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**1. Features**

- Electrically designed per ETSI RTS/TM6-06006
- 1U/6U 19" Rack depth 9.35"
- Using RJ-21 50 pin (Telco) connector.
- Rack mountable 24-port splitter cards.
- Handles all ISDN/POTS loop current from 0mA to 100mA.
- Designed for implementation of ADSL CO application.
- Designed to meet UL-1950, UL94V-0, IEC950 section 6 surge ITU K.21, FCC part68, including Australia and Nordic Deviations 250V Main.
- 0 to +55 °C operating temperature range.
- -10 to +70 °C storage temperature range.
- Operation Humidity 10 to 90% RH
- Provides excellent isolation between ADSL and ISDN/POTS.

## 2. Description

This document contains the requirements for ADSL over ISDN filter Recommendations. Delta Annex B series CPE and CO splitter enables ADSL services to share the same phone line with existing POTS and ISDN services. The ISDN filter on the CO side is a low pass filter, which separates the POTS/ISDN services from the ADSL bands. The purpose of the filter is to suppress out band noises and the protection from the high-frequency transients to voice band services.

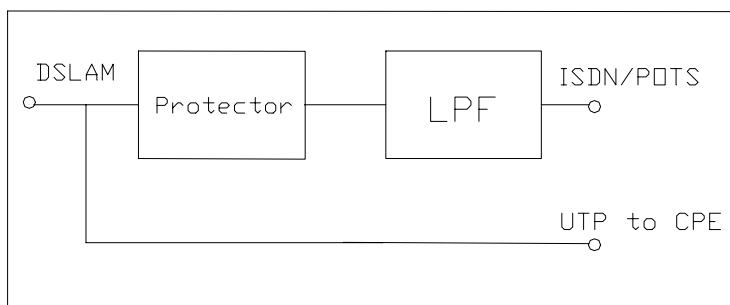
DT60-5024AB: 24 ports in 1U rack

DT60-5240AB: 240 ports in 6U rack

## 3. Abbreviation

|      |                                     |
|------|-------------------------------------|
| ADSL | Asymmetric Digital Subscriber Line  |
| CPE  | Customer Premises Equipment         |
| LPF  | Low Pass Filter                     |
| POTS | Plain Old Telephone Service         |
| ISDN | Integrated services Digital Network |

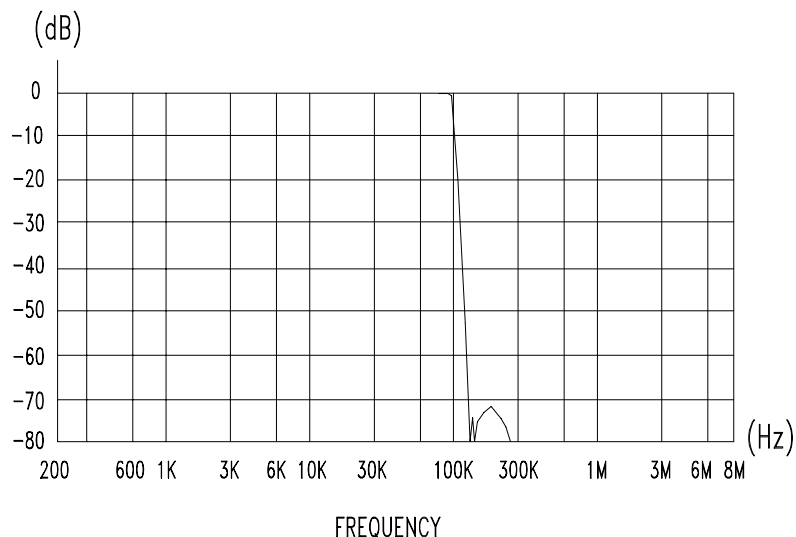
#### 4. Block Diagram



This diagram shows the internal diagram of one line of the splitter. The line connected to the DSLAM and the CPE are the ADSL signals. Total has 24 lines in a single card.

