



**VDSL Central Office POTS Splitter**  
**Functional Specification**

**The Product Name : DT60-2020AA**

**REV :00**

## **Contents:**

<b>1. Introduction .....</b>	<b>3</b>
<b>2. Features.....</b>	<b>3</b>
<b>3. Abbreviations.....</b>	<b>4</b>
<b>4. Block Diagram.....</b>	<b>5</b>
<b>5. Frequency Diagram.....</b>	<b>5</b>
<b>6. Electrical Characteristics.....</b>	<b>6</b>
<b>7. Test Equipment.....</b>	<b>7</b>
<b>8. Mechanical Requirements.....</b>	<b>8</b>
<b>9. External Interfaces.....</b>	<b>9</b>

## **1. Introduction**

This document contains the requirements for VDSL Splitter Recommendations. The splitter is protection from the high-frequency transients and voiceband service, the LPF provide protection from VDSL signals which may impact through non-linear or other effects, remote devices (handset, fax, voiceband, modem, etc.) and central office operation.

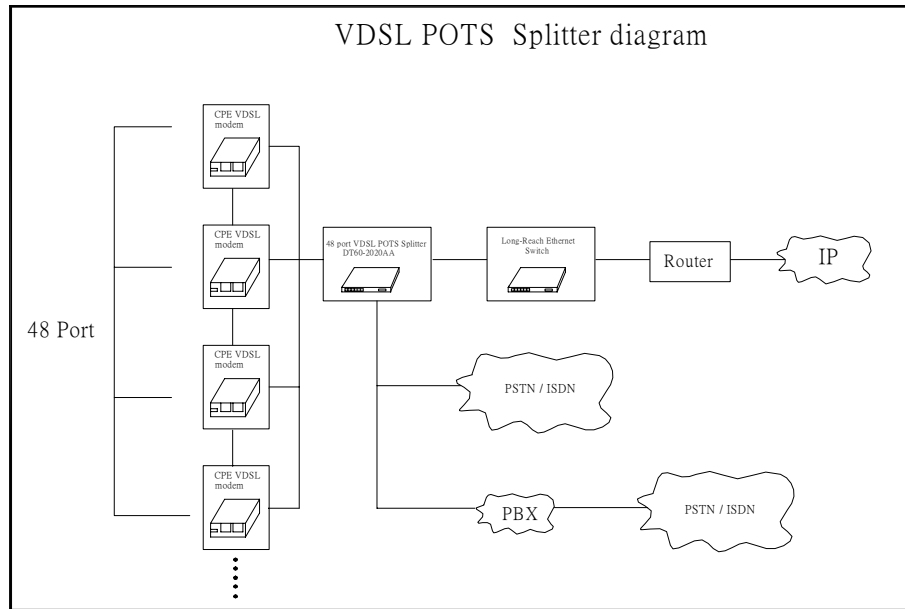
## **2. Features**

- 1U 19" Rack
- Using CHAMP 50 pin Female connector.
- Have 48 loops on the chassis.
- Designed for implementation of VDSL Splitter application.
- -10 to 70 °C operating temperature range.
- Provides excellent isolation between VDSL and ISDN or POTS.

### **3. Abbreviation**

VDSL	Very High bit rate Digital Subscriber Loop
Co	Central Office
CPE	Customer Premises Equipment
DSLAM	Digital Subscriber Line Access Multiplier
LPF	Low Pass Filter
HPF	High Pass Filter
POTS	Plain Old Telephone Service
ISDN	Integrated services Digital Network

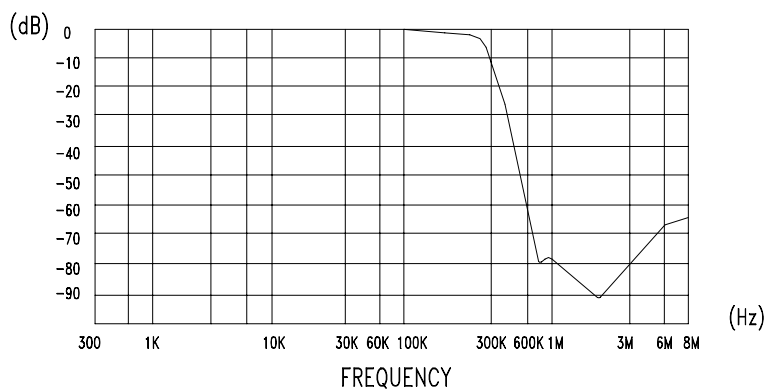
### 4. Block Diagram



This shows the internal diagram of the splitter. The lines connected to the DSLAM and the CPE are the VDSL signals. The DSLAM and CPE have internal high pass filters.

