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LAN-Phone 57

The New Generation of Fibre Optic LAN and Intranet Phone for
Railways, Metros, Roads, Tunnels etc



The **LAN-PHONE 57** is one of a range of specialised telephones and is manufactured by Arnesys to exacting standards. They feature

- ◆ **Fibre Optic input & output**
- ◆ **Weatherproof** and extremely rugged construction
- ◆ **Safety** due to their non-metallic case & handset
- ◆ **Corrosion resistance**
- ◆ **Solid State** Electronics throughout
- ◆ Highly **reliable** operation & low cost of ownership
- ◆ Part of a **modern** range of Specialised Telephones
- ◆ Many **options** to suit your exact requirements

Summary

The **LAN-PHONE 57** Series of Telephones are suitable for factories, power stations, airports, railways, metros, tunnels, roads & motorways etc.

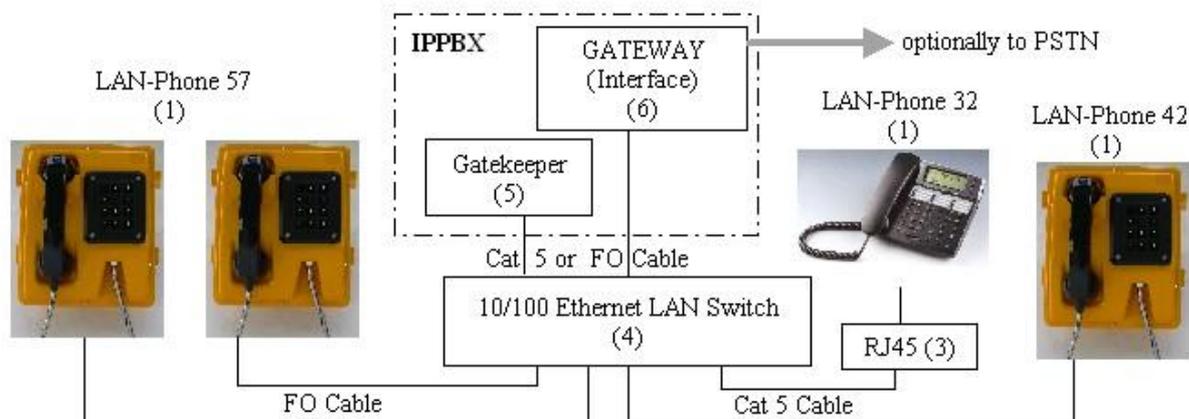
The **LAN-PHONE 57** has been designed using the latest technology and manufacturing specifications.

The **LAN-PHONE 57** is compatible with a wide range of networks ensuring clear speech quality at all times.

The **LAN-PHONE 57** is totally weathersealed for outdoor use in hostile environmental conditions.

Introduction to LAN-Phones

A LAN-Phone (32, 42, 57 etc) is a telephone like terminal that allows the user to make voice calls via an IP based LAN or broadband Intranet link. As can be seen from the photo above, the appearance of a LAN-Phone 57 (also 32, 42 etc.) resembles a traditional telephone set. However, a LAN-Phone differs from other phones in that it communicates either via Cat 5 or fibre optic cable. A simplified LAN-Phone system might consist of the following -



- 1) All telephones shown on this example are LAN Telephones
- 2) Simple LAN telephones may optionally be line powered. External power may be necessary at the telephone end for more complex LAN phones, Fibre Optic Cable interfaces and I/O Interfaces (extra functions) etc...
- 3) RJ 45 Connection to LAN. This can be either directly connected to copper cable or via a local interface to Fibre Optic cable. Category 5 copper cable or equivalent FO cable can be used..
- 4) LAN Switch(s) or Hub(s) etc..
- 5) Gatekeeper can be connected to the LAN at the Switch. Some Gatekeepers are integrated with Gateways or resident on a server etc..
- 6) Typically, a Gateway to PSTN Type Network but it could be to a leased connection etc. This can be either ISDN, ADSL or any other suitable connection
- 7) Items 5 & 6 may be part of an IPPBX .

