

GST-FT64 Fire Telephone System Design and Application Guide

V1.01

This user guide is only to provide onsite assistance in system design and application. This is NOT an OFFICIAL document of GST. In case of any conflict with other documents, the documents officially issued by Gulf Security Technology co. ltd. shall prevail.

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1. General

1.1 System Instruction

The GST-FT64/64W network fire telephone system utilizes a non-polarized 2-wire loop, consisting of fire telephone panel, fire telephone handsets, fire telephone jacks, network modules, network expansion cards, switches, and communication lines. This system has the following performance and features.

- 1) The telephone panel network can be set Master-Slave mode or Peer-to-peer mode.
- 2) Maximum 64 panels in network, including master and slave panels.
- 3) The network box provides 16 routes of audio outputs and 16 slots for network module. Maximum 4 network boxes can be linked in the network.
- 4) Each fire telephone panel may drive maximum 99 handsets (or telephone jacks).
- 5) Maximum handset capacity is $64 \times 99 = 6336$.
- 6) Conversation modes: master with slave, master with handset, slave with handset. Maximum 4 users (master, slave or handset) can talk at the same time.
- 7) Auto-record the conversation up to 6 hours.
- 8) Fiber connection distance 20km.
- 9) Panel consumption: 24VDC +/- 10%. Standby current <0.3A. Active current <0.55A.
- 10) Telephone loop length $\leq 1500\text{m}$.
- 11) Panel installation:
 - GST-FT64: 2U 19" rack mount
 - GST-FT64W: Wall-mount
- 12) Size and weight:
 - GST-FT64: 482.6mm×88.1mm×155.0mm (W x H x D), 1.5kg
 - GST-FT64W: 400mm×300mm×115mm (W x H x D), 3.6kg

1.2 System Components

Model	Name	Notes	Photo
GST-FT64	Fire Telephone Panel	19" rack mount, 24VDC	
GST-FT64W	Fire Telephone Panel	Wall mount, 24VDC	
NM-C1	Master Network Module	For 2-panel network	

NM-C16	Network Box	For multi-panel network. Maximum 4 boxes.	
NC-1	Network Expansion Card	Inserted into slot of network box. 1 piece for each branch. Maximum 16 slots in each network box.	
NM-R1	Slave Network Module	For slave panel.	
NS-5	5-Route Switch	5VDC, 220VAC/5VDC converter supplied	
NS-9	9-Route Switch	9VDC, 220VAC/9VDC converter supplied	
NS-16	16-Route Switch	Rack mount, 220VAC	
NS-24	24-Route Switch	Rack mount, 220VAC	
P-9913(F)	Fixed Handset	210x80x48 (mm)	
P-9913(J)	Telephone Jack	86x86x35 (mm)	
P-9913(M)	Mobile Handset	6mm earphone plug	
	24VDC power unit	On request	

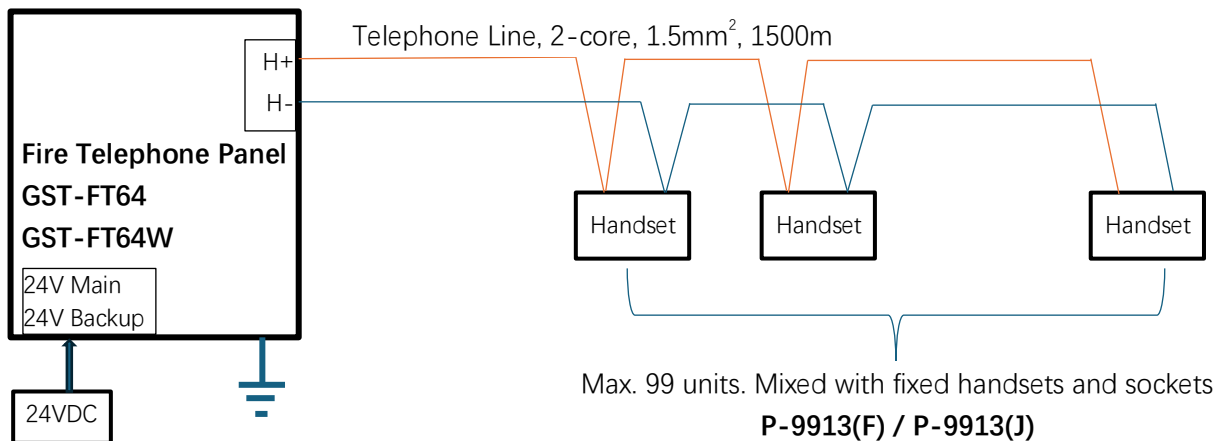
2. Build system

The fire telephone system can be standalone, dual-panel network, multi-panel network.

