

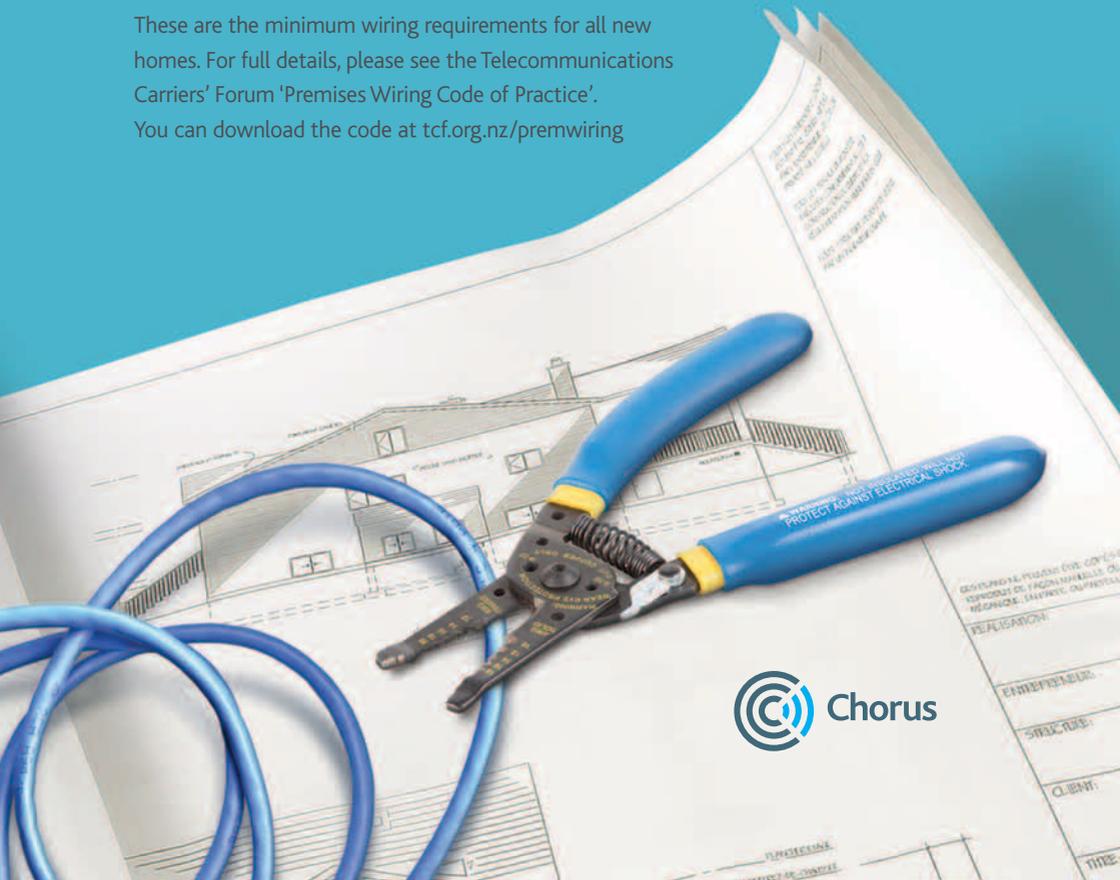
# WIRING HOMES FOR FIBRE

## An overview for wiring installers

### *Minimum communication cabling requirements*

These are the minimum wiring requirements for all new homes. For full details, please see the Telecommunications Carriers' Forum 'Premises Wiring Code of Practice'.

You can download the code at [tcf.org.nz/premiring](http://tcf.org.nz/premiring)



## These are the minimum cable installation requirements for new homes:

- Cabling must be 'star configuration'.
- A star wiring (home distributor) box needs to be located at the 'star point' to provide cross-connect and testing facilities.
- This star point must be internal, accessible and ideally located just above the External Termination Point (ETP) position. The star point will typically be set into the side wall of a utility room or garage.
- The star wiring box must be large enough to house devices such as a router and video splitter. It must also have integrated power sockets for these devices.
- Cables to be a minimum specification of Cat5e (UTP) and Tri-Shield RG6 Coax.
- Run two Cat5e cables and two RG6 from the star point to each outlet position.
- Run two Cat5e cables and four RG6 from the star point to the main TV position
- Leave at least 300mm of cable slack at each outlet.
- Run three Cat5 cables from the star point to the ETP. See over for details. Leave at least 500mm of cable slack at the ETP.
- Cable through the wall at the ETP must be protected within a short length of plastic pipe.
- Make sure all clearances between communication cables and power cables are maintained. See the TCF Premises Wiring Code of Practice for more detail on the segregation of services.