LAN-Phone 57 calling another LAN-Phone

When a LAN-Phone 57 wants to make a telephone call, it informs the network about its address and whom it wants to call. There is a software module (either on an application server in the network or on a separate unit or on an IPPBX) which collects this information and translates it into a terminal address (IP) for the LAN-Phone 57. This application on a server is called a gatekeeper or call manager. Finally the LAN-Phone 57 will obtain the IP address of another LAN-Phone (the called party) and establish a conversation with it. Call establishment operation is approximately the same as a computer workstation accessing another computer on the "Network Neighbourhood". During the conversation, the gatekeeper monitors the conversation and provides additional information when calling or called parties request additional services (e.g. make a conference call with a third party etc.).

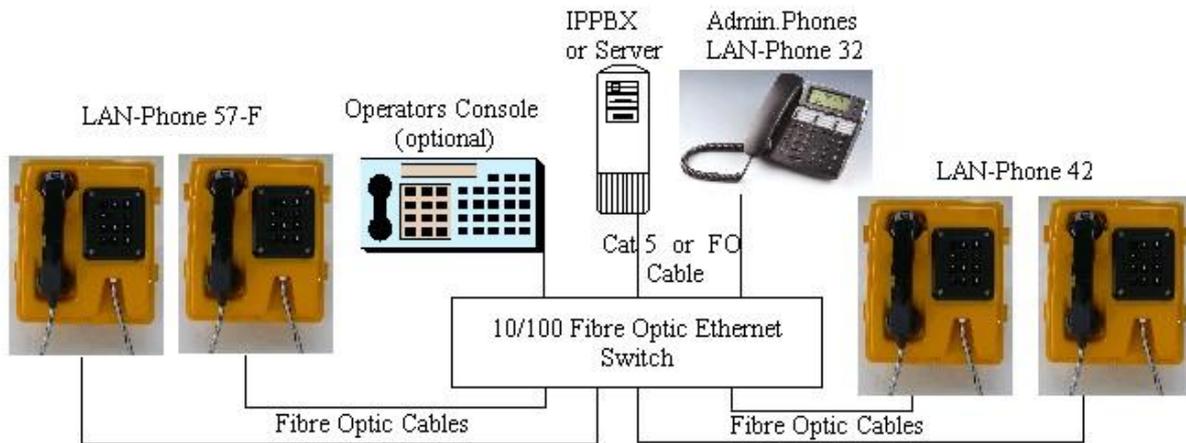
LAN-Phone 57 Calling to PSTN

A LAN-Phone 57 can call and talk with another LAN-Phone via the network. In addition, a LAN-Phone 57 can call to a traditional PSTN telephone via a voice gateway. A voice gateway provides traditional telephone line connectivity to the network. When a LAN-Phone 57 wants to call a PSTN telephone, the gatekeeper will instruct the voice gateway to dial. After a call is established between the voice gateway and a PSTN telephone, the LAN-Phone 57 will access the voice gateway and talk with the PSTN telephone via it.

LAN-Phone 57 Installations

A small section of a typical LAN-Phone 57 installation might consist of the elements in the diagram below. This is a more practical version of the preceding, theoretical diagram in that the Gatekeeper & Gateway in this example are on the server.

