



## STR400 Series – TETRA Channel Selective Fiber Optic Amplifier

TETRA Fiber Optic Amplifier is used to extend the wide coverage site such as campus, tunnel and building. in passive distribution antenna system (DAS). Sunny STR400 Series – TETRA Fiber Optic Amplifier, is included with Master Unit (MU) and Remote Units (RU) connected by fiber cable, provides wide range of configurations to address different customer requirement. It can support up to 8 TETRA channels within 7MHz bandwidth.

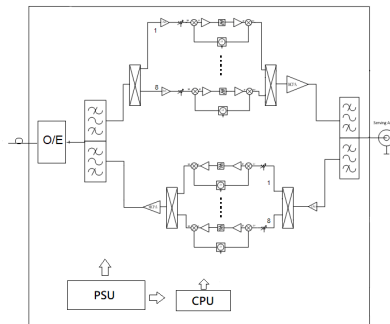
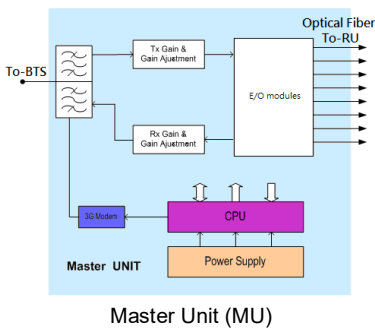
### Model: STR400-F1'F2/F3'F4-MUz, STR-400-F1'F2/F3'F4-RU-XC

Where z is number of RU connect to MU - typ 2, 4, or 8; X is the number of channels in RU – typ 2, 4 or 8 channels

### Highlight

- Comply ETSI standard with CE certificate
- Support 380-470MHz
- Support up to 7MHz Bandwidth (Typical 5MHz Bandwidth and 5MHz Guardband)
- Support up to 8 TETRA channels
- Single MU support up to RU x 8
- Optional remote alarm/control/monitoring/statistics by ethernet or sms
- Different kinds of option configuration

### System Block Diagram

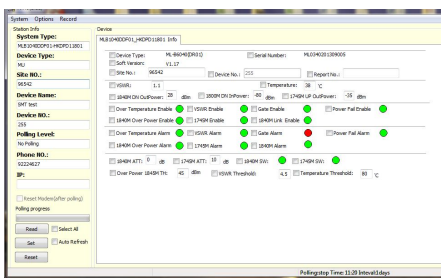


Remote Unit (RU)

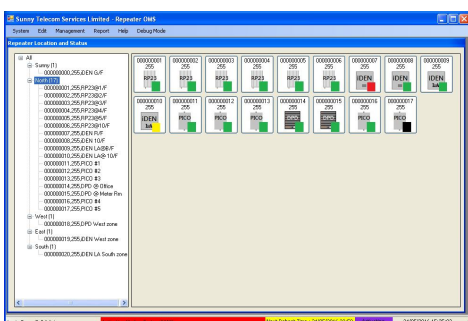
### System Outlook



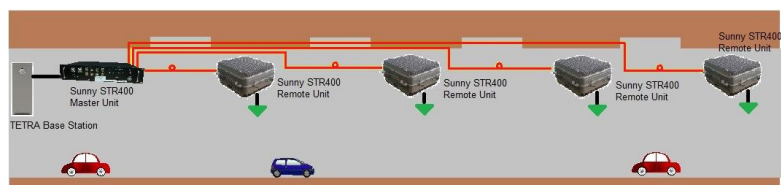
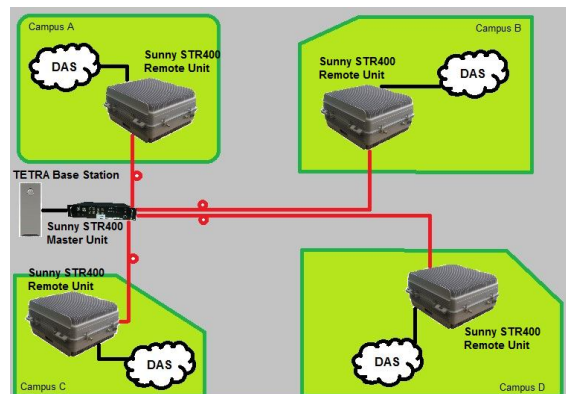
### Remote Software



Option: SUN-OMS



### Application Example





## MU Electrical Specifications

Items	Uplink	Downlink
Frequency Range	F1-F2MHz (within 380-470MHz)	F3-F4MHz (within 380-470MHz)
Bandwidth Range	5MHz (Optional 7MHz)	5MHz (Optional 7MHz)
Guardband (F3 minus F2)	≥3MHz	≥3MHz
RF Output Level	-5±2dBm	/
Dynamic Range	≥60dB	/
Uplink Noise Floor	≤-120dBm@ 25kHz RBW	/
Max. RF Input without Damage	/	≤0dBm
Input Sensitivity	/	≥-45dBm
Third Order Intercept	≥+25dBm	/
VSWR	≤1.5	
Compliance	Radio: ETSI TS101 789, EN300 392, EN300 394, EN303 035 EMC: EN301 489, Safety: EN60950, Health: EN 50385	

## MU Optical Specifications

Items	Uplink	Downlink
Total Optical Output Power	/	-4~0dBm
Optical Max. Input power	0.5dBm	/
Optical Min. Input power	-14dBm	/
Optical Wavelength	1270nm	1330nm
Max. Optical Path Loss	≤10dB	
Optical Connector	FC/APC (Single Mode Duplex)	
Number of Optical Ports	1-8 (subjected to nos of RUs connected with MU)	

