



## Sunny FM Series – FM Fiber Optical Repeater

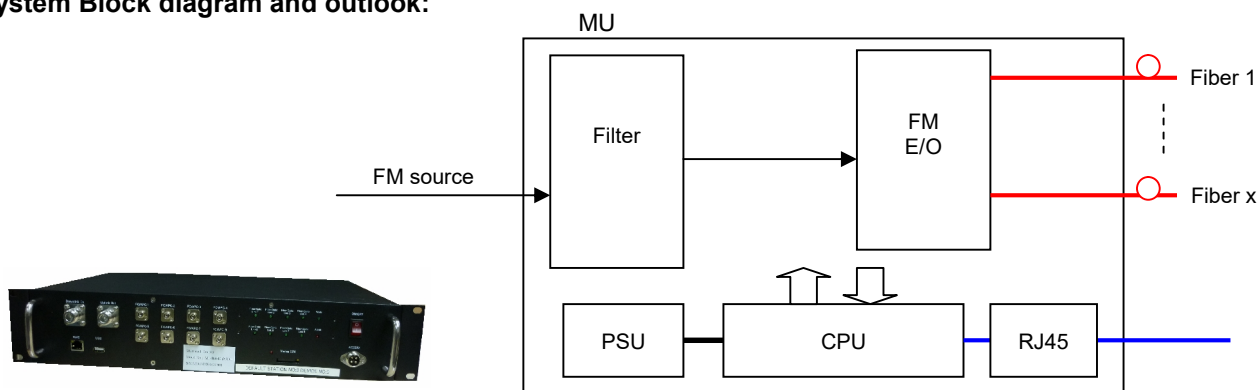
### Model: SUN-FM-MUx And SUN-FM-RU-P

Where X is number of RU will be connect to each MU and typically is 4 or 8

P is max. Output power, 37, 40, 43dBm

### SUN-FM-MUx

System Block diagram and outlook:



### MU Electrical Specification

| Items                           | Technical Specification |
|---------------------------------|-------------------------|
| Frequency (MHz)                 | 87.5-108                |
| VSWR                            | ≤1.5                    |
| Maximum Input per RF port (dBm) | +10                     |
| RF sensitivity (dBm)            | ≤ -40                   |
| Pass Band Ripple (dB)           | ≤3.0                    |
| Frequency Error (ppm)           | ≤0.05                   |
| Frequency Deviation (kHz)       | ≤±2.5                   |
| Noise Figure (dB)               | ≤5                      |
| Transmission Delay (us)         | ≤1                      |

### MU Optical Specifications

|                            |        |
|----------------------------|--------|
| Total Optical Output Power | 0±3dBm |
| Optical Max. Input power   | /      |
| Optical Min. Input power   | /      |
| Optical wavelength         | 1550nm |
| Optical Loss               | ≤10dB  |
| Optical Connector          | FC/PC  |
| Number of Optical Ports    | 8 Max  |