2.1 Standalone

24VDC supply is required by the fire telephone panel. Dual-power can be adopted to ensure the system operation.

The fire telephone loop can accommodate up to 3 branches, with each branch having a maximum length of 1500m.

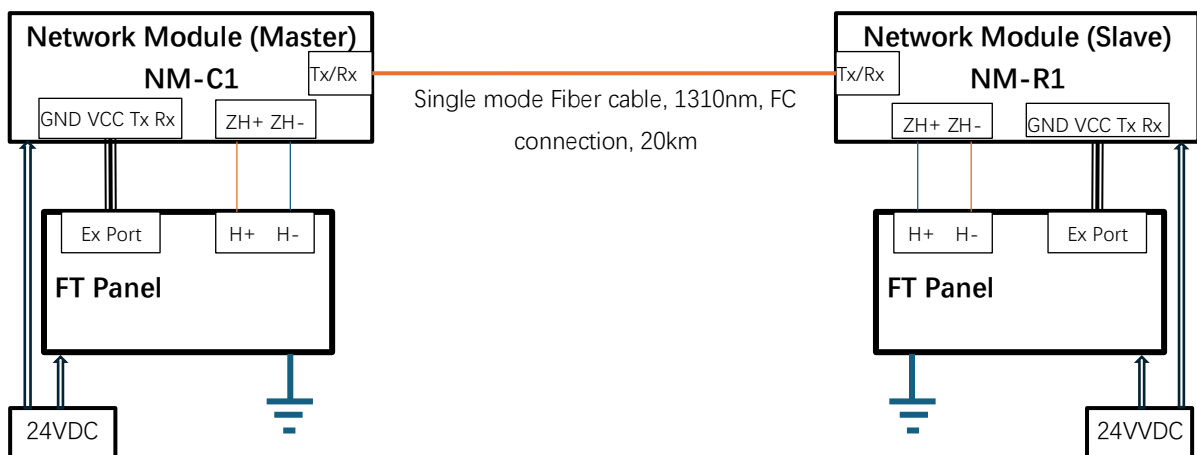


2.2 Dual-panel Network

Since the network module is only available rack-mount model, it is recommended to use the GST-FT64.

Each telephone panel can connect up to 99 handsets (jacks)

The telephone panel network can be set in either a master-slave mode or a peer-to-peer mode.

