### imall

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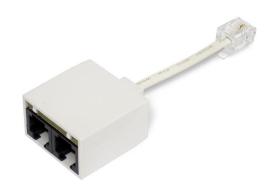
## NanoFilter Z-321NFW-50 xDSL over POTS In-Line Filter

#### Description

The Z-321NFW-50 is a small in-line filter designed to expedite the service delivery and improve the performance of digital subscriber line (DSL) services. This model filters all telephone sets, facsimile machines, answering machines, etc. individually or in groups. This in-line DSL filter design electronically isolates the high-speed DSL data streams from the voice band plain old telephone service (POTS) equipment. This design effectively blocks the DSL, and other radio frequencies from 25 kilohertz to 30 Megahertz.

#### Features

- Data Protection Isolates telephone impedances changes from DSL equipment
- Excellent DSL band attenuation that protects voice band equipment and prevents intermodulation distortion from degrading data rates
- Compatible with all major DSL standards including ADSL, ADSL2+, VDSL, and VDSL2
- Voice Protection Isolates DSL band frequencies from voice band equipment
- Excellent longitudinal balance
- Compatible with Caller ID, facsimile and metallic loop testing
- RoHS compliant
- CE Certified
- Compliant with UL 60950, and FCC Part 68



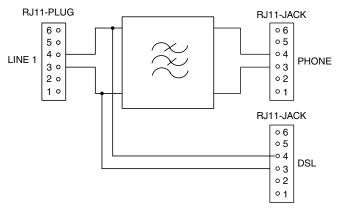
The in-line DSL nanoFILTER

### Applications

The Z-321NFW-50 filters are used with other Z-BLOCKER filters distributed throughout the subscribers' premises to isolate all voice band equipment devices such as cordless telephones, answering machines, fax machines, dial-up modems, and television set-top boxes. The Z-321NFW-50 in-line DSL filter is one of

many

filters manufactured by Pulse for subscriber installed digital services within homes, offices, and hotels. Excelsus is the number one selling brand of DSL filters worldwide.



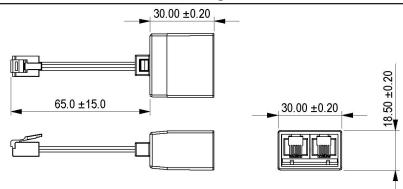
Z-321NFW-50 Block Schematic



# NanoFilter Z-321NFW-50 xDSL over POTS In-Line Filter

| NanoFilter Z-321NFW-50 S   | Specifications  |         |
|--|---|---------|
| Line side differential input blocking impedance                                    |   |         |
| At 20 kHz  |   | >2 k    |
| At 30 kHz  |   | >3 k    |
| From 5 MHz to 10 MHz   |   |         |
| 1 kHz insertion loss between 600 $\Omega$ resistive                                |   | <0.2 dB |
| 1 kHz/2.8 kHz slope between  | $600 \Omega$ resistive                                  |         |
| Single filter  |   | <0.1 dB |
| With 3 filters   |   | <1.1 dB |
| DC resistance in Ohms  |   |         |
| Tip to Tip, and Ring to Ring   |   | <12 Ω   |
| Tip to Ring  |   | >10 Q   |
| Longitudinal Balance per IEE   | E method  |         |
| From 200 - 1 kHz   |   | >58 dB  |
| From 1 kHz - 3 kHz   |   | >53 dB  |
| xDSL Insertion Loss (with ZD   | OSL)  |         |
|  | 25 kHz  | ≥16 dB  |
|  | 40 kHz  | ≥25 dB  |
|  | 1.1 MHz   | ≥70 dB  |
|  | 2.2 MHz   | ≥70 dB  |
|  | 30 MHz  | ≥55 dB  |
| Low pass roll off (slope) between 600 $\Omega$ and ADSL Transmission Unit - Remote |   | >26 dB  |
| Inter-Modulation Distortion First and Second order products                        |   | >60 dB  |
| Envelope Delay 300 Hz - 2800 Hz  |   | <100 µs |
| 600 Ω POTS Return Loss (with   | h ZADSL)  |         |
| Single filter  | SRL Low   | >30 dB  |
|  | ERL   | >18 dB  |
|  | SRL High  | >14 dB  |
| +2 bridged filters   | SRL Low   | >18 dB  |
|  | ERL   | >13 dB  |
|  | SRL High  | >8 dB   |
| Connectors: RJ-11 Jacks and I 50 micro-inches of gold platin                       | RJ11 Plug<br>g over ≥100 micro-inches of nickel plating |         |
| Compliant and listed with UL / CSA 60950, FCC CFR 47 Part 68                       |   |         |

#### **Mechanical specifications**





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