### 5. Frequency Diagrammatic

The splitter is supposed to filter all the frequency above 900 KHz



## **6. Electrical Characteristics**

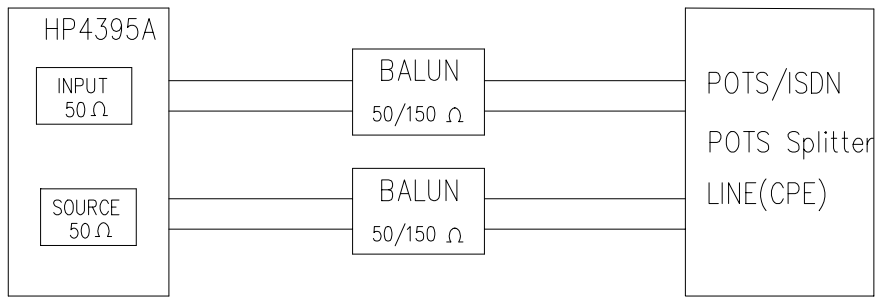
The table shows the entire electrical requirement for the POTS splitter

ELECTRICAL CHARACTERISTICS	
ATTENUATION	60dB Min. @800KHz ~ 7.9MHz
PASSBAND FREQUENCY	20KHz ~ 120KHz @100mAdc
O/P IMPEDANCE	150 $\Omega$
I/P IMPEDANCE	150 $\Omega$
INSERTION LOSS	0.8dB Max. @20KHz ~ 100KHz 1.0dB Max. @100KHz ~ 120KHz
RETURN LOSS	20dB Min.

## 7. Test Equipment

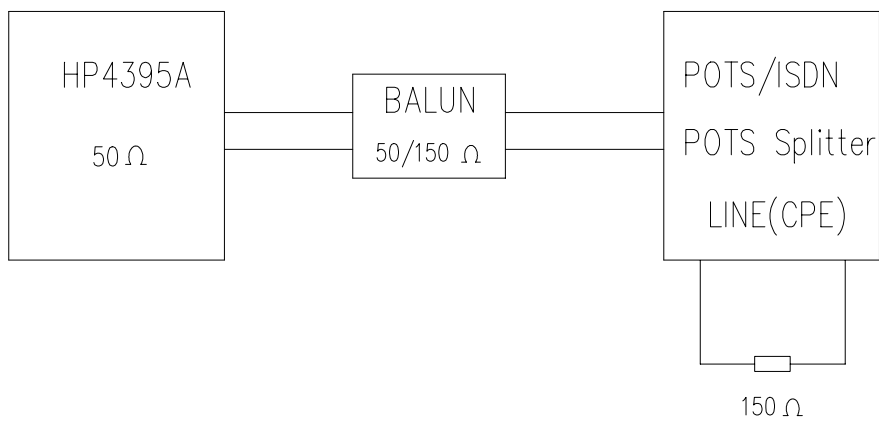
### a. Insertion Loss, Attenuation Distortion, Delay Distortion Test Equipment

