

| Specification                   |                                       | Model                              |                   | Model                         |                           | Model                |                  | Model                |           |                      |   |
|---------------------------------|---------------------------------------|------------------------------------|-------------------|-------------------------------|---------------------------|----------------------|------------------|----------------------|-----------|----------------------|---|
|                                 |                                       | FRM220-10/100i                     |                   | FRM220-10/100iS-2             |                           | FRM220-1000MS        |                  | FRM220-1000TS        |           | FRM220A-1002ES       |   |
| <b>Description</b>              |                                       | In-band managed FE Converter       |                   |                               | Web Smart FE/GE Converter |                      | GE Converter     |                      | GE Switch |                      |   |
| <b>Fiber interface</b>          | <b>Single Mode</b>                    | 15/30/50/80/120km                  |                   | 30/50/80/120km                |                           | 10/20/40/50/80/120km |                  | 10/20/40/50/80/120km |           | 10/20/40/50/80/120km |   |
|                                 | <b>Multimode</b>                      | 2Km                                |                   | 2Km                           |                           | 2Km                  |                  | 2Km                  |           | 2Km                  |   |
|                                 | <b>WDM</b>                            | 20/40/60/80km                      |                   | 20/40/60/80km                 |                           | 20/40/60/80km        |                  | 20/40/60/80km        |           | 20/40/60/80km        |   |
|                                 | <b>Wave Length(nm)</b>                | 1310/1550                          |                   | 1310/1550                     |                           | 1310/1550            |                  | 1310/1550            |           | 1310/1550            |   |
|                                 | <b>Speed</b>                          | 100Base-FX                         |                   | 100Base-FX                    |                           | 100/1000Base-X       |                  | 1000Base-X           |           | 1000Base-X           |   |
|                                 | <b>Transceiver Type</b>               | SC/FC/ST<br>(Fixed Type)           |                   | SFP-LC x 2                    |                           | SFP-LC               |                  | SFP-LC               |           | SFP-LC x 2           |   |
| <b>Copper interface</b>         | <b>Speed</b>                          | 10/100Base-TX                      |                   | 10/100Base-TX                 |                           | 10/100/1000Base-T    |                  | 1000Base-T           |           | 10/100/1000Base-T    |   |
|                                 | <b>Connector</b>                      | RJ45                               |                   | RJ45 x 2                      |                           | RJ45                 |                  | RJ45                 |           | RJ45 x 2             |   |
| <b>Features</b>                 | <b>Auto-Negotiation or force mode</b> | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>Auto MDI/MDIX</b>                  | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>Dying Gasp</b>                     | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>Bandwidth Control</b>              | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>Loop back test</b>                 | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>IEEE 802.3x Flow Control</b>       | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>Auto Laser Shutdown (ALS)</b>      | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>Link fault pass through (LFP)</b>  | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>RMON Counter</b>                   | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>Max. Packet Size (bytes)</b>       | Switch: 2046<br>Converter: 9k      |                   | Switch: 2046<br>Converter: 9k |                           | 9K                   |                  | 10K                  |           | 10K                  |   |
|                                 | <b>F/W upgrade via TFTP</b>           | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>IEEE802.1Q VLAN</b>                | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>IEEE802.1ad Q-in-Q VLAN</b>        | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
|                                 | <b>Management</b>                     | <b>In-band Management Protocol</b> | Japan/TTC TS-1000 |                               | Japan/TTC TS-1000         |                      | IEEE 802.3ah OAM |                      | V         |                      | V |
| <b>Console w / CH01M</b>        |                                       | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
| <b>Web</b>                      |                                       | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
| <b>Telnet</b>                   |                                       | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
| <b>SNMP/MIB</b>                 |                                       | V                                  |                   | V                             |                           | V                    |                  | V                    |           | V                    |   |
| <b>Operation Temperature</b>    |                                       | 0~60 C                             |                   | 0~60 C                        |                           | 0~60 C               |                  | 0~60 C               |           | 0~60 C               |   |
| <b>MTBF</b>                     |                                       | 65,000 hrs                         |                   | 65,000 hrs                    |                           | 65,000 hrs           |                  | 65,000 hrs           |           | 65,000 hrs           |   |
| <b>Power</b>                    |                                       | 12VDC                              |                   | 12VDC                         |                           | 12VDC                |                  | 12VDC                |           | 12VDC                |   |
| <b>Dimension (D x W x H) mm</b> |                                       | 155 x 88 x 23                      |                   | 155 x 88 x 23                 |                           | 155 x 88 x 23        |                  | 155 x 88 x 23        |           | 155 x 88 x 23        |   |