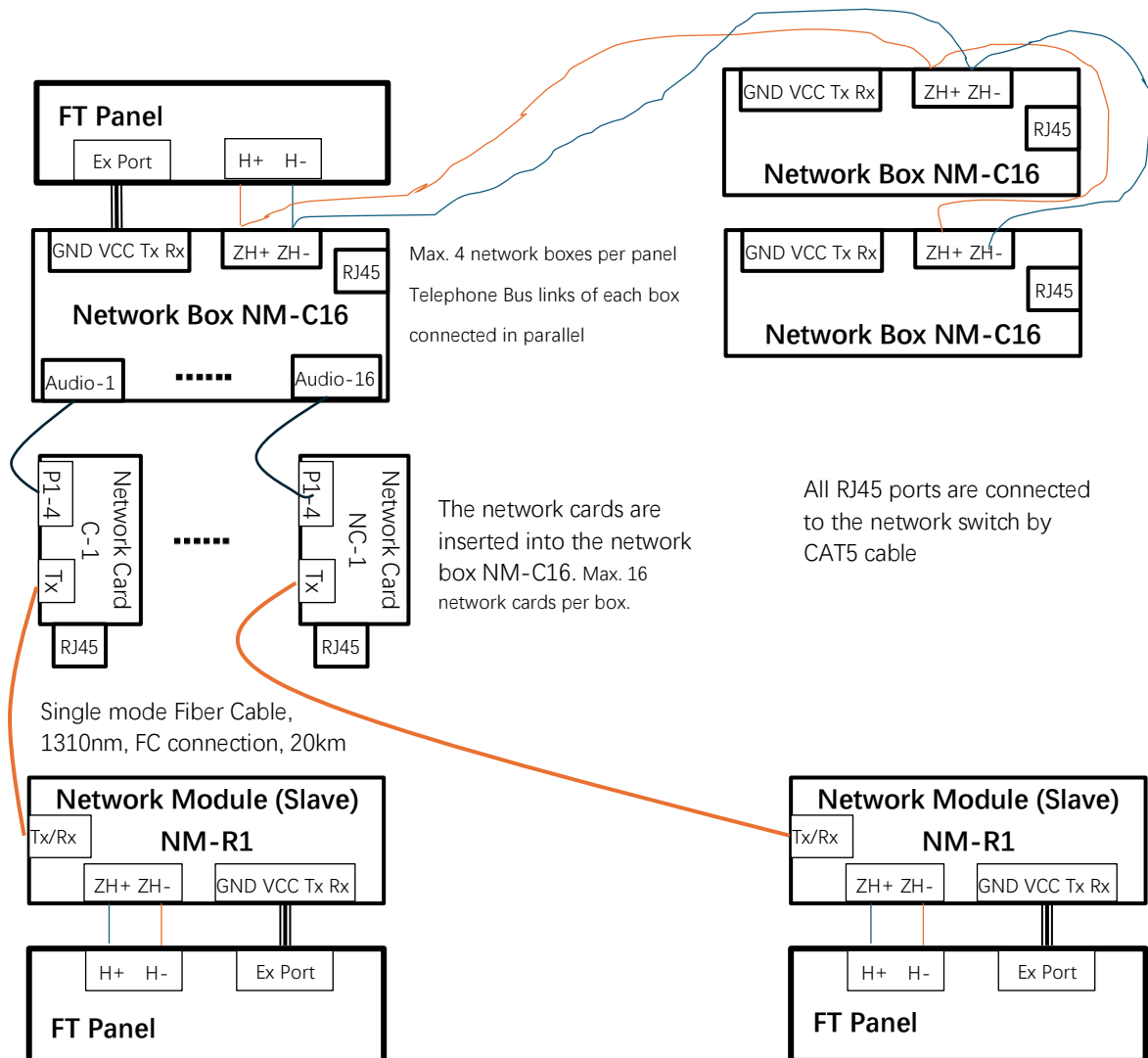


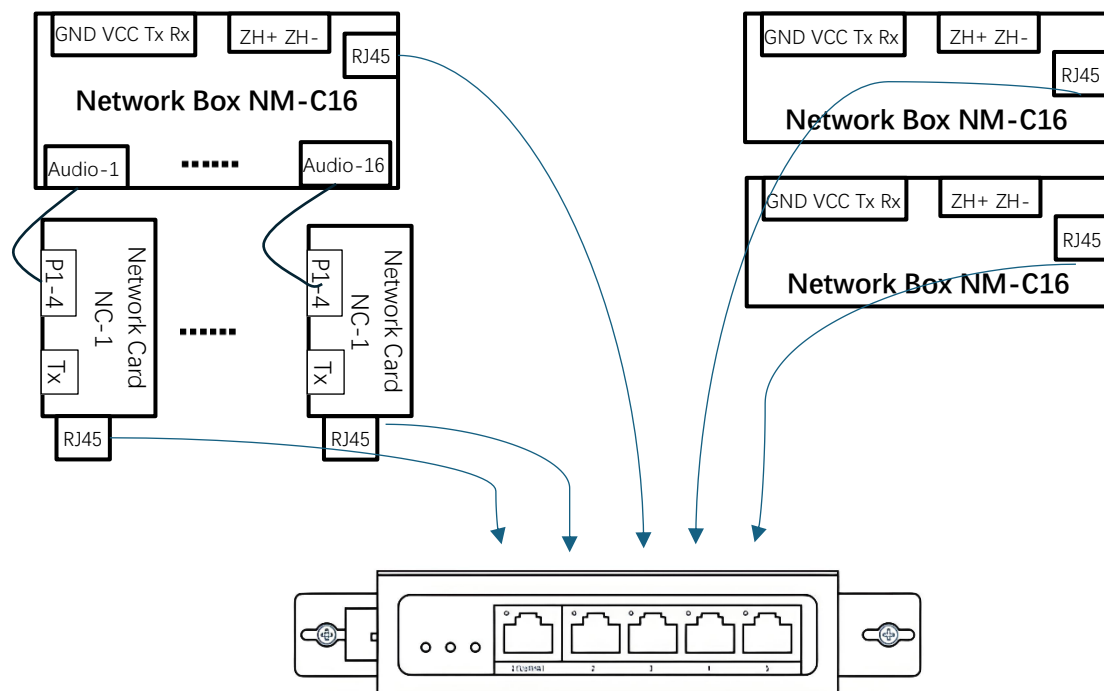
2.3 Multi-panel Network

The interconnection of telephone line between network boxes is connected in parallel through ZH+/ZH- terminals. The signals are distributed to each network expansion card through the Audio port on the box, converted into fiber optic signals, and then communicated with each slave panel.

