

# FTTC Installation – Q4 2015

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## Options and Modem/Router Compatibility

### Withdrawal of BT Openreach Modem and Previous FTTC Products

BT Openreach have announced that from March 2016 they will cease supply of FTTC modems with new services. Both the ECI & Huawei-branded versions of the modem will no longer be supplied with new FTTC installations.

BT will continue to support existing modems in the field, including replacement of faulty units, until March 2017.

After March 2017 any Openreach modems in the field become the customer's property and although they will continue to operate they will not be replaced by BT should they fail.

Accordingly from March 2016 the BT Openreach engineer installed FTTC service dependent on this hardware will be withdrawn from new sale.

## New FTTC Installation Options

As an alternative to the withdrawn product we are offering two new installation options for FTTC products:

### Self-Install / Wires-Only

With this option the BT engineer will only visit the cabinet serving the customer's premises to connect the service. A visit to the customer premises is not needed. Without an engineer visit, the faceplate of the NTE5 will not be swapped. This means that plug-in microfilters will now need to be used (as for ADSL and ADSL2+).

#### Advantages:

- Cheapest FTTC installation option
- No need to stay in at the premises to provide engineer access
- The filters and modem can be connected to an extension, rather than requiring connection to the master socket

#### Disadvantages:

- Using filters (particularly on extension wiring) may result in lower speeds than connecting to a master socket with a filtered faceplate
- BT cannot perform tests from the customer premises at connection. Failed installations should be reported as faults in the same way as for ADSL and ADSL2+
- Customer must connect a BT-approved VDSL2-compatible modem/router (Cerberus can supply these - see later in this document)

The cabinet in the street is known by BT Openreach as the PCP (Primary Connection Point). For this reason you may also see this option referred to as "PCP only".

### Engineer-Installed / Managed Install

With this option the engineer will visit the cabinet in the street to provision the service, but will also visit the customer premises and install a faceplate on the NTE.

#### Advantages:

- Engineer installed faceplate on master socket ensures the best possible speeds for a given phone line
- Engineer will carry out tests while at the customer site
- Engineer will connect approved compatible modem/router if supplied in advance
- Does not require plug-in microfilters

#### Disadvantages:

- More expensive installation than Self-Install and than old option BT-provided modem
- Requires access to customer premises at a pre-arranged time
- Equipment can only be connected to the master socket
- Customer is required to connect their own approved VDSL2-compatible modem/router (Cerberus can supply these - see later in this document)

## Modem/Router Compatibility

Under the previous engineer-install process, BT Openreach would supply an FTTC modem. The modem connected to the BT phone socket and provided an Ethernet Interface to which the customer would connect their router. BT did not stipulate any requirements for the router other than an Ethernet WAN interface and to use PPPoE to connect the modem.

Under the new process the customer must supply the device that connects to the BT phone socket.

This router must support VDSL2 technology and have undergone and passed BT's Modem Compatibility Test (MCT) to provide a supported configuration.

So far all compatible equipment combines the function of modem and router in the same way as is well established with ADSL & ADSL2+.

There are several modem/routers on the market which support VDSL2+ but which have not passed BT's MCT. These modems are prohibited from connection to BT's phone socket. BT use a technology called "OAM Loopback" to perform diagnostics on FTTC services and identify the CPE connected. Most unapproved modems do not support OAM loopback. BT are able to identify unauthorised equipment using the OAM Loopback test or by lack of support for it in the connected CPE.

Detection of unauthorised CPE may result in the following:

- Request for removal of unauthorised CPE
- Limitation or disconnection of Service
- Lack of support when troubleshooting faults
- Abortive Visit or SFI Customer Misoperation charges when engineers find unauthorised equipment on site.

Cerberus do not support the BT Openreach philosophy with respect to Modem Compatibility Testing or use of unauthorised equipment, however we have no discretion in the matter. All UK FTTC, regardless of the Internet service provider, is based upon the same BT Openreach products and therefore bound by the same rules. Cerberus attends most Industry events and can confirm that Industry is united in its view of BT's MCT rules. We expect that in time these rules will be relaxed but cannot provide timescales. In the meantime we must enforce BT's rules.

