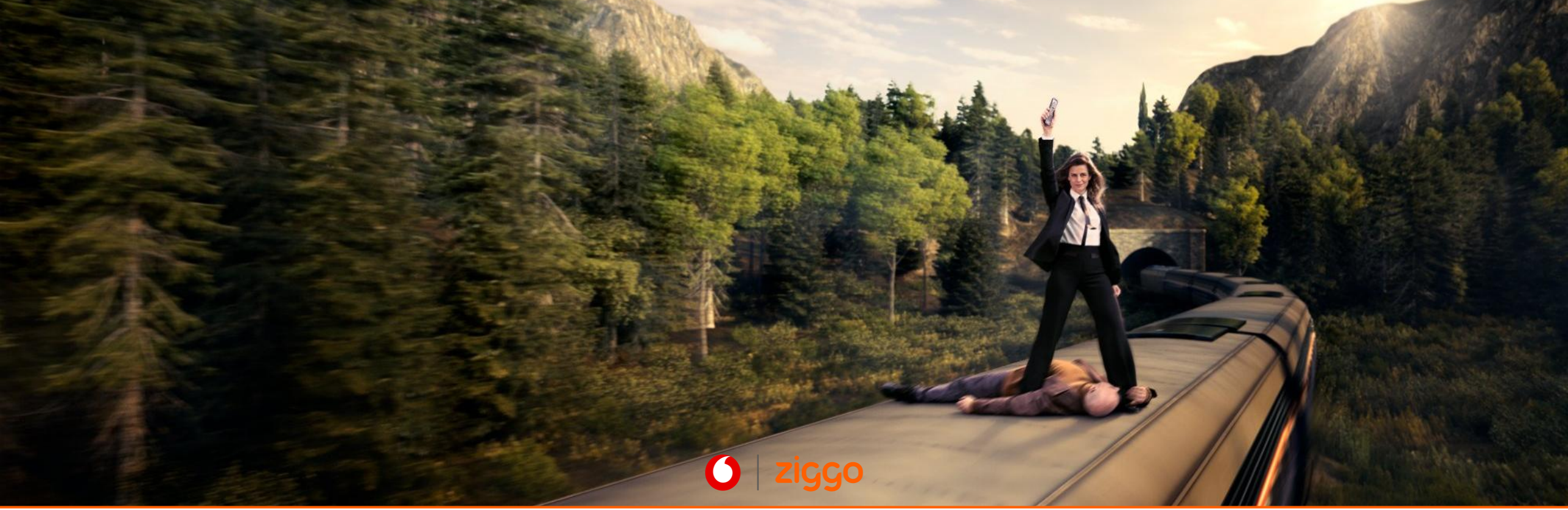


DOCSIS 4.0

HOW IT WORKS WITHIN THE HOME

17-11-2026

John Blake

Domain Architect Customer Connectivity – In Home

Agenda

Introduction

DOCSIS 4.0 hardware

In-Home coax

Connectivity beyond the modem

Q&A

vodafone | ziggo

DOCSIS 4.0

THE MODEM



