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ArchiCore Electronics CO., LTD



## Product Specification

|                           |                                  |
|---------------------------|----------------------------------|
| <b>Product name</b>       | <b>CPPFA001</b>                  |
| <b>Product Type</b>       | <b>Customer premise splitter</b> |
| <b>System Application</b> | <b>VDSL Over POTS</b>            |
| <b>Author</b>             | <b>Alvin Liou</b>                |
| <b>Approved By</b>        | <b>Sundi Lin</b>                 |

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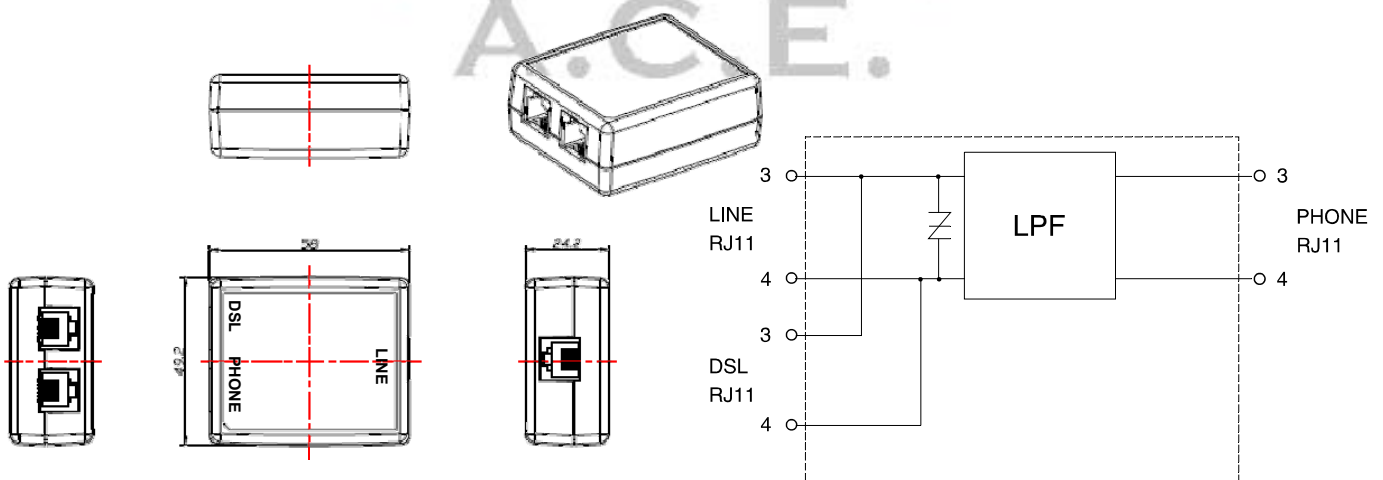


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The CPPFA001 is a splitter module that has been specifically designed to implement the functionality of low pass filter in POTS over VDSL application.

Very-high-speed Digital Subscriber Line (VDSL) technology is dedicated, point to point, public network access technology that allow multiple forms of data, voice, and video to be carried over twisted-pair copper wire on the local loop between a network service provider's (NSP'S) central office and the customer site or on local loops created either intra-building or intra-campus. Best of all, VDSL delivers this high speed performance over existing copper telephone line all while allowing traditional voice service to coexist without interruption through POTS low pass filters. The POTS-splitter on the customer premises side consists of a lowpass section.

The CPPFA001 integrate low pass filter that block the high frequency energy from reaching the POTS device and provide isolation from impedance effects of the POTS device on VDSL. In addition, these filter will also attenuate any wideband impulse noise generated by the POTS device due to the interruption of loop current (e.g. pulse dialing or on hook / off hook transfer) Because the POTS splitter connects directly to the subscriber loop media, it must also provide some protection for externally induced line hits or faults which could damage any attached equipment or endanger humans interacting with the installed equipment. The circuit protection will be provided mostly by standard central office line protection means and additional protection measures built into POTS splitter to protect against line overstress which could damage the splitter itself.





**Reference :**

|  |  |
|--|--|
| ETSI TS 101 952-1-1<br>V1.2.1 (option A) | Access network xDSL transmission filters; Part 1: ADSL splitters for European deployment; Sub-part 1: Generic specification of the low pass part of DSL over POTS splitters including dedicated annexes for specific xDSL variants |
| ETSI TS 101 952-2-1                      | Access network xDSL transmission filters; Part 2: VDSL splitters for European deployment; Sub-part 1: Specification of the low pass part of VDSL/POTS splitters  |
| ITU-T K.21                               | Resistibility of telecommunication switching equipment to Overvoltages and overcurrents  |

**Requirements:**

| Title  |                 | Conditions  |
|--|-----------------|---|
| DC resistance  | $\leq 50.0$ ohm | Tip to Ring at the POTS interface with the U-R interface shorted. |
| Off hook Insertion loss for $Z_R$ and $600 \Omega$         | $< 1.0$ dB      | 1 kHz   |
| Off hook Distortion for $Z_R$ and $600 \Omega$             | $< \pm 1.0$ dB  | $200 \text{ Hz} < f < 4 \text{ kHz}$                              |
| Off hook return loss of $Z_R$                              | $\geq 12$ dB    | $300 \text{ Hz} < f < 3.4 \text{ kHz}$                            |
|  | $\geq 8$ dB     | $3.4 \text{ kHz} < f < 4 \text{ kHz}$                             |
| Off hook return loss of $Z_{SL}$                           | $\geq 12$ dB    | $300 \text{ Hz} < f < 3.4 \text{ kHz}$                            |
|  | $\geq 8$ dB     | $3.4 \text{ kHz} < f < 4 \text{ kHz}$                             |
| Metering pulse   | $\leq 5$ dB     | 12 kHz/16KHz  |
| Longitudinal conversion loss LCL                           | $\geq 40$ dB    | $50 \text{ Hz} < f < 600 \text{ Hz}$ , $R=300 \Omega$             |
|  | $\geq 46$ dB    | $600 \text{ Hz} < f < 3.4 \text{ kHz}$ , $R=300 \Omega$           |
|  | $\geq 40$ dB    | $3.4 \text{ kHz} < f < 4 \text{ kHz}$ , $R=300 \Omega$            |
|  | $\geq 40$ dB    | $4 \text{ kHz} < f < 30 \text{ kHz}$ , $R=50 \Omega$              |
|  | $\geq 45$ dB    | $30 \text{ kHz} < f < 2208 \text{ kHz}$ , $R=50 \Omega$           |
|  | $\geq 30$ dB    | $2208 \text{ kHz} < f < 30 \text{ MHz}$ , $R=50 \Omega$           |
| Off-hook isolation   | $\geq 55$ dB    | $32 \text{ kHz} < f < 30 \text{ MHz}$                             |
| Insertion loss at high frequency between LINE and DSL port | $< 3$ dB        | $32 \text{ kHz} < f < 50 \text{ kHz}$                             |
|  | $< 1$ dB        | $50 \text{ kHz} < f < 30 \text{ MHz}$                             |



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**Revision History:**

| Rev. | Author | Approved by | Description of change | Issued date |
|------|--------|-------------|-----------------------|-------------|
| 0    | Alvin  | Sundi       | New release           | 2010/12/10  |
|      |        |             |                       |             |
|      |        |             |                       |             |
|      |        |             |                       |             |

