

UMSUG paper – Openreach Cable Network Cabinet Charge Codes

1. Introduction

Openreach are proposing to change the methodology under which they apply for Charge Codes for their Cable Network Cabinets. Currently applications are made for Charge Codes in respect of a complete cabinet, including all its components. In future the applications will be made at component level. This will mirror the approach applied to Traffic Signal equipment where a single mains connection is provided by the Distributor, with multiple Charge Codes for the various equipment (e.g. Red, Amber, Green Vehicle Aspects, Push Button Units, Controller, etc.) that comprises the complete installation being used in the energy calculation.

2. Rationale

Originally Openreach's Fibre Cabinets were connected on a metered basis. At the UMSUG meeting¹ in November 2014 Charge Codes were agreed for these cabinets based on extrapolations from metered data. More recently Charge Codes for new cabinets have been issued based on test data from an accredited test house, complying with the Operational Information Document (OID) miscellaneous test requirements.

However some of the hardware installed in the original broadband cabinets is reaching its maximum capacity or the end of its serviceable life and will have to be replaced. As equipment is replaced going forward a cabinet may contain a mixture of old and new hardware.

A recent application for a new cabinet (MA5818 issued 18/12/2019) required 80 new Charge Codes to allow for the potential different configurations of line cards (used to connect end customers) and end customers. If Openreach were to apply for new Charge Codes every time a new configuration of old and new equipment was introduced on to the cable network, there will be an exponential increase in the number of Charge Codes required. Adopting the new methodology described later would only have required five new Charge Codes, rather than the eighty created to meet the potential configurations.

3. Proposed new methodology

For a broadband cabinet the energy consuming components and the variation in electrical consumption by those components can be listed as follows;

- Base enclosure/cabinet including power supply unit (if required)
- Cooling equipment and/or heat exchanger
- Control Cards
- Line Cards
- Data load based on end customer connections

The more recent applications for Charge Codes made for G.Fast Pods and the last VDSL cabinet have been based on an overall circuit watts summated by test results for the individual components. See example below from the documentation submitted with an application for a cabinet containing a MA5818 chassis and associated components;

Charge Code applications	Base Chassis		Line Cards			Customers		Heat Exchanger		Totals				
	Watts	VA	No.	Watts	VA	No.	Watts	VA	Watts	VA	VAr	pf		
Base Chassis with 3 line cards up to 160 customers	39.06	51.55	3	51.33	44.21	160	106.76	102.70	1.17	4.52	198.33	202.97	43	0.98

Manufacturer's Designation	Old Charge Code	New Charge Code	Circuit Watts
VDSL 512 MA5818 (three 64 port Huawei Line Cards with 145 - 160 customers)		813 0198 000 100	198

¹ https://www.elexon.co.uk/wp-content/uploads/2014/10/06_UMSUG113_02_Openreach1.pdf

Under this proposal rather than summing the various component elements, a Charge Code will be issued for each component element. The example below shows how this would work in practice. Note that for the purposes of this example the control card has not been split from the base chassis, but would be going forward.

Manufacturer's Designation	New Charge Code	Circuit Watts	No of Items	Total Watts
VDSL 512 MA5818 Base Chassis including Control Card	8130039000100	39	1	39
VDSL 512 MA5818 Line Card	8130017000100	17	3	51
VDSL 512 MA5818 Heat Exchanger	8130089001100	1.2	1	1
VDSL 512 MA5818 - up to 160 Customers connected	8130112000100	107	1	107
			Total for Cabinet	198

It can be seen that the overall total circuit watts for the cabinet remains the same.

To explain this in more detail the extract below from Elexon's Charge Code Spreadsheet shows that more recent charge codes have had the number of customers stated in the "manufacturer's designation".

Manufacturer's Designation
VDSL 512 MA5818 (one 64 port Huawei Line Card with 17 - 32 customers)
MA5603T (port band 2)

The older charge codes were also based on customer numbers by being based on a port band, which directly related to the number of customer ports connected. Earlier in this paper there is a reference to the UMSUG paper¹ where this was agreed, a screen dump from appendix 3 to that paper is shown below confirming that port band 2 is the same as 17-32 customers in the current codes.

Cabinet type	# Port band	Range of ports
MA5603T	0	0
MA5603T	1	1-16
MA5603T	2	17-32

4. Inventory

The existing arrangements for inventory submissions will continue, Openreach submit inventories to the UMSOs on a monthly basis as required by their connection agreement or the National Terms of Connection (depending on the individual DNO) and as specified in BSCP520. Openreach's asset database already records the type and number of components in

each cabinet and the number of end customers connected to the cabinet. This currently enables a single Charge Code to be allocated to the cabinet, the only change that UMSOs will see in the inventory is five entries per cabinet rather than a single entry.

5. Operational Information Document

Changes will be required to the OID at section 4.3 that describes how Charge Codes are calculated for Cable Network Cabinets. Section 4.3 currently documents the procedure that was agreed many years ago for a large national fibre network operator and has not been updated for the methodology that has been adopted for other operators including Openreach more recently.

An appendix to this paper proposes a change that documents both the existing single Charge Code methodology and the proposed methodology for Charge Codes at component level.

6. Charge Code Migration

Openreach are embarking upon a rolling programme of testing, which is expected to be complete by November this year. Applications for Charge Codes will be submitted in line with this rolling programme, i.e. as test results become available for components, an application for Charge Codes for those components will be made.

Once the new Charge Codes have been approved and made live in the Elexon Charge Code Spreadsheet, Openreach's asset database will be updated to record the new Charge Codes for a cabinet, where a complete set of component Charge Codes now exists. For an interim period as the programme of testing and applications progresses the inventory will report a mixture of cabinets with single Charge Codes for some cabinets and multiple Charge Codes for other cabinets. On completion of the programme the inventory will only contain Charge Codes at component level.

7. Recommendation

The UMSUG is invited to:

- Review the proposed changes to the methodology for issuing Charge Codes for Openreach Cable Network Cabinets,
- Review the suggested updated to section 4.3 of the OID,
- Include in the next update of the OID.

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