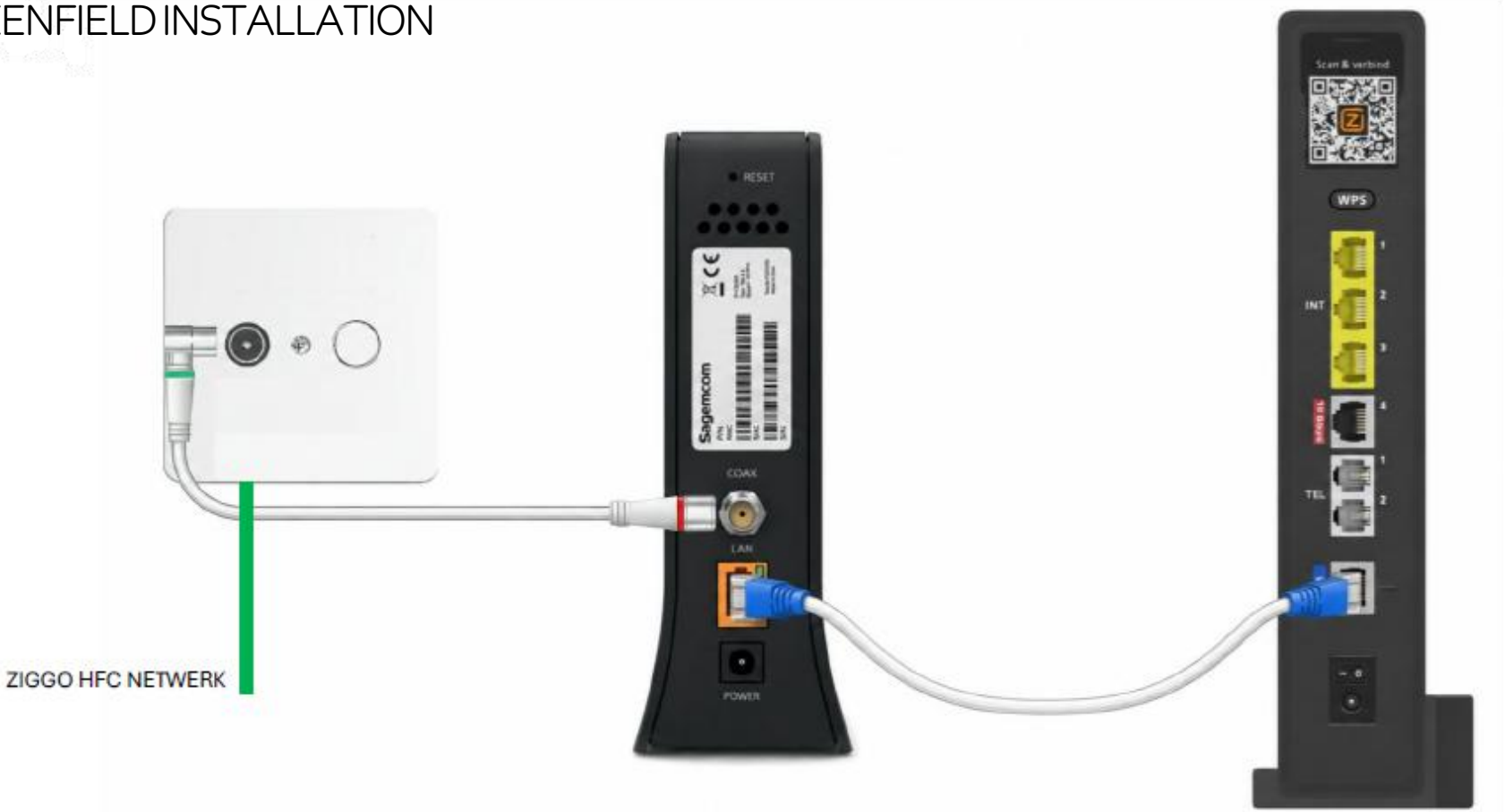
Sagemcom F3994LG

- Broadcom BCM33941UD chipset
- 7 downstream OFDM channels
- 8 upstream OFDMA channels
- Supports 204MHz and 396MHz split
- F-connector WAN
- 10Gb Multi-Gig Ethernet LAN
- EcoDesign HiNA compliance <7W
- Download speeds >=8Gbps

