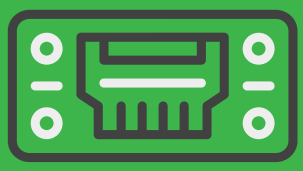
DUXNET

Best Practice Guide to SFP Selection & Compatibility

Not all SFPs are created equal,
and not all SFPs work in every device.

**Don't guess your optics...
Choose the right SFP!**



WHY SFP SELECTION MATTERS

Choosing the wrong module can result in:

- **Ports not coming up**
- **Intermittent link failures**
- **Reduced speeds or unstable connections**
- **Devices rejecting the module entirely**

In multi-vendor networks, compatibility is one of the most common causes of deployment delays and support calls.

Just because it fits… doesn't mean it works.

QUICK SFP SELECTION REFERENCE

Selecting the right SFP upfront prevents compatibility issues, avoids delays on site, and reduces rework. Use the table below as a quick reference during presales and ordering.

Network Scenario	Recommended SFP Type	Common Mistake to Avoid
Short cable runs (up to ±300m)	1G SX / Multi Mode	Over specifying long range optics
Building to building or campus links	1G LX / Single Mode	Mixing single mode and multi mode fibre
Switch to switch uplinks	Identical SFPs on both ends	Using different vendors or distances
Multi vendor network environments	Properly coded, tested SFPs	Assuming all "generic" SFPs will work
Replacing an existing optic	Match original spec exactly	Changing wavelength or fibre type
High density or critical uplinks	Standardised SFP choice	Mixing SFP types across sites

Remember: Matching distance, wavelength, fibre type, and coding is just as important as matching speed.

WHAT CAUSES COMPATIBILITY ISSUES?

SFP issues are often not obvious until deployment:

- **Vendor-specific coding and compatibility restrictions**
- **Using generic or incorrectly coded modules**
- **Mismatch between fibre type and SFP (single-mode vs multi-mode)**
- **Incorrect wavelength or distance specifications**
- **Mixing different SFP types on the same link**
- **Firmware limitations on switches or devices**

Without proper selection, even high-quality hardware can fail to perform.

PRE DEPLOYMENT CHECKLIST

Pre Deployment Checklist – Before You Order

Many SFP failures originate during specification or quoting, not during installation. Before ordering SFPs, confirm the following:

- Exact switch make, model, and port type
- Current device firmware and optic support limitations
- Port speed requirements (1G, 10G, etc.)
- Fibre type installed on site (single mode or multi mode)
- Actual link distance required (not theoretical maximums)
- Supported wavelength for the target equipment
- Whether third party or generic optics are restricted
- That identical SFP specifications will be used on both sides of the link
- Environment where it will be used.
  Do you need industrial SFP allowing for higher temperatures?

Confirming these details upfront reduces the risk of incompatible optics arriving on site and avoids last minute substitutions that introduce instability.

BEST PRACTICE CHECKLIST

- Confirm device compatibility before selecting SFPs
- Use properly coded SFPs matched to your target device
- Match SFP type to fibre (single-mode or multi-mode)
- Verify distance and wavelength requirements for the link
- Use identical SFPs on both ends of the connection where possible
- Avoid mixing vendors unless compatibility is confirmed
- Keep spare, pre-tested SFPs for quick replacement
- Standardise SFP selection across sites to simplify support

PRO INSTALLER TIPS

- One incorrectly coded SFP can bring down an entire uplink
- Short-range links don't need long-distance optics - don't over spec
- Label installed SFPs clearly for easier maintenance and replacement
- Always check link light and interface status after installation
- If a port doesn't come up, swap the SFP before troubleshooting the network
- Use locally supported SFPs, not grey imports with no backing

BASIC SFP FAULT FINDING FLOW

Simple Fault Finding Flow for SFP Related Issues

When a link does not come up or remains unstable, check the SFP before troubleshooting the broader network.

If a port does not come up:

1. Check for link light and interface status on the device
2. Replace or swap the SFP first, before changing cabling or configuration
3. Confirm both ends of the link use identical SFP specifications
4. Verify fibre type, polarity, and cleanliness
5. Check device logs for SFP compatibility or rejection warnings

In many cases, replacing an incorrectly coded or mismatched SFP resolves the issue immediately.

REALITY CHECK

In South Africa, mixed-vendor environments are the norm, not the exception. Many switches will reject third-party or incorrectly coded SFPs, even if they meet the same technical specifications.

Most "faulty SFP" issues are compatibility problems, not hardware failure.

LET DUXNET SIMPLIFY SFP COMPATIBILITY

DuxNet SFPs, engineered by Duxbury Networking, are locally coded and tested for multi-vendor compatibility, reducing deployment risk and support time.

Speak to our team for guidance on selecting the right SFP for your network.

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