MCX7000 MULTI-CARRIER SATELLITE GATEWAY (R2.5)

ST Engineering

Description

Building upon the MDM6100 Broadcast Satellite Modem software suite, the enhanced hardware platform of the MCX7000 extends the modem capabilities beyond single carrier support. This is in full compliance with all satellite DVB standards up to DVB-S2X. In a multi-modulator configuration, four 133 Mbaud carriers can be generated. In a multi-demod configuration, three 133 Mbaud carriers can be demodulated. As a modem, two carrier demodulation can be combined with the modulation of a 133 Mbaud carrier. Each and every transport stream embedded into the received carriers can be outputted on to one of the six (optional) ASI or dual Ethernet ports. The same data interfaces can be used as input ports for the modulator. Transmodulation of a received stream is also an option.

Its remote in-band management and software upgradeability makes it the receiver equipment of choice for remote unattended towers and headends. Subsequent releases of this future-proof DVB-S2X platform guarantee, by simple software upgrade, even increased functionality and higher density.

Markets

Broadcast

The MCX7000 is a new dense DVB-S2X multi-carrier satellite gateway, resulting in OPEX and CAPEX savings. Its field of use covers all Broadcast applications, from DTH and primary distribution to towers and head-ends to contribution and exchange networks. Its 133 Mbaud capability extends its use to HTS spot-beam transponders.

BROADCAST MODEMS

SCPC MODEMS

DIALOG

powered by Newtec iDirect

Delivering the highest uptime for vital links

Uptime and reliability are essential in the design of the multi-carrier gateway, and play a vital role in the satellite network. Input source redundancy and the shortest redundancy switch-over times, operating both in 1+1 and N+1 topologies, are setting the standard across the satellite industry.

Advanced capabilities are built in to the multi-carrier gateway, such as an MPEG Transport Stream analyser, which provides support of SMPTE 2022 FEC at the GbE inputs (for distributed IP headends), and native support of Carrier ID according to the DVB standard, as well as in the transport stream NIT Table. The re-ordering and gap filling of missing packets in transport streams is done with the Seamless input stream switching option. Special care was taken to cope with jittery transport streaming over IP inputs. The six ASI ports are programmable as inputs or outputs and allow for monitoring of operational ASI ports as well. To protect the satellite transmission, the Advanced Encryption Standard (AES) option can be activated. AES encrypts/decrypts - with a high-security level - the content of all DVB-S2(X) streams. On the Transport Stream level, BISS scrambling/ descrambling is also an option.

Get the best performance and lower your costs

The MCX7000 Multi-Carrier Satellite Gateway is one of the best performers to offer unmatched bandwidth efficiency optimization options, thereby lowering overall Total Cost of Ownership (TCO). The fully automated operation of Newtec´s field-proven Equalink® 3 predistortion technology is now available for any satellite transmission application providing up to 15% bandwidth gain in DVB-S2(X) 8PSK mode in single carrier per transponder constellations.
Clean Channel Technology®, in combination with DVB-S2X, improves satellite efficiency by up to 15%, thereby enabling much smaller carrier spacing.

Maximum symbol rates up to 133 Mbaud and modulations up to 256APSK (DVB-S2X standard) combined with Variable Coding and Modulation (VCM) allow for maximum throughput in large contribution links.

Up to eight transport streams are supported in both directions over the redundant GbE ports. In addition, another six transport streams can be routed in either direction over the optional six ASI ports. The streams received from up to three satellite carriers can be sent to any of the ASI or GbE ports.

The MCX7000 Multi-Carrier Satellite Gateway can be easily monitored and controlled via a comprehensive front panel menu, advanced web GUI as well as via SNMP protocol or RESTful API. This enables easy integration into any industry-standard EMS/NMS system. Its bidirectional remote in-band management and software upgradeability makes it the receiver equipment of choice for remote unattended towers and headends.

Evolve towards tomorrow's technology

Built upon the flexible and latest generation programmable technology, the MCX7000 Multi-Carrier Satellite Gateway is a future-proof building block that lets any satellite network evolve to the next level of capabilities. A scalable, pay-as-you-grow, licensing and software upgrade mechanism that facilitates the launch of new services, or last-minute network design changes, without rebuilding the entire network infrastructure. Migration from ASI to GbE and IF to L-band is facilitated by simple in-field installation of license keys. Powerful MPE encapsulators enable transmission of M-ABR streams over satellite.