### Fully Approved Compatible Modems

At the time of writing the following is the list of fully approved compatible modems:

Supplier	Device Product Name	Chipset	Chipset Hardware	Chipset Firmware	Notes
Arcadyan	Brightbox 2	Broadcom	BCM63168U D0	4.12L08	
AVM GmbH	FRITZ!Box 3490 (FB3490)	Lantiq	VRX 288	1.100.133.42	
Cisco	C887VA-K9	Broadcom	BCM63168	39m_B_38h3_24h	Baseline 887 unit
Cisco	C897VA-K9	Broadcom	BCM63168	39m_B_38h3_24h	Baseline 897 unit
Cisco	CISCO887VA-K9	Broadcom	BCM63168	39m_B_38h3_24h	original generation 887
Cisco	CISCO887VA-M-K9	Broadcom	BCM63168	39m_B_38h3_24h	original generation 887 (Annex-M)
Cisco	CISCO887VA-SEC-K9	Broadcom	BCM63168	39m_B_38h3_24h	original 887 with IPsec s/w bundle
Cisco	C887VAM-K9	Broadcom	BCM63168	39m_B_38h3_24h	baseline 887VA (with Annex-M)
Cisco	C887VA-W-E-K9	Broadcom	BCM63168	39m_B_38h3_24h	baseline 887VA with integrated WiFi
Cisco	C887VAM-W-E-K9	Broadcom	BCM63168	39m_B_38h3_24h	baseline 887VA (AnnexM) + WiFi
Cisco	C887VA-V-K9	Broadcom	BCM63168	39m_B_38h3_24h	baseline 887VA with integrated FXS POTS
Cisco	C887VA-V-W-E-K9	Broadcom	BCM63168	39m_B_38h3_24h	C887VA-V-K9 + WiFi
Cisco	C887VA-CUBE-K9	Broadcom	BCM63168	39m_B_38h3_24h	C887VA with CUBE s/w license bundle
Cisco	C887VAG+7-K9	Broadcom	BCM63168	39m_B_38h3_24h	C887VA with integrated 3G
Cisco	C887VAMG+7-K9	Broadcom	BCM63168	39m_B_38h3_24h	C887VAM-K9 with integrated 3G
Cisco	C887VAGW+7-E-K9	Broadcom	BCM63168	39m_B_38h3_24h	C887VAMG+7-K9 with integrated WiFi
Cisco	C887VA-WD-E-K9	Broadcom	BCM63168	39m_B_38h3_24h	C887VA with dual-band WiFi
Cisco	C887VAG-4G-GA-K9	Broadcom	BCM63168	39m_B_38h3_24h	C887VA with integrated 3G/4G
Cisco	C897VA-M-K9	Broadcom	BCM63168	39m_B_38h3_24h	Baseline C897VA (Annex-M)
Cisco	C897VAW-E-K9	Broadcom	BCM63168	39m_B_38h3_24h	C897VA-K9 with integrated WiFi
Cisco	C897VAM-W-E-K9	Broadcom	BCM63168	39m_B_38h3_24h	C897VA-M-K9 with integrated WiFi
Cisco	C897VAG-LTE-GA-k9	Broadcom	BCM63168	39m_B_38h3_24h	C897VA-K9 with integrated 3G/4G
Cisco	C897VAMG-LTE-GA-K9	Broadcom	BCM63168	39m_B_38h3_24h	C897VA-M-K9 with integrated 3G/4G
Cisco	EHWIC-VA-DSL-A	Broadcom	BCM63168	39m_B_38h3_24h	EHWIC plugin for ISRG2 routers; c1900, c2900, c3900, etc.