### Recommended outlets

When you're looking at where to install outlets or jackpoints in the new premises be sure to consider the following:

- At least two RJ45 type jackpoints with two 'F' co-axial outlets (four 'F' co-axial at the main TV position) on the same faceplate in each bedroom and normally occupied room. Avoid wet areas such as bathrooms and laundries. Two or more such outlets are recommended in the lounge, rumpus room and study.
- At the star wiring point the Cat5e cables should ideally be terminated on RJ45 type modular sockets mounted in a patch panel. This will allow very simple patching to/from routers and easy replacement if one becomes faulty.

### Testing and verifying is critical

Poorly installed wiring can affect the quality of the phone or broadband services a homeowner experiences. We strongly recommend that newly installed cabling is tested and verified by the installer as being able to operate at the speed it is rated for.

### Things to watch out for

The performance of communications cabling will vary if:

- Too much cable insulation is removed
- The communications cabling is too close to electrical cabling, causing interference
- The correct bend radius is exceeded
- Wiring is incorrectly terminated
- Copper pairs are not kept twisted as close as possible to the point of termination
- Poor quality components (e.g. patch cords and connectors) are used

## Setting up a star wiring box

It is the homeowner or builder's responsibility to supply the star wiring box, patch panel and patch cables. The homeowner's service provider will supply the residential gateway (RGW) and optical network terminal (ONT) to be installed in the star wiring box.

Here's the best way to set up a star wiring box. If you have any problems, call 0800 MYFIBRE (0800 693 427).

- The ETP position will typically be on the external wall of the garage or utility room in new homes.
- Make sure a plastic pipe is installed through the wall at the ETP position and up into the star wiring box – minimum of 20mm diameter pipe – use 300mm 90° bend. Do not use an elbow bend.
- Run the three Cat5 cables from the star point to the ETP position.
- Leave at least 1000mm of slack loop at the star wiring box and at least 500mm slack at the ETP position.

- Install a dual power outlet in the bottom of the star wiring box to power the equipment.
- The star wiring box must be installed in the inside wall above the ETP position. About eye level is ideal.
- Star wiring box minimum dimensions must be 350mm (W) x 700mm (H) x 80mm (D).

Special note: The door on the star wiring box must have louvers so air can circulate to keep the equipment cool.

