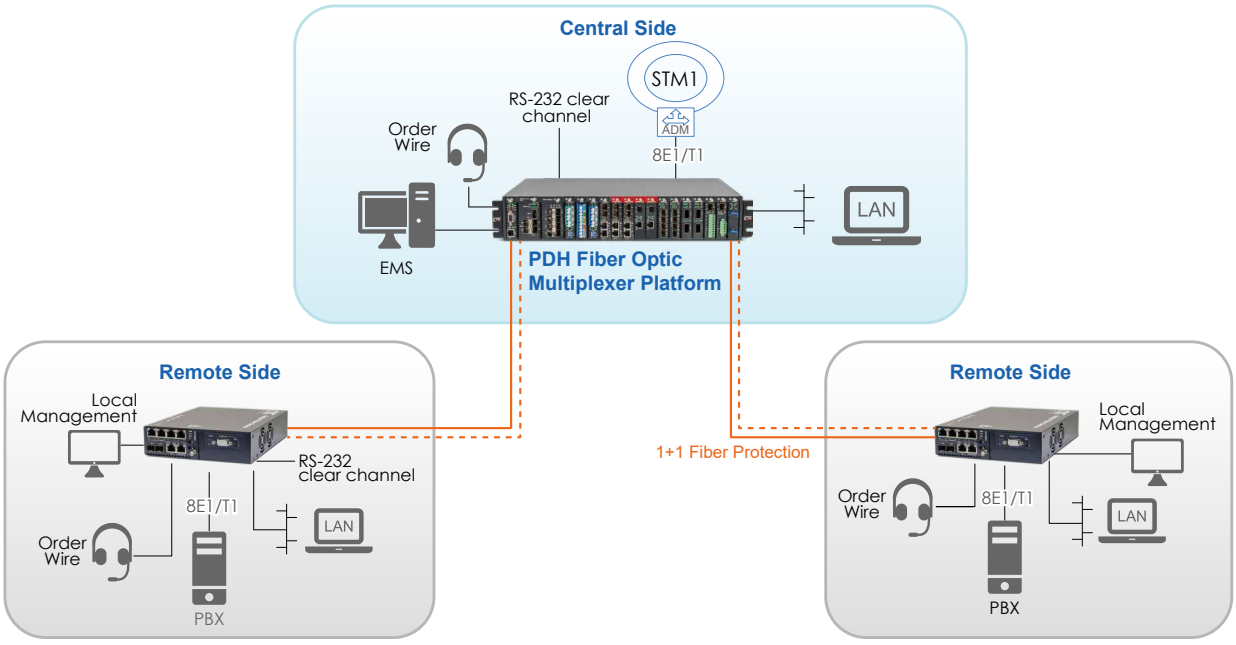
Ethernet solutions require a range of Ethernet products. CTC Union provides media conversion, Ethernet switching and carrier class Ethernet, through a wide range of product selections.



Typical FTTB Application

▪ TDM/PDH/Voice solution

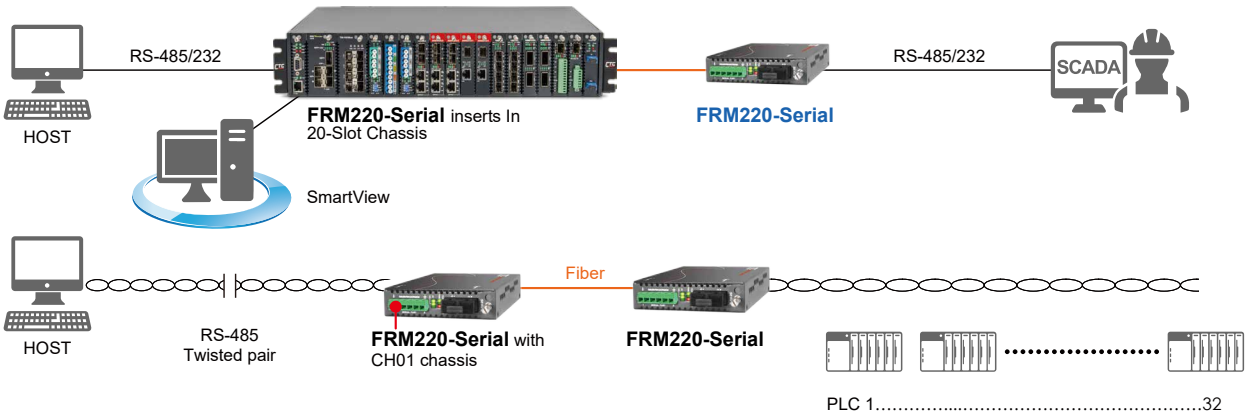
TDM and PDH are becoming legacy protocols, however, much of the world's voice communications still rely on devices that transport these protocols. CTC Union's solutions include DSU/CSU access units, Time Division Multiplexers, PDH over fiber and POTS over fiber devices.



PDH Fiber Optical Multiplexer P2P Application

▪ Data Communication Solution

Data communications are important for device control and satellite communications. CTC Union's devices provide low latency data communications over fiber optical transport.



Data Communications Application

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.