ziggo

DOCSIS 4.0

ALL-IP GREENFIELD INSTALLATION



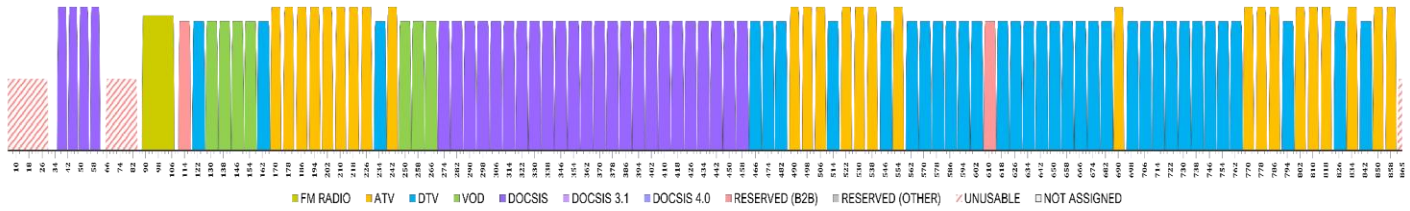
Sagemcom F3994LG
DOCSIS 4.0 modem

Sagemcom F5685LGE
Ethernet Gateway

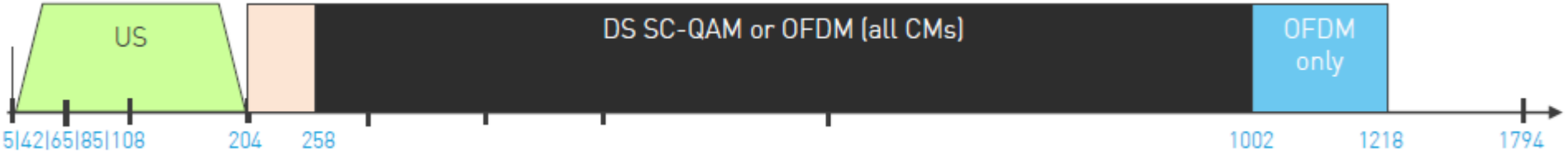
DOCSIS 4.0 – extending the spectrum

SPECTRUM

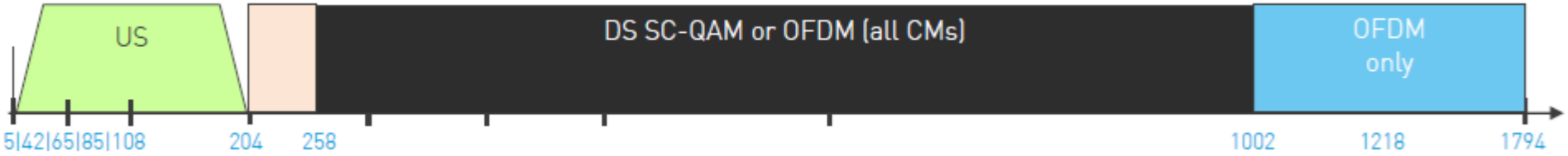
Traditional spectrum



D3.1 introduced OFDM(A)