Cisco	EHWIC-VA-DSL-M	Broadcom	BCM63168	39m_B_38h3_24h	EHWIC plugin for ISRG2 routers; c1900, c2900, c3900, etc.
Cisco	NIM VA	Broadcom	BCM63168	VA_A_39m_B_38h3_24h	NIM Plugin
Cisco	1921	Broadcom	BCM63168	15.3 (3) M/A2pv6C039t.d24o	
Cisco	897VA	Broadcom	BCM63168	15.3 (3) M/A2pv6C039t.d24o-rd	
Cisco	ISR1117	Broadcom		A2pvbF039t.d26d	
Cisco	CISCO920	Broadcom		A2pv6F039x8	
Draytek	Vigor 2860	Lantiq	VR9	05.07.06.0D.01.07	VDSL/ADSL Router/Firewall & 6 port switch
Draytek	Vigor 2860vn Plus	Lantiq	VR9	05.07.06.0D.01.07	As 2860 with dual band Wifi plus VoIP ports
Draytek	Vigor 2860vac	Lantiq	VR9	05.07.06.0D.01.07	As 2860ac with twin VoIP phone ports
Draytek	Vigor 2860n	Lantiq	VR9	05.07.06.0D.01.07	As 2860 with 802.11n WiFi
Draytek	Vigor 2860n Plus	Lantiq	VR9	05.07.06.0D.01.07	As 2860n with dualband WiFi
Draytek	Vigor 2860L	Lantiq	VR9	05.07.06.0D.01.07	As 2860 with built-in 3G/4G (LTE) SIM slot
Draytek	Vigor 2860Ln	Lantiq	VR9	05.07.06.0D.01.07	As 2860L plus 802.11n WiFi
Draytek	Vigor 2860ac	Lantiq	VR9	05.07.06.0D.01.07	As 2860 with 802.11ac
DrayTek	Vigor 2860ac	Lantiq	VR9	576d17	
Draytek	Vigor 2760	Lantiq	VR9	05.07.06.0D.01.07	VDSL Router & 4 port switch
Draytek	Vigor 2760vn	Lantiq	VR9	05.07.06.0D.01.07	As 2760 with Wifi and VoIP phone ports
Draytek	Vigor 2760n	Lantiq	VR9	05.07.06.0D.01.07	As 2760 with 802.11n
Draytek	Vigor 130	Lantiq	VR9	05.07.06.0D.01.07	ADSL/VDSL Modem
Draytek	Vigor 130	Lantiq	VR9	776d17	ADSL/VDSL Modem
Draytek	Vigor 2862	Intel-Lantiq	PXB4369EL - V2.1	776d17	
Draytek	Vigor 2762	Intel-Lantiq	PXB4369EL - V2.1	779517	
Draytek	Vigor 2862Ln	Intel-Lantiq	PXB4369EL - V2.1	779517	
Draytek	2862ac	Intel-Lantiq	PXB4369EL - V2.1	779517	
Draytek	2862L	Intel-Lantiq	PXB4369EL - V2.1	779517	
Draytek	2862n	Intel-Lantiq	PXB4369EL - V2.1	779517	
Draytek	Vigor 2620Ln	Lantiq /Intel		05.07.06.0D.01.07	
Huawei	HG633	Triductor	G1.01	G3_01.32.10	ADSL/VDSL, Dual Band Wireless
Huawei	AR129	Triductor	VSPM340	G3_01_36_13	4 FE LAN/WAN
Huawei	AR129W	Triductor	VSPM340	G3_01_36_13	4 FE LAN/WAN, 802.11 b/g/n
Huawei	AR129GW-L	Triductor	VSPM340	G3_01_36_13	4 GE LAN/WAN Ports GE Combo WAN, Wireless and FDD LTE
Huawei	Huawei AR509G-L-D-H	Triductor	VSPM340	G3_01_36_13	IoT router, IP41, 4 GE ports, FDD LTE
Huawei	AR169FVW	Broadcom	BCM63168VKFE BG	A2pvbF038j.d24j	4 GE LAN/WAN Ports GE Combo WAN, 4 Fixed Voice ports

