

## LTE Filtering.

Demand for broadband Internet on mobile has not stopped growing in recent years and there is every indication that it will continue to do so in the near future. Users want increasingly faster and more efficient mobile access to the Net; a desire that has culminated in the creation of LTE (Long Term Evolution).

However, what is clear is that LTE will be a key factor for the deployment of mobile internet for two main reasons:

- Users want a data connection that downloads and uploads at a faster speed
- Manufacturers and operators want a less complex standard that reduces costs

How do the new LTE transmissions affect existing TV signals?

Let's analyse the frequencies. LTE uses frequencies from 791 to 862 MHz:

791MHz to 821MHz: Downstream

832MHz to 862MHz: Upstream

The small separation between the band reserved for TV and the LTE band (just 1MHz), as well as the transmitting power it uses (up to 67 dBm) the downstream signal will cause the most interference of the two. This signal must be blocked, using antennas and filters, before the first active component of the reception system.

However, the damage that can be caused by the signal transmitted by LTE (4G) mobiles is not negligible. As the upstream signal is much less powerful than the downstream signal, it has the disadvantage of being close to the input points: Televisions, outlets, poor quality cable and so on.

For that reason, we will have to guarantee the correct installation of the passive elements and the use of user filters connected to receivers (TV, STB...) to prevent the entry of interference in the distribution network via these elements.

Please see LTE filters available from **teldis** on the next page.

**The LTE/4G frequency allocations** following OFCOM spectrum auction of 2012-13 are as follows:

Vodafone Limited - 800 MHz allocation: 801 to 811 MHz and 842 to 852 MHz (matched)

Telefonica (UK Limited) - O2 - 800 MHz allocation: 811 to 821 MHz and 852 to 862 MHz (minimum coverage commitment)(matched)

Everything Everywhere Ltd (EE)(formerly Orange and T Mobile) - 800 MHz allocation: 796 to 801 MHz and 837 to 842 MHz (matched)

Hutchison 3G UK Ltd - 3 - 800 MHz allocation: 791 to 796 MHz and 832 to 837 MHz (matched)

## UCFL11x/XX - Universal Cluster Filter Leveller

UCFL115/CP - Universal Cluster Filter Leveller for Crystal Palace Transmitter

Best for large communal system, use at the head end.



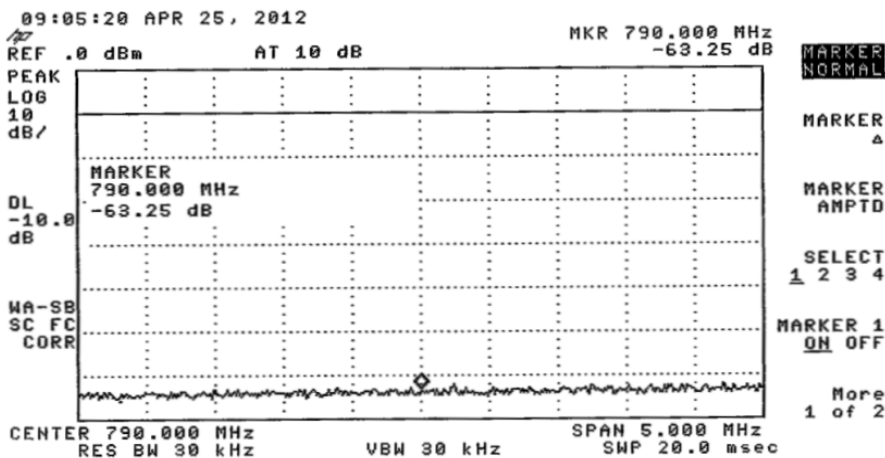
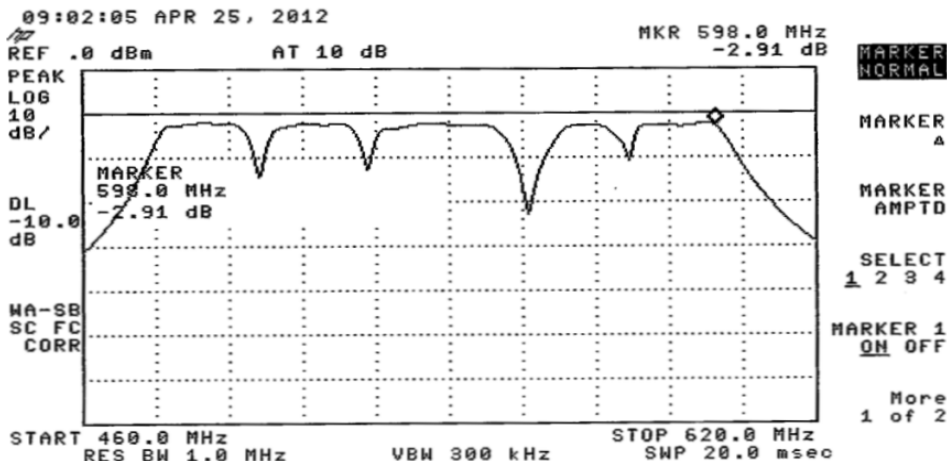
The Universal Cluster Filter Leveller (UCFL) is designed for the simultaneous filtering and level control of digital terrestrial television services after digital switchover and includes all the proposed future multiplexes.