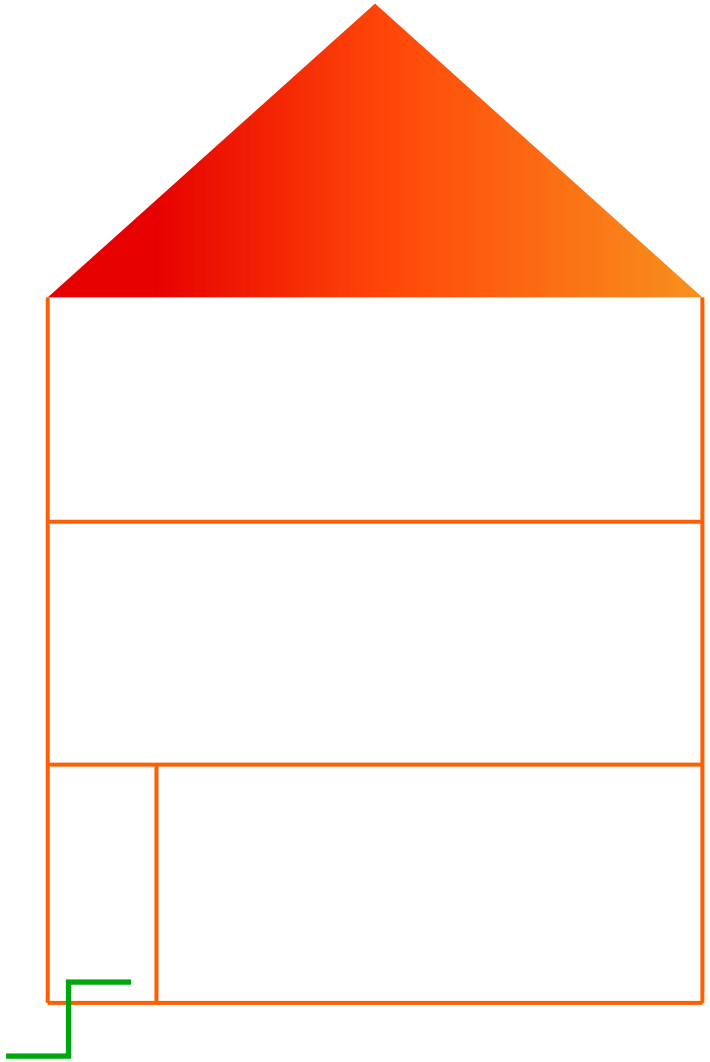
D4.0 extends OFDM(A) up to 1800MHz



In-Home coax

LOTS OF LEGACY

7M homes passed



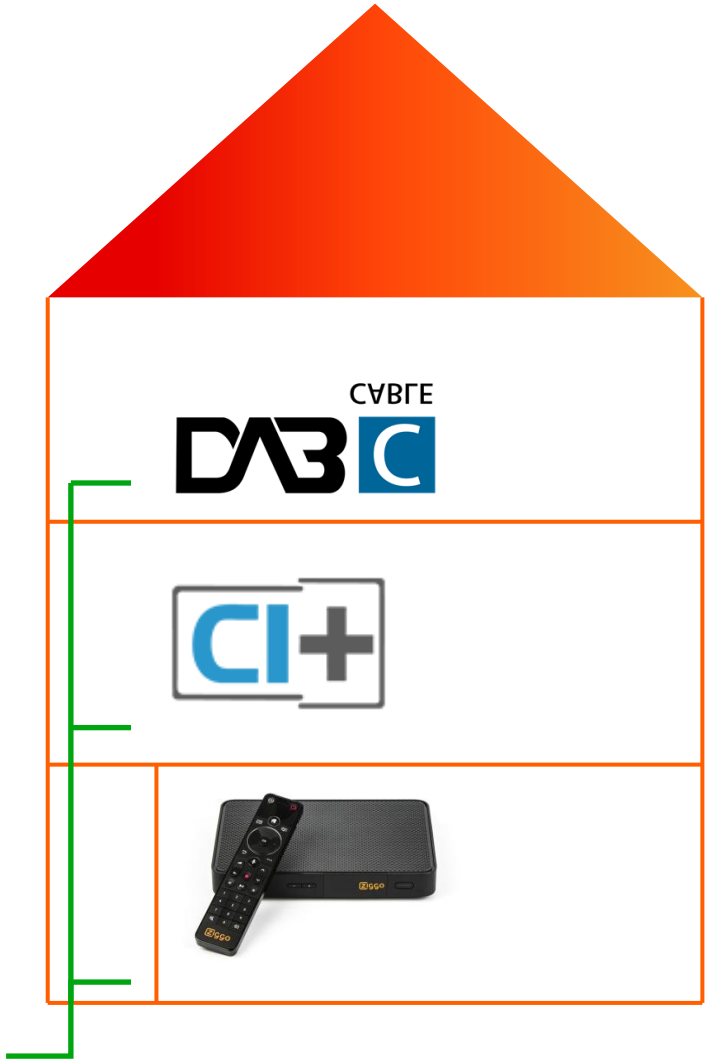
Coax typically enters via:
~55% Living room
~45% Meter cupboard