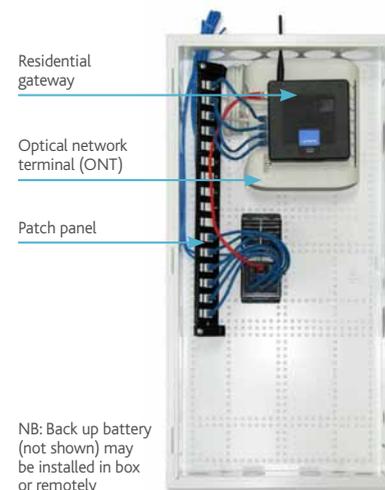


Figure 1: Home distributor

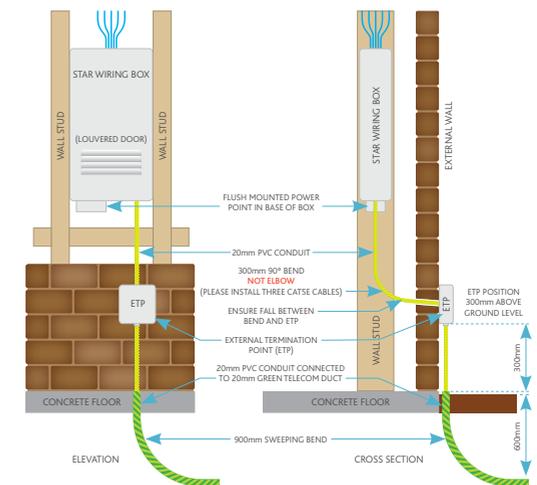
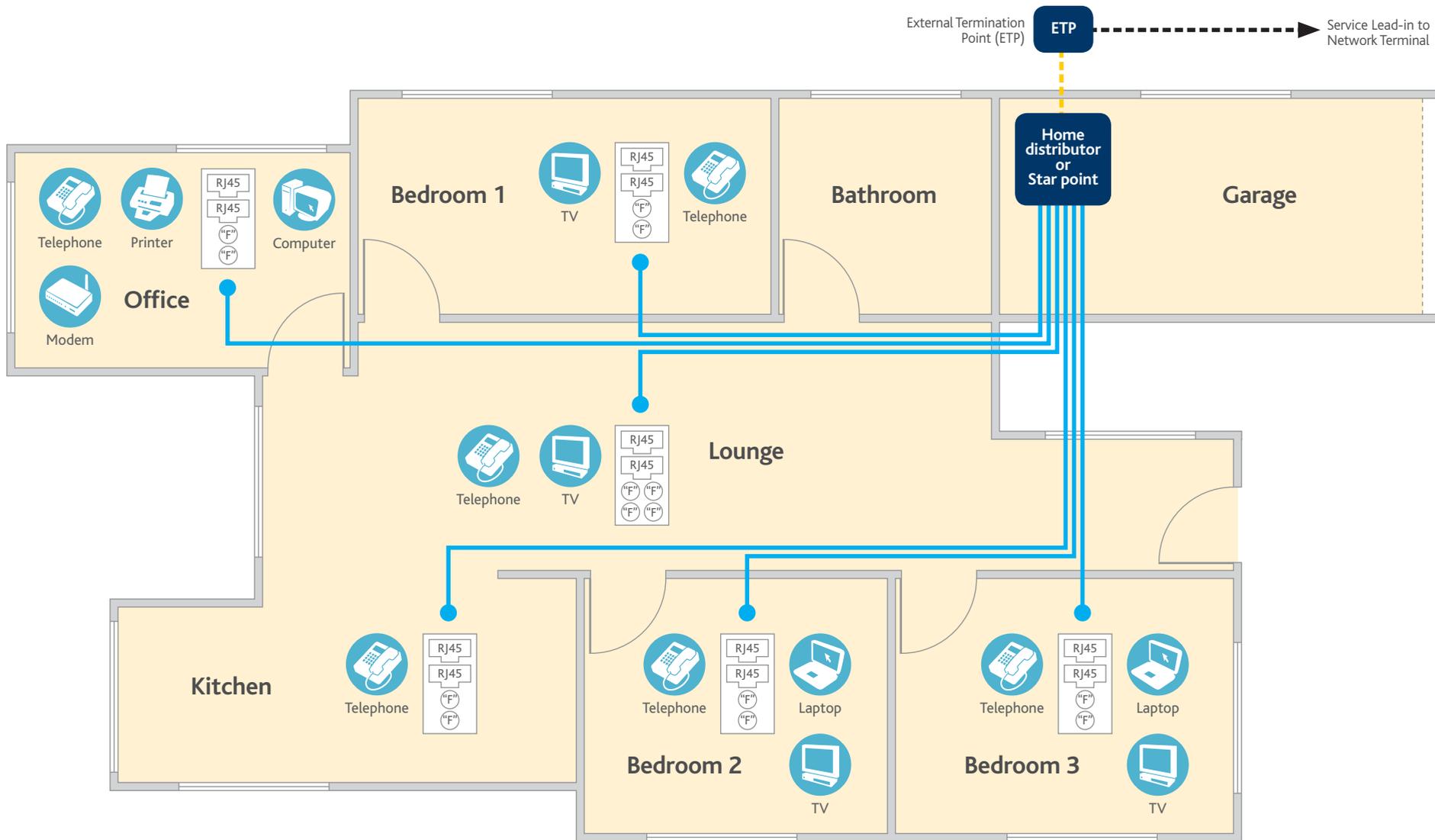
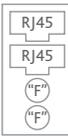
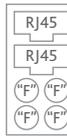


Figure 2: Installing the home distributor

Figure 1 shows a standard home distributor or star wiring box (actual unit may vary). The homeowner's service provider will supply the residential gateway and optical network terminal. The homeowner may also choose to install a back up power device.




 Telecommunications Outlet (TO) at the main TV position consisting of 2x RJ45 sockets and 2x "F" connector (Coax)


 Telecommunications Outlet (TO) consisting of 2x RJ45 sockets and 4x "F" connector (Coax)


 Cable Run consisting of 2x Cat5e cables and 2x RG6 Tri-shield Coax cable (4x RG6 to the main TV position)



*For full details, please see the  
TCF Premises Wiring Code of Practice.  
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