## MU Power Supply and Mechanical Specifications

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

## RU Electrical Specifications

Items	Uplink	Downlink
Frequency Range	F1-F2MHz (within 380-470MHz)	F3-F4MHz (within 380-470MHz)
Bandwidth Range	5MHz (Optional 7MHz)	5MHz (Optional 7MHz)
Guardband (F3 minus F2)	≥3MHz	≥3MHz
Number of Channels	2, 4 or 8	
Channel Frequency	25kHz per channel*	
Output Power Per Channel	2 Channels	34±2dBm
	4 Channels	31±2dBm
	8 Channels	28±2dBm
Max. Gain (1dB per step)	31 to 56±3dB	33 to 58±3dB
Intermodulation Attenuation	≤ -60dBc	
Third Order Intercept	/	≥ +68dBm @ 2 x 34dBm
Max. Input without Damage	≤ -10dBm	
Input Sensitivity	2 Channels	≥ -117dBm
	4 Channels	≥ -114dBm
	8 Channels	≥ -111dBm
ALC	△Po≤±1 dBm	
Spurious Emissions from RF Port	≤ -36dBm@9kHz~1GHz ≤ -30dBm@1GHz~12.75GHz	
Time Delay	≤10us	
Noise Figure	≤5dB at maximum gain	
VSWR	1.3	
Compliance	Radio: ETSI TS101 789, EN300 392, EN300 394, EN303 035 EMC: EN301 489, Safety: EN60950, Health: EN 50385	



## RU Optical Specifications

Items	Uplink	Downlink
Optical Output Power	-4~0dBm	/
Optical Max. Input Power	/	+0.5dBm
Optical Min. Input Power	/	-14dBm
Optical Wavelength	1270nm	1330nm
Max. Optical Path Loss	≤10dB	
Optical Connector	FC/APC (Single Mode Duplex)	
Number of Optical Port	1	

## RU Power Supply and Mechanical Specification

RF Connector	50ohm, N-Female (Default Duplex)
Operating Temperature	-25°C ~+55°C
Relative Humidity	Max. 99%
MTBF	Min. 100000 hours
Power Supply	230VAC, 50/60Hz OR -48V DC (option STR400-DC)
Maximum Power Consumption	≤200W
Cooling	Natural cooling for wall mount, FAN cooling for rack mount
Heat Dissipation	≤170W 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 (not applied for STR400-RACK)
Remote Control Module	RS232/USB (Standard) Wireless Modem (option STR400-RFM, STR400-WD) Ethernet (option STR400-ETH)
Dimensions	550x440x235mm (wall mount) OR 4U, 19" rack mount, 500mm depth (option: STR400-RACK)
Weight	≤33.5kg
Colour	Grey

\* User is not allowed to select ±2 channels of the selected channel

## Ordering Information:

<b>Model:</b> <b>STR400-F1'F2/F3'F4-MUz</b> <b>STR400-F1'F2/F3'F4-RU-XC</b>	1. Confirm z in MU: z is the number of RU(s) per MU. The maximum number is 8 2. Confirm uplink/downlink frequency. F1 to F2 and F3 to F4 are within 380-470MHz and typically 5MHz (Optional ≤7MHz); F3 minus F2 must be ≥5MHz (Optional ≥3MHz) 3. Confirm Nos of Channel (X) - 2, 4 or 8
<b>Options</b>	<u>STR400-RFM</u> : Sunny Remote Control by RF Modem (SMS) <sup>1</sup> <u>STR400-WD</u> : Sunny Remote Control by RF Modem (wireless data) <sup>1</sup> (Fixed IP needed) <u>STR400-ETH</u> : Sunny Remote Control by Ethernet <sup>1</sup> <u>SUN-OMS</u> : Sunny Remote Control Software (Network management software) <u>STR400-TP</u> : With Downlink and Uplink -30dB test ports outside the cabinet <u>STR400-RL</u> : With 2 relay input and 2 relay output as external alarm (dry contact) <u>STR400-UPS</u> : Sunny Uninterruptible Power Supply <u>STR400-DC</u> : Using -48VDC as power supply input <u>STR400-RACK</u> : Rack mount cabinet with FAN cooling <u>STR400-RU-HSPSU</u> : Sunny Hot Standby Power Supply Unit <sup>2</sup> <u>STR400-RU-HSRU</u> : Sunny Hot Standby RF Module Unit <sup>2</sup> <u>STR400-RU-HSWU</u> : Sunny Hot Standby Whole Unit <sup>2</sup> <u>STR400-RU-HSFR</u> : Sunny Hot Standby Fiber for RU Redundancy <sup>2</sup> <u>STR400-MU-HSPSU</u> : Sunny Hot Standby Power Supply Unit <sup>3</sup> <u>STR400-MU-HSRU</u> : Sunny Hot Standby RF Module Unit <sup>3</sup> , Note: Size will change to 4U (19" rack mount, 500mm depth) <u>STR400-MU-HSWU</u> : Sunny Hot Standby Whole Unit <sup>3</sup> <sup>1,2,3</sup> order either option only

Technical data are subjected to change without notice – File: STR400-F1'F2/F3'F4-MU\_RU-XC datasheet 2019V1.0