In-Home coax

LOTS OF LEGACY

50% to second floor

90% to first floor

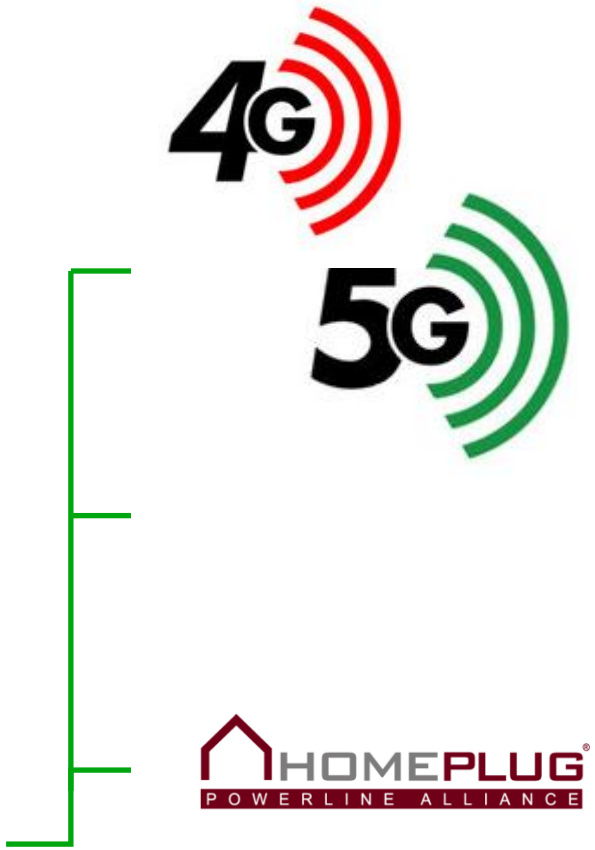


In-Home coax

NOT ALL COAX IS GOOD COAX

Bad coax = Ingress



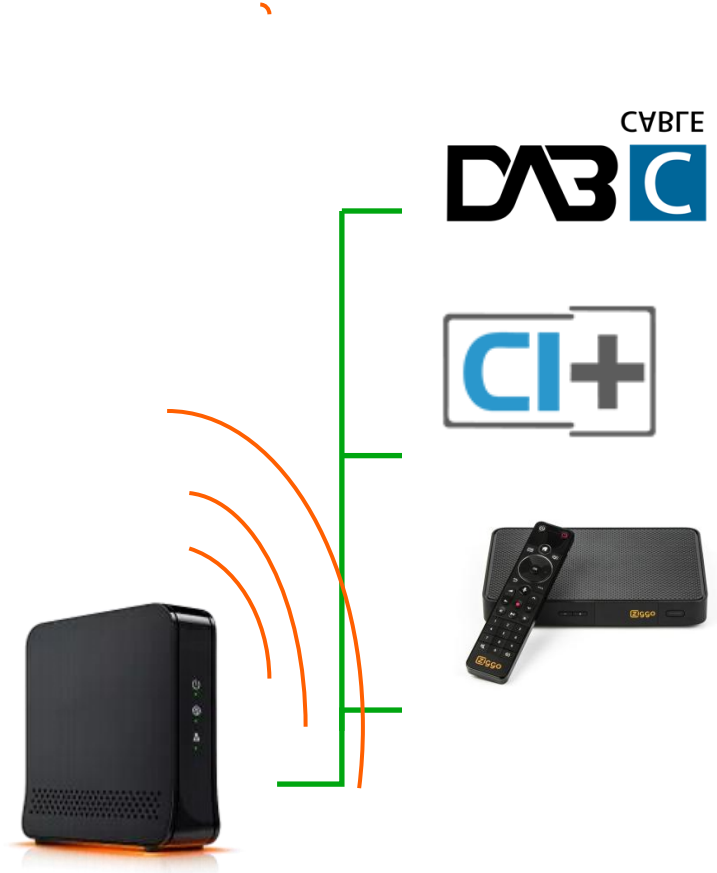


ziggo

In-Home coax

DOCSIS 4.0 IS POWERFUL

Higher power overloads tuners

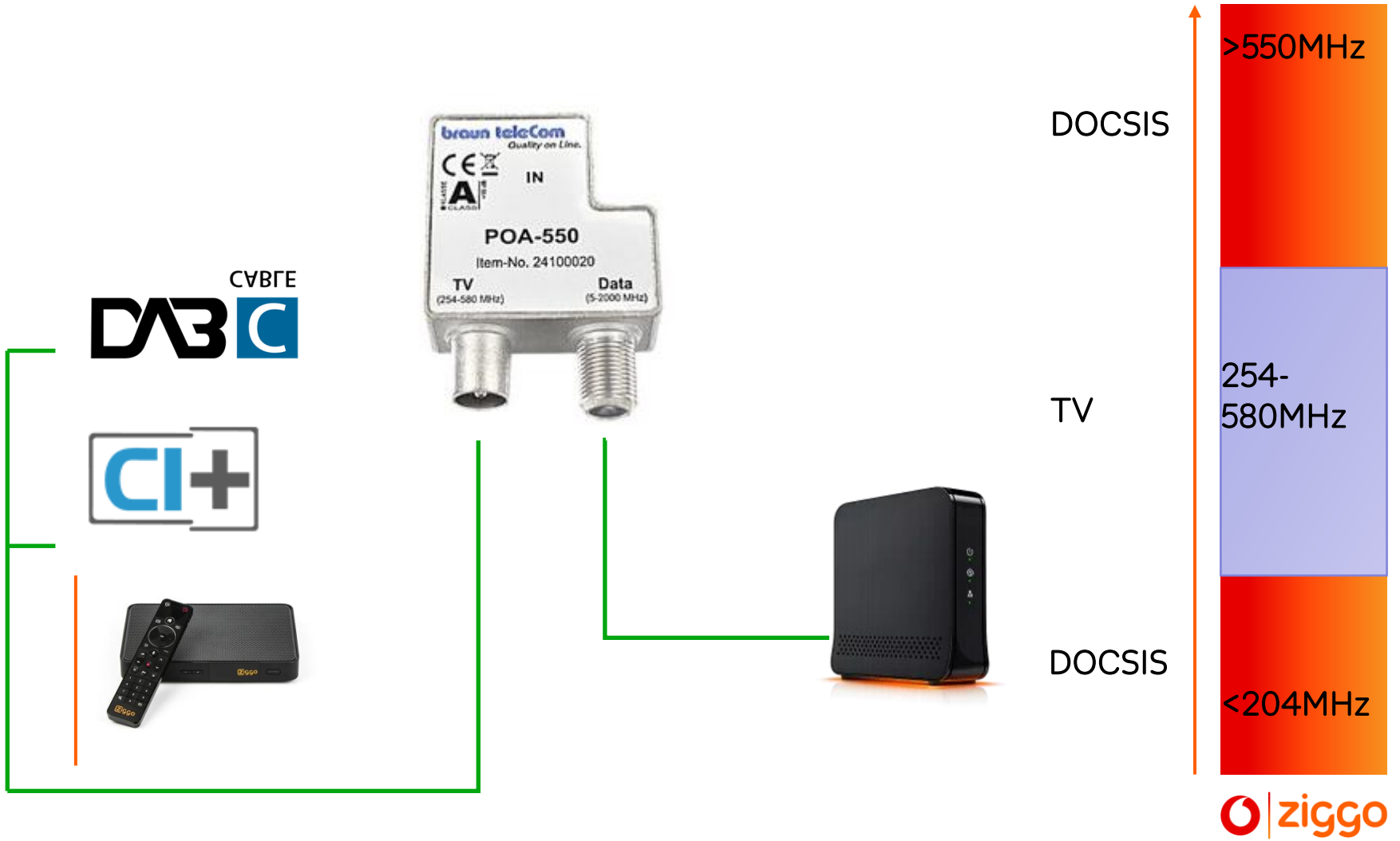


ziggo

In-Home coax

SOLUTION

POA-550 splitter



ziggo

In-Home challenges beyond the modem