Huawei	AR169FGW-L	Broadcom	BCM63168VKFE BG	A2pvbF038j.d24j	4 GE LAN/WAN Ports GE Combo WAN, Wireless and FDD LTE
Huawei	AR169FGVW-L	Broadcom	BCM63168VKFE BG	A2pvbF038j.d24j	4 GE LAN/WAN Ports 4 Fixed Voice ports
Huawei	AR169F	Broadcom	BCM63168VKFE BG	A2pvbF038j.d24j	4 GE LAN/WAN Ports GE Combo WAN
Kenton Comtrend	VR-3030	Broadcom	BCM6302KMLG 4.2	VR-3030-CFE-C031- 416CTL- B01_R01	Single Ethernet Port, Wired Modem, suitable for use as a Bridge.
Kenton Comtrend	KBR1645 Velocity Lite	Broadcom	BCM6302KMLG 4.2	VR-3030-CFE-C031- 416CTL- B01_R01	Bonded VDSL Device incorporates 4 DSL ports
Kenton OneAccess	1321 Ethernet Access device	Lantiq	VRX-268	TDRE 14.1	
Kenton OneAccess	1322 Ethernet Access device	Lantiq	VRX-268	TDRE 14.1	
Kenton OneAccess	1645 Ethernet Access device	Lantiq	VRX-268	TDRE14.1	
Kenton OneAccess	One 270 AV2	Lantiq	VRX-268	ADVIP_11N-V5. 2R1E7_HG1	
Kenton OneAccess	One 425 AV2	Lantiq	VRX-268	ADVIP_11N-V5. 2R1E7_HG1	
Kenton OneAccess	One 445 AV2	Lantiq	VRX-268	ADVIP_11N-V5. 2R1E7_HG1	
Kenton OneAccess	One 540 AV2	Lantiq	VRX-268	5.7.8.C.0.7	
Kenton OneAccess	One 700 AV2	Lantiq	VRX-268	ADVIP_11N-V5. 2R1E7_HG1	
Netgear	D7000	Broadcom	BCM63168	4.16L.03	
Netgear	D7800	Broadcom	BCM63168	V1.2	
Square 1 Products	Aethra BG7542W	Intel		7.7.10.4.0.7	
Square 1 Products	Aethra BG8542EWAC	Intel		8.11.2.5.1.7	
The Kenton Group	OneAccess	EcoNet Inc		V5.10.1.23	
The Kenton Group	One521	Broadcom		A2pvfbH043q.d26u	
The Kenton Group	One531	Broadcom		A2pvfbH043q.d26u	
The Kenton Group	One526	Broadcom		A2pvfbH043q.d26u	
The Kenton Group	One1526	Broadcom		A2pvfbH043q.d26u	
Technicolor	TG589Vac v1	Broadcom	BCM63168	15.2: A2pv6F039r.d26e 15.4: A2pv6F039t.d26i 16.1: A2pv6F039t.d26k 16.2: A2pv6F039t.d26k	ADSL/VDSL/ETH, Dual Band