The control signal is converted into a TCP/IP signal after being connected to the first network box through the expansion port, and then controls other boxes and the networked expansion cards through LAN.

The TCP/IP signal is decoded into control signals and telephone loop signals by the slave network module and transmitted to each slave panel.





All RJ45 ports are connecting to the LAN switches.

2.4 Network Mode

2.4.1 Master-Slave Mode

The #1 telephone panel is the Master. Other telephone panels are slave.

Master	Slave
When the master panel has clock-set /reset /self-test /mute operation, the slave panel will automatically perform the same operation	The operation on slave panel only effects on its own.
The master panel will show fault messages of all slave panels.	The slave panel only shows the fault messages of its own.
Missed-call on slave panels can be forwarded to the master panel.	Missed-call on master panel will not be forwarded to the slave panel(s).

2.4.2 Peer-to-peer Mode

- When there is operation of clock-set /reset /self-test /mute, all panels will automatically perform the same operation.
- It is possible to inquire about fault messages of any telephone panel on any panel.
- Missed call of any telephone panel can be forwarded to other panels.

3. Handset

3.1 Addressing

The addressing of the handset (jack) is operated through menu on the telephone panel.

Disconnect the cable H+/H- of the telephone panel. Select set handset address in the menu. Connect the handset (jack) to the panel encoding port. Input the handset address and press ENTER to confirm. Program next handset by same steps.

When the handset is connected, the panel will automatically recognize the address and show it on screen. If the handset address is 0, panel will show "Uncoded handsets".

The mobile handset does not carry address.

3.2 Application

3.2.1 Fixed Handset P-9913(F)

Technical Specification

Operation Environment	Temperature: 0~40°C Relative Humidity: ≤ 95% Atmospheric Pressure: 86~106kPa Ambient Noise: ≤60dB
Operation Current	Standby: <1.5mA Talking: <30mA
Frequency Response	300~3400Hz
Ringing Sound Level	≥70dB
Dimension	Width: 80mm Height: 210mm Thickness: 48mm (including handset)
Gross Weight	365g
Mounting Hole Distance	135mm

This handset is wall-mounted, with mounting distance 135mm.

The handset is connected to the telephone panel through non-polarized 2-wire loop. The cable is recommended to use bicolor twisted-pair cables with a cross-sectional area greater than 1.5mm².

This handset should be installed in a dry, ventilated place free from corrosive gases.

3.2.2 Telephone Jack P-9913(J)

Technical specification

Operation Environment	Temperature: 0~40°C Relative Humidity: ≤ 95% Atmospheric Pressure: 86~106kPa Ambient Noise: ≤60dB
Operation Current	Standby: <3mA Talking: <30mA
Frequency Response	300~3400Hz
Ringing Sound Level	≥70dB
Dimension	Length: 86mm Width: 86mm Depth: 35mm
Gross Weight	100g

This telephone jack should be installed in a dry, ventilated place free from corrosive gases. Mount it on to the European style backbox with the supplied screws.

The telephone jack is connecting to non-polarized telephone loop by terminal H1/H2. If there are extension jacks, connect them to E1/E2 terminals. The cable is recommended to use bicolor twisted-pair cables with a cross-sectional area greater than 1.5mm².

3.2.3 Mobile Handset P-9913(M)

Technical specification

Operation Environment	Temperature: 0~40°C Relative Humidity: ≤ 95% Atmospheric Pressure: 86~106kPa Ambient Noise: ≤60dB
Distortion	<10%
Operation Current	17mA~31mA
Frequency Response	300~3400Hz
Gross Weight	100g

4. System Operation

4.1 Operation on panel

4.1.1 Set panel ID

Enter the menu of setting panel ID. Input the ID by number keys or [▲] [▼] buttons. Press [OK] to confirm and exit. The range of ID is 1-100.

```
Host ID setting
Host ID: 001
ID Range: 1-100
```

Enter the menu of network setup. Input the network parameters. Press [OK] to confirm and exit. The IP address 192.168.1.2 is for the Master Panel.