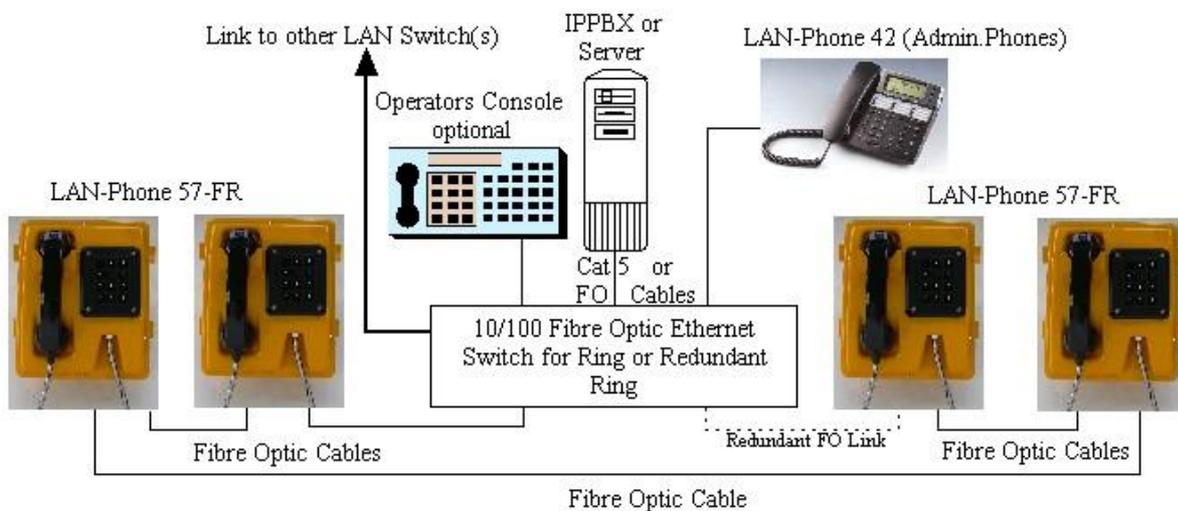
As can be seen from the diagram the F version of the LAN-Phone 57 can be connected directly to a Fibre Optic pair. The advantage of this over a normal LAN-Phone 57T / 42, 100 which can only be connected to a normal Cat 5 cable (100metres typical but up to 400metres Max), is that it can operate over much



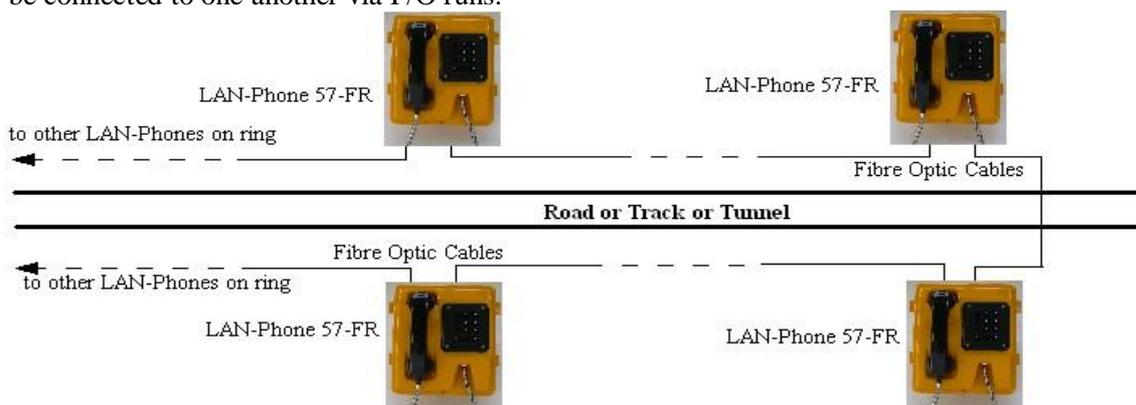
longer line lengths. Conventional telephone line lengths and greater are easily achievable.

Ring & Redundant Ring structures

The LAN-PHONE 57 enables sophisticated line structures to be built. Cascading can be effected using the F/O ports of the LAN-Phone 57FR. The cost saving advantage of cascading telephones is that only **one pair** of F/O fibres is required to connect **all the telephones** on a ring compared with the normal requirement of **one pair** of F/O fibres **per phone**. Enhanced reliability can be achieved through a redundant ring structure where if there is a fault anywhere on the ring a redundant connection can be instantly patched into the ring.