NEW CHALLENGES



WiFi



Ethernet



Devices

ziggo

In-Home challenges - WiFi

NOPE

Wi Fi 6™ CERTIFIED

Wi Fi 7™ CERTIFIED

Wi Fi 8

Wi Fi 9



In-Home challenges - WiFi

NOPE

Max 3.8Gbps

Wi Fi 6™ CERTIFIED

Wi Fi 7™ CERTIFIED

Wi Fi 8

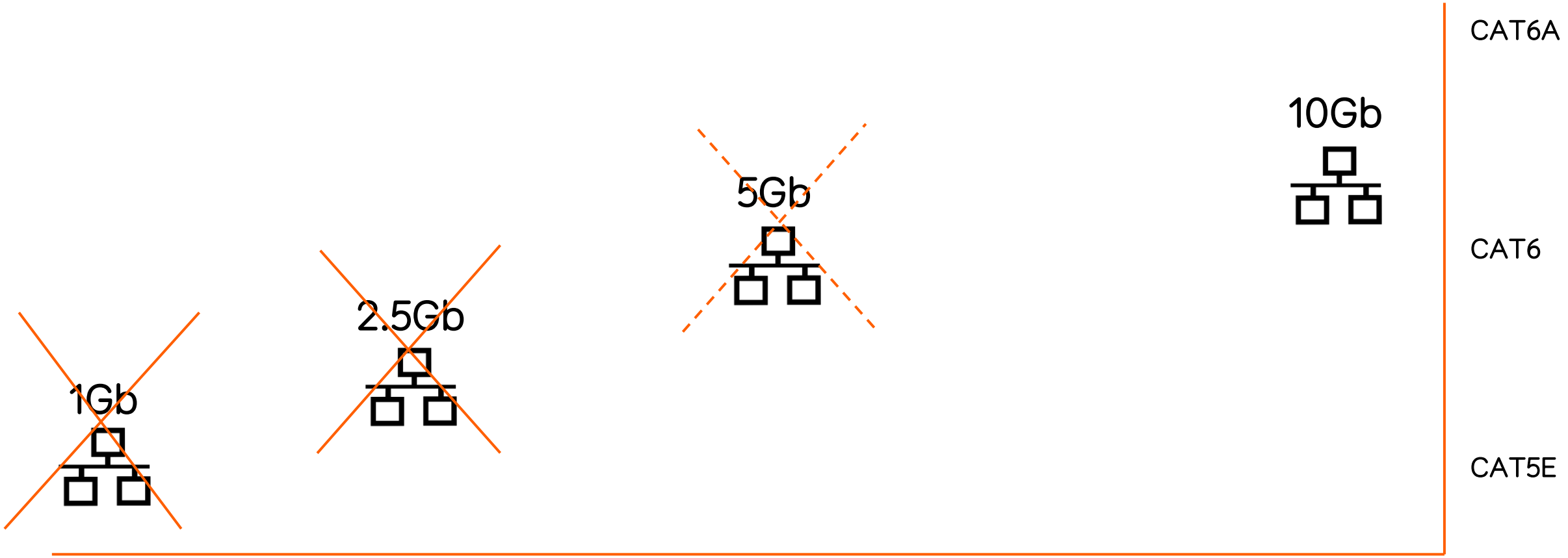
WiFi—9



ziggo

In-Home challenges - Ethernet

STANDARDS AND CABLES

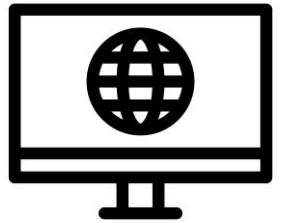


In-Home challenges

WHERE CAN IT GO WRONG