Because the UCFL is a passive device it cannot suffer PSU failure and is not damaged by an induced voltage as a result of lightning activity, indeed its ability to arrest the surge actually protects any subsequent amplifier. Because the rejection in the LTE band is greater than 50dB it is almost certainly the only LTE filter you are ever likely to need.

- Level control of multiplex clusters
- Low insertion loss 3-4dB
- Excellent LTE filtering >50dB
- Mechanically robust passive device combats induced voltage surges
- Ultra long lifespan
- Existing devices can be bench re-aligned at low cost
- Connectors: f female and f male

- Size: W125 x H160 x D38 for a 5 cluster leveller

The UCFL115/CP is designed and aligned for terrestrial television signals from the Crystal Palace transmitter. With a single input and output it passes five clusters of channels: 22-23, 25-26, 28-30, 33 & 35-36 giving excellent rejection to unwanted portions of the RF spectrum.

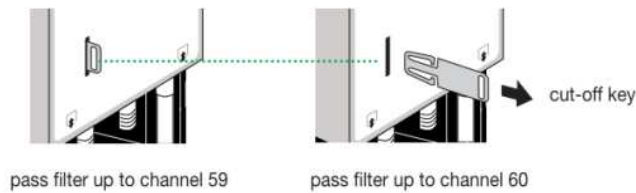


**At 790MHZ attenuation of UCFL115/CP is -63.25dB!**

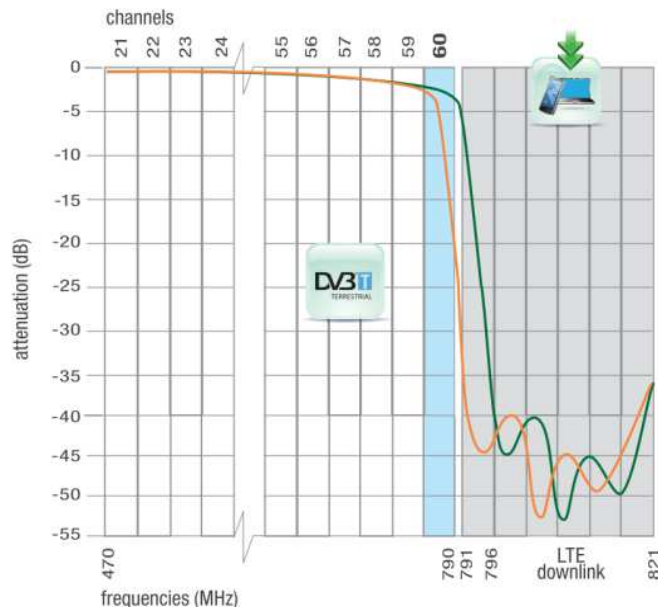
## FLTE601 – LTE Stop Filter with cut-off 2 cut-off frequencies ch. 59 or 60



- High-rejection helicoid filter designed with a new concept.
- One single filter with two stop frequencies on channel 59 or 60, depending on the radio spectrum, the FLTE601 can be configured as a pass filter up to channel 59 or channel 60. A built-in key makes it easy to do.