Technicolor	TG789Vac v1	Broadcom	BCM63168	15.2: A2pv6F039r.d26e 15.4: A2pv6F039t.d26i 16.1: A2pv6F039t.d26k 16.2: A2pv6F039t.d26k	Dual Band
Technicolor	TG588v2	Broadcom	BCM63381	15.3 16.2: A2pv6F039t.d26k	4 Lan ports, Wireless. Can be configured for use as a bridge.
Technicolor	TG589vac v2	Broadcom	BCM63168	A2pv6F039t.d26k 16.2: A2pv6F039t.d26k	
Technicolor	TG789vac v2	Broadcom	BCM63168	16.2: A2pv6F039t.d26k	
Technicolor	DGA4130	Broadcom	BCM63138	A2pvbH042o.d26m	
Technicolor	TG579vac	Broadcom	BCM63168	A2pv6F039v2.d26m	
Technicolor	TG789vac	Broadcom	BCM63168	A2pv6F039v2.d26m	
Technicolor	TG579vac v2	Broadcom	BCM63168	A2pv6F039v2.d26m	
Technicolor	TG589vac v2	Broadcom	BCM63168	A2pv6F039v2.d26m	
Technicolor	DGA2231	Broadcom	BCM63168	A2pvfbH043k.d26s	
Technicolor	TG589vac v1 (VANT-E)	Broadcom	BCM63168	A2pv6F039v2.d26q	
Technicolor	TG589vac v2 (VANT-8)	Broadcom	BCM63168	A2pv6F039v2.d26q	
Technicolor	TG789vac v1 (VANT-D)	Broadcom	BCM63168	A2pv6F039v2.s26q	
Technicolor	TG588v v2 (VANT-2)	Broadcom	BCM63381	A2pv1042j1.d26q	
Technicolor	TG589vac	Broadcom		A2pv6F039x6	
Technicolor	DGA2231	Broadcom		A2pvfbH043m	
Technicolor	TG589vac(v2)	Broadcom		A2pv6F039x6	
Technicolor	TG789vac(v2)	Broadcom		A2pv6F039x6	
Technicolor	DGA4231	Broadcom		A2pvfbH043q	
Technicolor	TG789vac	Broadcom		A2pv6F039x6	
Virtual Access	GW6610-V	Lantiq	VRX318 V1.2	UGW6.1	
Vodafone	AR1220V	Broadcom	6368	A2pv6c039f1.d24m	
Zyxel	VMG8324-B10A	Broadcom	BCM63168	1.00(AAKL.10)C0_0703	ADSL/VDSL, Wireless
Zyxel	VMG8924 (Z-400UK)	Broadcom	BCM63168	1.00(AAKL.10)C0_0703	Dual Band wireless
Zyxel	VMG1312-B10A	Broadcom	BCM63168	V1.00(AAJZ.6) C1_20150911	
Zyxel	VMG3925 – B10B	Broadcom	BCM63168V	A2pv6F039f1	
Zyxel	VMG3925-B10B		BCM63168U	A2pv6F039x1	
Zyxel	VMG3925-B10B v5.13		BCM63168U	A2pv6F039x	
Zyxel	VMG3625-T20A	Broadcom		A2pvfbH043q.d26q	

These device/firmware combinations may be used at will and will be supported by BT. Only the firmware versions shown are approved at this time. The customer may not use alternative, unapproved firmwares.

### Conditionally Approved Compatible Modems

The following modems are conditionally approved:

Supplier	Device Name	Chipset	Firmware
Technicolor	589v3	BCM63168	A2pv6F037g.d24c1

These device/firmware combinations have not satisfied all the requirements of the testing but it is expected that the vendor will address any outstanding issues. These devices/firmware combinations may be used at this time but BT may require the firmware to be upgraded or the hardware to be replaced in the future.

Neither BT nor Cerberus will be held liable for the replacement of any devices used prior to full approval by BT.

## **Additional Equipment**

Additional devices are currently undergoing testing, however this is a process that BT take several months to complete and there is a backlog.

We will update this list and our guidance there as new devices are approved.

## **Modem Availability**

As of 1st November 2015, Cerberus has successfully conducted its own tests on the following models

- Technicolor 589v3
- Zyxel VMG8324-B10A
- Zyxel VMG8924 (Z-400UK)

We are currently testing the Technicolor TG589VAC and is obtaining stock of the other modems listed. We expect to offer these devices for sale to our customers as soon as they successfully complete our tests and are available for supply.

## **Recommendations**

Cerberus recommends that you purchase an approved compatible router from us when you order your service, however we will be happy to support connections where the customer has connected their own equipment provided that that equipment is listed as approved by BT.

## **Further Information**

Should you have any questions please contact your account manager on 0345 257 1333 or email [sales@cerberusnetworks.co.uk](mailto:sales@cerberusnetworks.co.uk)