Migration of standard distribution links towards the new DVB-S2X standard can be as simple as inserting an MCX7000 Multi-Carrier Satellite Gateway in the headends while keeping the installed base of Integrated Receiver/Decoder (IRDs). Efficient transmission of Ultra High Definition (UHD) TV bouquets over two or three transponders for Direct-To-Home (DTH) only requires the Channel Bonding license.

Featured modulator technologies such as Equalink 3 linear and non-linear predistortion and Clean Channel Technology bring best-in-class output spectrum, enhancing the satellite link margin and throughput to its optimum level. The non-linear post compensation in the receivers brings extra link margin when in uplink limited multi-carrier per transponder constellation.

Specifications

Key Features

- Configurations:
  - 4 x DVB-S2X carrier modulator
  - 3 x DVB-S2X carrier modulator with optional ASI interfaces
  - Modem with one or two modulators with optional ASI interfaces
  - 3 x DVB-S2X carrier demodulator
  - Modem with one or two demodulators with optional ASI interfaces
- Minimum symbol rate: 256 kbaud
- Maximum symbol rate: 133 Mbaud
- Data rates up to 425 Mbit/s
- IF (70/140) and L-Band (950 - 2150) high power outputs
- Demodulators with dual L-band input
- Highest system reliability and service uptime through robust design and industry leading redundancy solutions
  - Exceptional jitter recovery on TS over IP inputs with SMPTE 2022 FEC
  - Redundant optional ASI or GbE interfaces in single stream mode
  - Redundancy with main TS over ASI and back-up TS over IP input
  - Redundant optional ASI interfaces for up to 3 TS input streams
  - Stream and Source redundancy on TS over IP inputs
  - Optional Seamless Protection Switching acc. SMPTE 2022-7 on TS over IP inputs
  - User configurable alarm table for device & carrier redundancy switching
  - TS null packet stuffing detector
  - Carrier-based redundancy switching in a multiple modulator 1+1 configuration
  - Input redundancy with Payload Stuffing as Switching Criterion
  - Input redundancy with TR 101 290 Priority 1 parameters as Switching Criterion
  - Built-in TS Analyser with PCR jitter measurements
  - Accurate link margin monitoring through the use of the Noise & Distortion Estimator (NoDE) tool
  - RFI reduction using DVB RF Carrier ID (DVB-CID) and NIT table CID
  - Automatic TS rate adaptation
  - ASI and TS over IP monitoring outputs of input TS streams
  - L-band monitoring output
  - Market leading RF purity and performance
  - Programmable amplitude slope equalizer
  - 8 x PRBS generators and 3 x PRBS detectors for link performance tests
  - Optional high stability internal clock reference
  - Optional dual AC power supply
- Low TCO as a result of very high bandwidth efficiency technology options, and ease of monitoring and control
  - DVB-S2X, DVB-S2, DVB-DSNG and DVB-S compliant
  - QPSK, 8PSK, 16APSK, 32APSK, 64APSK, 128APSK and 256 APSK
  - Clean Channel Technology provides up to 15% bandwidth efficiency gains on top of the DVB-S2 standard
  - Optional 2% roll-off on modulator side for highest efficiency
  - Optional Equalink 3 pre-distortion provides up to 15% bandwidth gain in DVB-S2(X) 8PSK mode, higher Quality of Service (QoS) and geographic coverage
  - Multistream CCM or VCM mode with ISSY
  - Selection of DSNG profiles acc. WBU-ISOG including the new DVB-S2X standard
  - Secure front panel, SNMP, HTTP and CLI interfaces
- Future-proof design combining video and IP multiservice capabilities, supports transport of today´s and tomorrow´s services
  - Multistream reception and transmission (8 streams in both directions for modem configurations – 16 streams in modulator or demodulator only configurations)
  - Up to 8 Transport Streams mux/demux on GbE (TSoverIP) and 6 on optional ASI interfaces
  - Transport Stream over IP outputs optimized for minimal Packet Inter-Arrival-Time
  - VLAN support
- 4 x built-in encapsulators for opportunistic data insertion up to 70 Mbps, interoperable with IRDs that support Multi Protocol Encapsulation (MPE)
- 4 x MPE decapsulators up to 70 Mbps
- Supports SFN Networks using transparent TS pass-through
- Optional AES encryption/decryption per ISI stream and per carrier
- Optional BISS scrambler and descrambler
- Optional Channel Bonding modulator acc. DVB-S2X up to 425 Mbps
- Demodulator supports the Equalink 3 calibration protocol
- External reference input
- Optional 10 MHz reference output
- Easy integration with industry leading management systems (EMS/NMS/OSS)
- Feature-based pricing and software upgrades
- Pay-as-you-grow flexible licensing scheme
- Remote in-band management
- Remote over-the-air software upgrade

Use Cases and Applications

Multi-modulator equipment for OPEX and CAPEX reduction in back-up or dense DTH HUB stations.
The support of DVB-S2X and its upgradeability to the transmission of bonded carriers makes the MCX7000 the preferred solution for the transmission of future UHDTV bundles.