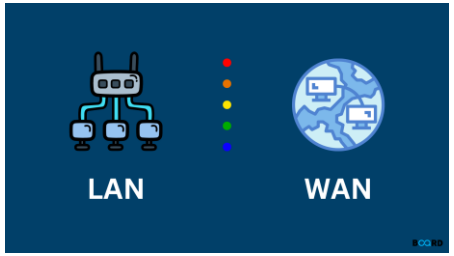






Between NTU and gateway





Between gateway and PC





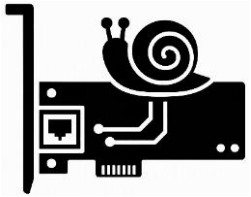
MoCA
Multimedia over Coax Alliance

HOMEPLUG
POWERLINE ALLIANCE



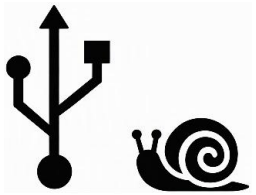
WI-FI MESH

On the PC





PCI EXPRESS



Future

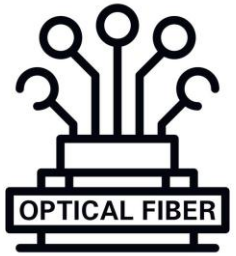
PAST 10GBPS

Access





In-Home





DAC





ziggo

vodafone | ziggo

Questions?