Test Equipment



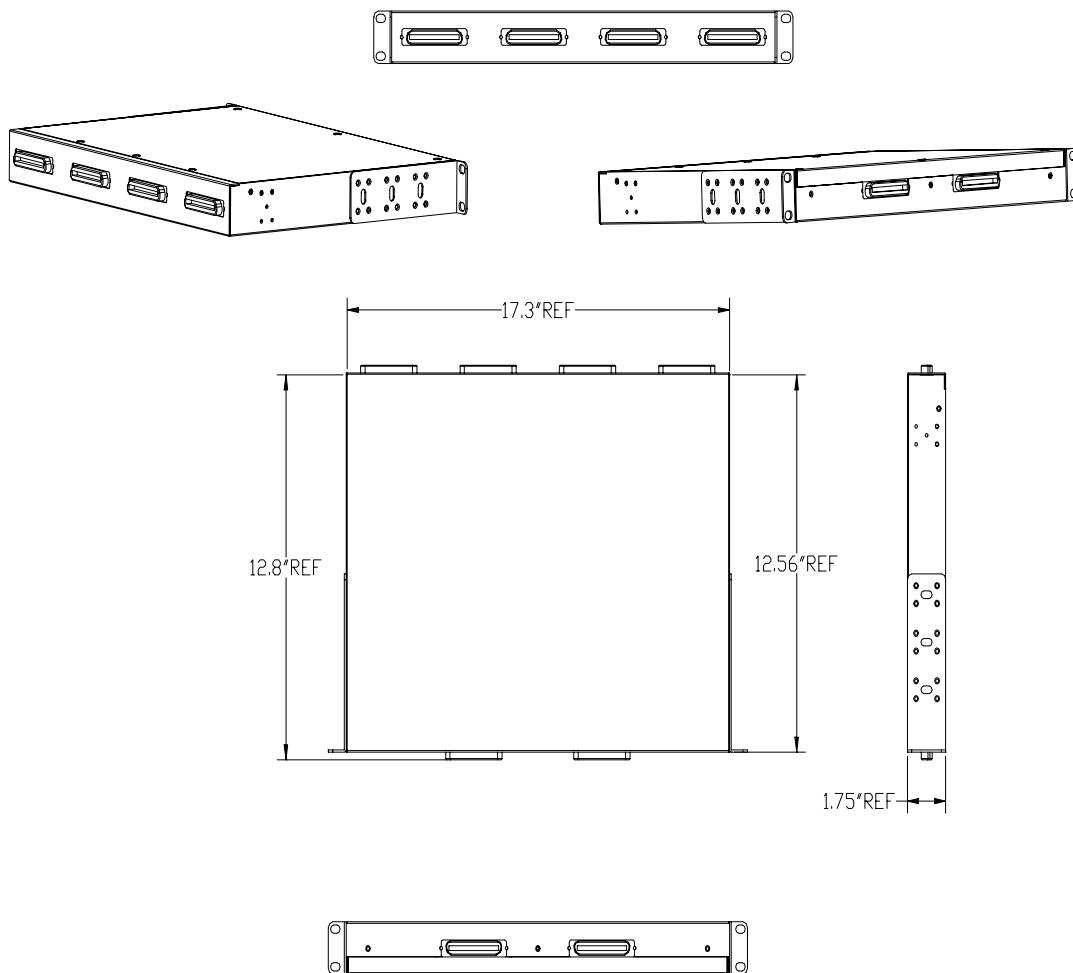
### b. Return Loss Test Equipment

Test Equipment



### **8. External Interfaces**

The POTS splitter will be designed for a 19" rack, the height is 1U and depth is 12.56". Show the mechanical shape on the under.





## **9.External Interfaces**

The splitter has six CHAMP 50 pin Female connectors, each having the same pin out, which is described in table.

<b>Function</b>	<b>Pin</b>	<b>Pin</b>	<b>Function</b>
<b>Port 1 TIP</b>	<b>1</b>	<b>26</b>	<b>Port 1 Ring</b>
<b>Port 2 TIP</b>	<b>2</b>	<b>27</b>	<b>Port 2 Ring</b>
<b>Port 3 TIP</b>	<b>3</b>	<b>28</b>	<b>Port 3 Ring</b>
<b>Port 4 TIP</b>	<b>4</b>	<b>29</b>	<b>Port 4 Ring</b>
<b>Port 5 TIP</b>	<b>5</b>	<b>30</b>	<b>Port 5 Ring</b>
<b>Port 6 TIP</b>	<b>6</b>	<b>31</b>	<b>Port 6 Ring</b>
<b>Port 7 TIP</b>	<b>7</b>	<b>32</b>	<b>Port 7 Ring</b>
<b>Port 8 TIP</b>	<b>8</b>	<b>33</b>	<b>Port 8 Ring</b>
<b>Port 9 TIP</b>	<b>9</b>	<b>34</b>	<b>Port 9 Ring</b>
<b>Port 10 TIP</b>	<b>10</b>	<b>35</b>	<b>Port 10 Ring</b>
<b>Port 11 TIP</b>	<b>11</b>	<b>36</b>	<b>Port 11 Ring</b>
<b>Port 12 TIP</b>	<b>12</b>	<b>37</b>	<b>Port 12 Ring</b>
<b>Port 13 TIP</b>	<b>13</b>	<b>38</b>	<b>Port 13 Ring</b>
<b>Port 14 TIP</b>	<b>14</b>	<b>39</b>	<b>Port 14 Ring</b>
<b>Port 15 TIP</b>	<b>15</b>	<b>40</b>	<b>Port 15 Ring</b>
<b>Port 16 TIP</b>	<b>16</b>	<b>41</b>	<b>Port 16 Ring</b>
<b>Port 17 TIP</b>	<b>17</b>	<b>42</b>	<b>Port 17 Ring</b>
<b>Port 18 TIP</b>	<b>18</b>	<b>43</b>	<b>Port 18 Ring</b>
<b>Port 19 TIP</b>	<b>19</b>	<b>44</b>	<b>Port 19 Ring</b>
<b>Port 20 TIP</b>	<b>20</b>	<b>45</b>	<b>Port 20 Ring</b>
<b>Port 21 TIP</b>	<b>21</b>	<b>46</b>	<b>Port 21 Ring</b>
<b>Port 22 TIP</b>	<b>22</b>	<b>47</b>	<b>Port 22 Ring</b>
<b>Port 23 TIP</b>	<b>23</b>	<b>48</b>	<b>Port 23 Ring</b>
<b>Port 24 TIP</b>	<b>24</b>	<b>49</b>	<b>Port 24 Ring</b>
<b>No Connect</b>	<b>25</b>	<b>50</b>	<b>No Connect</b>