- Designed for most installations, comparable with the top-range filters on the market, capable of providing maximum protection to TV installations, preventing damaging LTE down-links.
- In cases in which the TV installation is very close to the LTE base stations and channel 60 is available, it may be necessary to combine the LTE Flashd Antenna + FLTE601 filter.
- Minimal losses on the highest TV channel and rejection of more than 45 dB to the LTE frequencies.



- Equipped with a coaxial cable coupling on both ends, making the connection easier for the installer, with the subsequent time savings.
- Housed in weatherproof box with an IP55 protection level.
- Size: W96 x H125 x D46mm

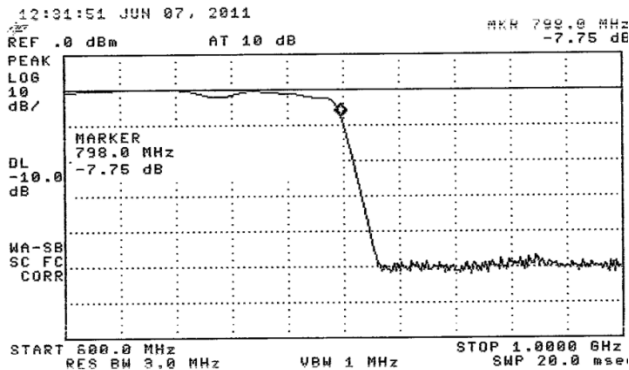
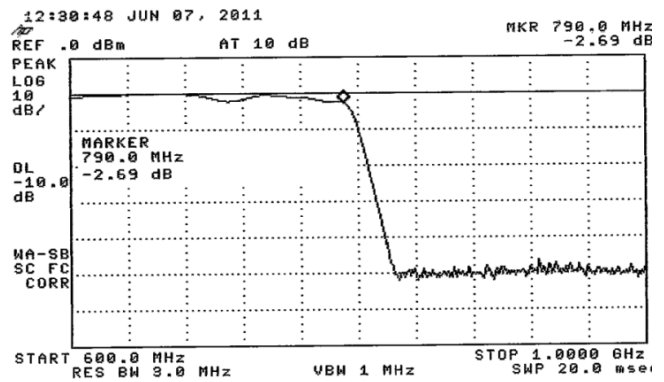
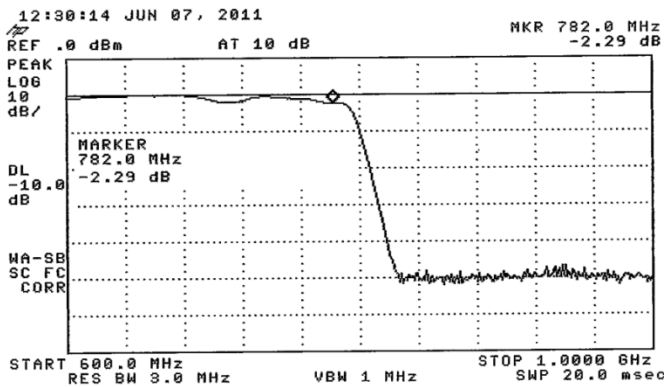
## SMF790 - LTE Stop Filter

Can be used at head end or within individual flats.



LTE Stop Filter, Pass 5 - 790MHz, Stop 822 - 1000MHz ca. 50dB.

- Connectors: f female and f male
- Through loss: 1dB
- Pass Band: 5...790MHz
- Stop Band: 822...1000MHz
- Attenuation: 10dB@800MHz; 30dB@810MHz, 50dB@815MHz and above.
- Dimensions: 75mm 25 $\varnothing$



## LTE56F & LTE56IEC – teldis LTE Stop Filter, IEC or f connector.

Designed for use in the dwellings.



LTE Stop Filter, Pass 5 - 758MHz, Stop 791 - 862MHz ca. >50dB.

- Connectors: f female and f male
- Through loss: 1dB
- Pass Band: 5...758MHz
- Stop Band: 791...862MHz
- Attenuation: 10dB@800MHz; 30dB@810MHz, 50dB@815MHz and above.
- Dimensions: 75mm 25Ø