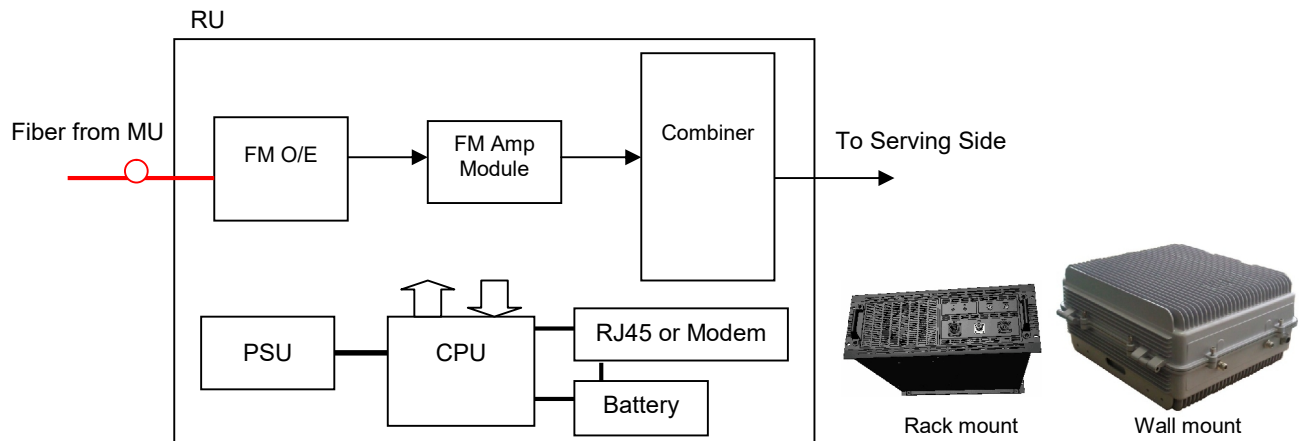


### MU Power Supply and Mechanical Specifications

|                            |  |
|----------------------------|--|
| RF Connector               | N-Female, 50ohm*   |
| Operating Temperature      | -5~+45°C   |
| Operating Humidity         | ≤85%   |
| MTBF                       | ≥100000 hours  |
| Power Supply               | AC220V±60V,45~55Hz<br>OR -48V DC (option STR400-DC)  |
| Max. Power Consumption     | ≤50W   |
| Heat Dissipation           | ≤40W   |
| Cabinet Environment Rating | IP20   |
| Remote Control Module      | RS232/USB (Standard)<br>Wireless Modem (option SUN-FM-MU-RFM)<br>Ethernet (option SUN-FM-MU-ETH) |
| Alarm Type                 | No Power, Over Temperature, RU Failed  |
| Dimension                  | 2U (19" rack mount, 500mm depth)   |
| Weight                     | 10kg   |

### SUN-FM-RU-P

System Block diagram and outlook:



### RU Electrical Specification

| Item                                   | Specification  |
|--|--|
| Frequency Range (MHz)                  | 87.5-108   |
| Max. Output Power (dBm)                | 37, 40 or 43±1.5   |
| Gain (Max.) (with 0dB optic loss) (dB) | 65±3 (included with MU)                                    |
| Max. input without damage (dBm)        | ≤10  |
| Gain Adjustable Range/Step (dB)        | ≥30/1dB  |
| Gain Adjustable Error (dB)             | Gain adjustable range is 0~20, error≤1dB; ≥21, error≤1.5dB |
| Ripple (dB)                            | ≤3 in bandwidth  |
| ALC                                    | ΔPo≤±1 @ input level increase 20dB                         |
| VSWR                                   | ≤1.5   |
| Time Delay (us)                        | ≤1.0   |
| Frequency Error (ppm)                  | ≤12  |
| Frequency Deviation (kHz)              | ±2.5   |
| IM3 (dBc)                              | ≤-45   |
| Noise Figure (dB)                      | ≤ 6  |



### RU Optical Specifications

|                          |        |
|--------------------------|--------|
| Optical Max. Input power | +4dBm  |
| Optical Min. Input power | -15dBm |
| Optical wavelength       | 1550nm |
| Optical Loss             | ≤10dB  |
| Optical Connector        | FC/PC  |
| Numbers Of Optical Ports | 1      |

### RU Power Supply and Mechanical Specifications

|                            |   |
|----------------------------|---|
| RF Connector               | N-Female, 50ohm   |
| Operating Temperature      | -25~+55°C   |
| Operating Humidity         | ≤95%  |
| MTBF                       | ≥100000 hours   |
| Power Supply               | 230VAC, 50/60Hz   |
| Max. Power Consumption     | ≤220W   |
| Cooling                    | Natural cooling for wall mount, FAN cooling for rack mount  |
| Heat Dissipation           | ≤200W for wall mount  |
| Cabinet Environment Rating | IP65 for Wall Mount, IP20 for Rack Mount  |
| Local LED                  | Power – GREEN, Alarm - RED  |
| Alarm types                | No AC Power, Over Temperature, Module Failure, VSWR, Over RF Downlink Power, Low RF Downlink Power, Door Open |
| Remote Control Module      | RS232/USB   |
| Dimension                  | 550x440x235mm (wall mount) OR<br>4U, 19" rack mount, 500mm depth (option: SUN-FM-RACK)                        |
| Weight                     | N.W.33.5kg, G.W.36kg  |

### Ordering information:

|                           |  |
|---------------------------|--|
| <b>Model: SUN-FM-MUX</b>  | 1. Confirm Number of RU will connect to MU: 2, 4 or 8  |
| <b>Options</b>            | <b>SUN-FM-MU-RFM</b> : Remote control MU by RF Modem (SMS)<br><b>SUN-FM-MU-ETH</b> : Remote control MU by Ethernet<br><b>SUN-OMS</b> : Sunny Remote Control Software (Network management software) |
| <b>Model: SUN-FM-RU-P</b> | Confirm Maximum Downlink output power (P, dBm): <b>37, 40 OR 43</b>  |
| <b>Options</b>            | <b>SUN-FM-RACK</b> : Rack mount cabinet <sup>1</sup><br><sup>1</sup> need to order together with main unit<br><sup>1</sup> order either option only  |

Technical data are subjected to change without notice – File: SUN-FM-MUX/RU-P datasheet 2020V1.0