After setting network, reboot the panel to rebuild the communication.

```
Local Machine IP:
192.168.001.104

Subnet Mask:
255.255.255.000
```

4.1.2 Network mode setup

Enter the menu of setting network mode. Select the mode by [▲] [▼] buttons. Press [OK] to confirm and exit.

```
Networking Mode

Master-slave

Peer-to-Peer
```

4.1.3 Network register

Enter the register of network menu with password, press [OK] to perform the register process. Panel will show counting down interface and show network information when finished.

```

Reg of Network
Query of Network
Networking Mode
Call forwarding

```

4.1.4 Query of network

Enter the menu of query of network. Check the handset quantity under each panel by [▲] [▼] buttons.

In below screen shoot:

No. 001 is the first telephone panel in the network.

TOT:003 means there are totally 3 panels in this network.

QTY of Handsets: 06 means there are total 6 handsets under this telephone panel.

```

Query of Network
NO. 001/TOT:003
Reg Host ID:001
QTY of handsets: 06

```

4.1.5 Call forwarding setup

Enter the menu of setting call forwarding. Input the delay time by number keys or [▲] [▼] buttons.

Press [OK] to confirm and exit. If the time is set at 999s, the missed call on this panel will not be forwarded.

```

Call forwarding

999s

No transfer at 999

```

4.1.6 Register handset

In the menu of register handset, there are following operations.

Register Handset: Process the register by pressing [OK].

Online Set/Inquiry: Set online handsets / View online handsets.

Select the handset address. Use [▲] button to set online, and [▼] button to set offline.

Press and hold the [▲] button will set all 99 handsets to online. Press and hold the [▼] will set all 99 handsets to offline.

Location Text: Set text label to address.

Delete Text: To delete text label.

4.2 Call

4.2.1 Call from panel to handset

Pick up the panel and input password, panel will give a dial tone until a numerical key pressed, or the panel is hung up.

Enter the handset address and press [Turn on] to call the handset. The handset will ring and light

the LED. Conversation will be built by lifting the handset and panel will show the address of talking handset.

The panel can call maximum 5 handsets at the same time.

4.2.2 Call from handset to panel

When the handset is lifted, the telephone panel will ring. Lift the panel to talk directly.

4.2.3 Mobile handset

The mobile handset can call the telephone panel by inserted to any working telephone jack.

4.2.4 Call handset under other networked panel

Same operation as the panel call handset.

4.2.5 Hotline

There is hotline terminal on the telephone panel "Single Channel Talking". Connect a specified handset to this port. When this handset lift up, the panel will ring and lift to talk. The panel cannot call this hotline handset directly.

5. Trouble Shooting

Trouble Cause	Fault Appearance
Loop short circuit under standby mode	Telephone panel gives fault tone and lights the fault LED, shows "Short Circuit" on screen.
Loop short circuit during talking	Telephone panel stops conversation, gives fault tone and lights the fault LED.
Loop open circuit	After some time (related to the quantity of handsets), panel shows fault of all online handsets, gives fault tone and lights the fault LED.
Handset disconnected	Panel shows fault of the handset address, gives fault tone and lights the fault LED.
Hotline open circuit	Panel shows "Single fault", gives fault tone and lights the fault LED.
Hotline short circuit	Panel shows "Single fault", gives fault tone and lights the fault LED.
Mains fault	Panel Main LED lights Yellow, screen shows "Main power UV".
Backup fault	Panel Backup LED lights Yellow, screen shows "Battery UV".
Record full	When the record memory is full (around 6 hours), the panel shows "Record full" and lights fault LED. The fault will be cleared by deleting record.

6. Abbreviation

Abbreviation	Meaning
BAT	Battery
HS	Handset
REC	Record
LEN	Length
RD	Total Remaining duration
Cur z	Current zone
Del z	Delete able zone

Rn	Remaining duration
Comm	Communication
Network reg	Network registration
Reg	Registration
MPS UV	Main power low voltage
Number 99 disable	Number 99 has been disabled
Uncoded handsets	Handset address is 0
DUP code	Duplicate handset address
Net err	Network disconnected
z	Zone
enable	Enabled
Cur	Current
R	Query
W	Set

Default password: 11111