#### 5. Frequency Diagram

The splitter is supposed to filter all the signals above 99 kHz



## 6. Electrical Characteristics

The table shows the entire electrical requirement for the ISDN/POTS splitter

| Item                     | Note                                                                                                                                       |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| PASSBAND                 | DC~99K Hz                                                                                                                                  |
| 3dB Cutoff Frequency     | 99 KHz                                                                                                                                     |
| ATTENUATION DISTORTION   | ±1.0 dB Max. @200Hz~80KHz                                                                                                                  |
| INSERTION LOSS           | 0.8 dB Max. @1KHz~40KHz @135Ohm<br>2.0 dB Max. @40KHz~80KHz @135Ohm<br>1.2 dB Max. @1KHz~60KHz @150Ohm<br>2.0 dB Max. @60KHz~80KHz @150Ohm |
| RETURN LOSS              | 16 dB Min. @200Hz~40KHz<br>14 dB Min. @40KHz~80KHz                                                                                         |
| STOPBAND                 | 140KHz~8.0MHz                                                                                                                              |
| ATTENUATION              | 65dB Min. @150KHz~1104KHz                                                                                                                  |
| LONGITUDINAL BALANCE     | 30dB Min. @300Hz~30KHz<br>40dB Min. @30KHz~1104KHz<br>30dB Min. @1104Hz~10MHz                                                              |
| D.C RESISTANCE EACH LINE | 12.0Ω Max.                                                                                                                                 |
| LOOP CURRENT             | 0 TO 100mA                                                                                                                                 |
| IMPEDANCE                | 135Ω/150Ω                                                                                                                                  |
| INSULATION RESISTANCE    | 250VDC @TIP TO RING                                                                                                                        |

## 7. Mechanical Requirements

- (1) The POTS splitter is designed for a 19" rack, the height is 1U and depth is 9.35".



Front Panel



Rear Panel

- (2) The POTS splitter will be designed for a 19" rack, the height is 6U and depth is 10". Show the mechanical front and rear on under figure.



Figure 1. Shown the Front panel



Figure 2. Shown the Rear panel

## 8. External Interfaces

The splitter has three RJ-21 connectors, each having the same pin out, which is described in table.

| Function           | Pin       | Pin       | Function            |
|--------------------|-----------|-----------|---------------------|
| <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>   |

## Telco Cable Wire Cross List

| PIN | Line Color | Line Dot | PIN | Line Color | Line Dot |
|-----|------------|----------|-----|------------|----------|
| 1   | Blue       | White    | 26  | White      | Blue     |
| 2   | Orange     | White    | 27  | White      | Orange   |
| 3   | Green      | White    | 28  | White      | Green    |
| 4   | Brown      | White    | 29  | White      | Brown    |
| 5   | Gray       | White    | 30  | White      | Gray     |
| 6   | Blue       | Red      | 31  | Red        | Blue     |
| 7   | Orange     | Red      | 32  | Red        | Orange   |
| 8   | Green      | Red      | 33  | Red        | Green    |
| 9   | Brown      | Red      | 34  | Red        | Brown    |
| 10  | Gray       | Red      | 35  | Red        | Gray     |
| 11  | Blue       | Black    | 36  | Black      | Blue     |
| 12  | Orange     | Black    | 37  | Black      | Orange   |
| 13  | Green      | Black    | 38  | Black      | Green    |
| 14  | Brown      | Black    | 39  | Black      | Brown    |
| 15  | Gray       | Black    | 40  | Black      | Gray     |
| 16  | Blue       | Yellow   | 41  | Yellow     | Blue     |
| 17  | Orange     | Yellow   | 42  | Yellow     | Orange   |
| 18  | Green      | Yellow   | 43  | Yellow     | Green    |
| 19  | Brown      | Yellow   | 44  | Yellow     | Brown    |
| 20  | Gray       | Yellow   | 45  | Yellow     | Gray     |
| 21  | Blue       | Purple   | 46  | Purple     | Blue     |
| 22  | Orange     | Purple   | 47  | Purple     | Orange   |
| 23  | Green      | Purple   | 48  | Purple     | Green    |
| 24  | Brown      | Purple   | 49  | Purple     | Brown    |
| 25  | Gray       | Purple   | 50  | Purple     | Gray     |