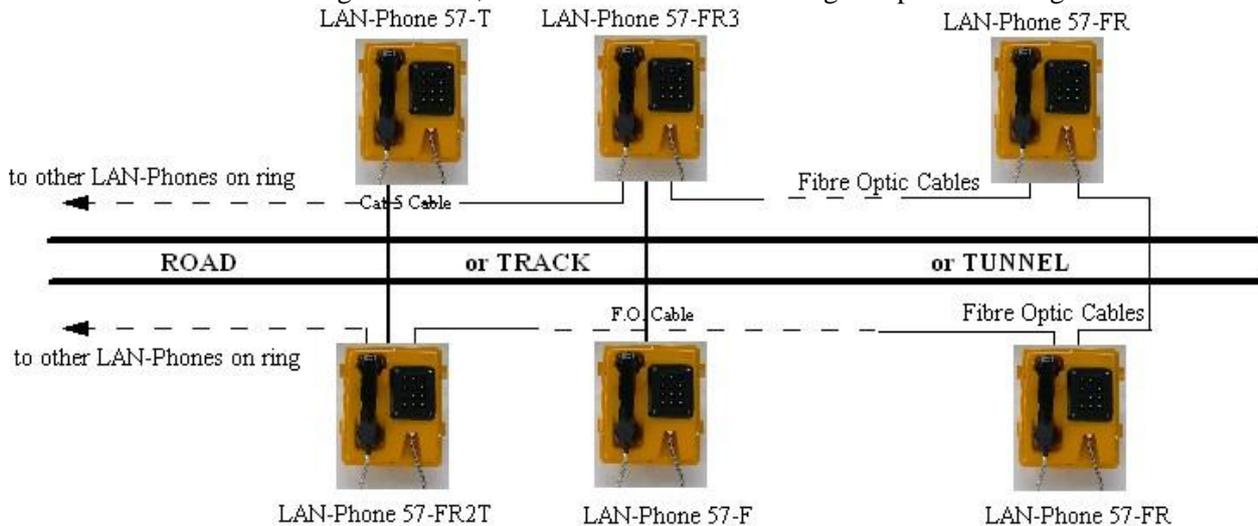
Redundant ring structures can be built up using the F/O ports of the LAN-PHONE 57. The figure above shows a redundant ring structure with LAN-PHONE 57 equipment. To construct a ring the first piece of equipment is connected to the last in the fiber optical line structure consisting of LAN-PHONE 57 equipment and the redundant fiber optical ring closed. Note: All the telephones in the redundant ring may only be connected to one another via F/O runs.



A more detailed section of a typical F/O Ring can be seen in the diagram above.

Alternative Fibre Optic Ring Structure

As can be seen from the diagram below, in addition to the normal ring it is possible using the



57-FR2T variant of the telephone to have an additional telephone "T" connected to it via Cat 5 cable. This can be a very useful facility especially where existing cable ducts are in place. An alternative is to use the 57-FR3 variant of the telephone when it is possible to have an additional F/O telephone "T" connected to it via a F/O cable.

VARIANTS

The LAN-PHONE 57 Range includes the following variants

LAN-Phone 57	CABLE	Inputs	Outputs
F	Fibre Optic Pair	Single F.O.	---
FR	Fibre Optic Pair	Dual F.O. (Cascade)	---
FR3	Fibre Optic Pair	Dual F.O. (Cascade)	Single F.O.
FR2T	Fibre Optic Pair	Dual F.O. (Cascade)	Single Cat 5

FEATURES

The LAN-PHONE 57 features

- an attractive yellow/orange enclosure
- it can be post or wall or desk mounted
- non-mechanical detection of the presence of the handset in its stowage
- very low Total Cost of Ownership with a high MTBF and low MTTR due to its extremely rugged construction, advanced concepts and reliable components
- the ability to add a variety of beacons or hooters
- electrical connections which may be brought in through standard glands in the base of the unit
- the case features a degree of protection IP65 min.

IMPORTANT NOTE

Customer must specify in detail exactly what type of fibre option is required

OPTIONS

The LAN-PHONE 57 can have an all black enclosure instead of the normal yellow

The LAN-PHONE 57 can have a curly cord to the handset

The LAN-PHONE 57 can have an internal ac power supply unit

The LAN-PHONE 57 can offer a variety of Hooters/Sounders and beacons for extra noisy environments.

In addition, a Headset can be provided instead of a Handset for extremely noisy environments.

The LAN-PHONE 57 can have a Logo to customer specifications (consult factory)