



# Is a 1.8GHz software

defined broadband network possible?

By Premton Bogaj, VP, HFC Networks, Technetix



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Premton Bogaj is a highly experienced engineer, having worked in the broadband sector for over 15 years. Premton holds a BSc in Telecommunications from The

University of Prishtina. He worked at IPKO telecommunications as HFC network designer before joining Technetix in 2009 as Sales Engineer Manager. He was responsible for supporting the sales team and providing technical support to MSOs in Eastern Europe, Africa and Asia-Pacific.

In 2020, Premton moved to the Netherlands to take on a new role as Product Manager, Access Network Solutions. The award winning 1.8GHz Direction Neutral Amplifier (DNA-1800) and DBx smart RF amplifiers are part of his portfolio.

In August 2021, he was appointed Vice President, HFC Networks, where he is responsible for HFC headend transmission equipment, NCI services management, DAA nodes, fibre nodes, RF amplifiers, multitaps and in-home actives and passives.

There are challenges when upgrading a to Extended Spectrum DOCSIS (ESD), one of the major ones is the increase in attenuation throughout the network - upgrading to 1.8GHz can mean up to 25% more loss in some instances. This issue can be resolved without jeopardising the evolution of your network though, Technetix will show you how this type of network can become a reality at ANGA COM 2022.

The demands and importance that we all make from our broadband networks today are changing rapidly. Working from home, the evolution of the digital world means our network capacity must grow, latency needs to be reduced and quality must improve. New features like streaming versus traditional TV, online gaming versus multiplayer video games push the capacity need even more. All these new demands on the network are fulfilled by data and operators need to be ready to deliver it.

From DOCSIS 3.0 to DOCSIS 3.1 to DOCSIS 4.0, each standard was created to deliver an increasing quantity of data to customers, while simultaneously

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maximising the benefits from an investment made years ago. With the goal of 10G on the horizon, there are some challenges that need to be both considered and overcome including the increase in attenuation at higher frequencies, the increase in guard band in diplex filters, limited total composite power in active components and the overall increase in power consumption.

Technetix has a range of 1.8GHz solutions to overcome these challenges much more efficiently, working smarter instead of harder and, perhaps most importantly, they can do so without the use of diplex filters. Active equipment that does not use diplex filters is groundbreaking innovation in an HFC network and makes it possible to implement flexi-split while dramatically reducing power consumption.

A Distributed Gain Architecture network, as proposed by Technetix, can also define the downstream and upstream capacity depending on demand. Ultimately, it is the communication between the Remote MAC PHY/Remote PHY device and the cable modem that will decide how to assign

the services to the available frequencies, this is known as a software defined network in cable networks.

Technetix will be showcasing the building blocks required to build a DOCSIS 4.0 Distributed Gain Architecture at ANGA COM. The portfolio includes the DNA-1800 Direction Neutral Amplifier with 20dB gain, 15dB gain and a low noise model. The DNS-1800-ZL direction neutral zero loss is also featured.



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