Efficient distribution to towers and headends resulting in OPEX and CAPEX savings is a major application for the MCX7000. It brings higher-efficiency, limited need for rack space and with its transmodulation capability allows for upgrade of existing stations to the DVB-S2X standard while preserving the installed base of IRDs. This allows for decoupling modulation and video encoding technology roadmaps and investments.

Another use case is the reception of multiple contribution links in a single HUB device, bringing down CAPEX.

Broadcast contribution modem on standard and High Throughput Systems (HTS) spot-beam transponders.

In closed video distribution networks, AES encryption of the baseband frames results in extra security on a physical layer level.

MCX7000 is an optional part within a Newtec Dialog® multiservice broadcast solution.

Related Products

M6100 Broadcast Satellite Modulator
MDM6100 Broadcast Satellite Modem
FRC07x0 Frequency converters portfolio
USS0212 1+1 Modulator Redundancy Switch
USS0202 Universal Switching System

Related Bandwidth Efficiency Technologies

Clean Channel Technology
Equalink 3
DVB-S2X (incl. Channel Bonding for TS transmission)

Figure: Dual modulator modem with ASI and GbE interfaces and dual power supply

Data Interfaces

ASI Interface (Optional)	
Single stream mode	
	2 selectable ASI inputs on BNC (F) – 75 Ohm (coax)
	2 x ASI output on BNC (F) – 75 Ohm (coax)
	188 or 204 byte mode
	Rate adapter
	MPTS or SPTS according to ISO/IEC 13818
Multistream mode	
	6 BNC(F) - 75 Ohm (coax) connectors individually configurable as input or output or as 3 redundant TS inputs with auto switching
	188 or 204 byte mode
	Rate adapter
	MPTS or SPTS according to ISO/IEC 13818
ETH Interface	
	Auto switching 10/100/1000 Base-T Ethernet interface
	VLAN support
	Transport stream over IP interface (UDP/RTP), unicast or multicast
	Seamless Protection Switching SMPTE 2022-7 on TSoIP inputs (optional) in the 300 kbps - 90 Mbps bit rate range
	Forward Error Correction SMPTE 2022-1 and -2
	Rate adapter
	MPTS or SPTS according to ISO/IEC 13818

Content Encryption and Protection

BISS SCRAMBLER (OPTIONAL)
Support for BISS-0, BISS-1 and BISS-E
On 4 TS (SPTS or MPTS) in modulator configurations
On 2 TS (SPTS or MPTS) in modem configurations
Up to 50 Mbps per TS
Up to 130 Mbps on one TS per MCX7000
BISS DESCAMBLER (OPTIONAL)
Support for BISS-0, BISS-1 and BISS-E
On 3 TS (SPTS or MPTS) in demodulator configurations
On 2 TS (SPTS or MPTS) in modem configurations
Up to 130 Mbps
AES ENCRYPTION (OPTIONAL)
AES encryption of Baseband frames
64-bit or 128-bit mode
One AES encryption per carrier
Single key or one key per ISI stream
Up to 1 x 140 Mbps or 4 x 32 Mbps or 6 x 23 Mbps/ carrier
AES DECRYPTION (OPTIONAL)
AES decryption of Baseband frames
64-bit or 128-bit mode
One AES decryptor per carrier
Global key or one key per ISI stream
Up to 1 x 140 Mbps or 4 x 32 Mbps or 6 x 23 Mbps/ carrier

IP/Ethernet frames Encapsulation/ Decapsulation

4 MPE Encapsulators (in option)

4 MPE Decapsulators

Layer 3 static router over satellite

Layer 2 bridge over satellite (VLAN compatible)

Max aggregate 70 Mbit/s

Modulation and Demodulation

SUPPORTED MODULATION SCHEMES AND FEC

DVB-S
Outer/Inner FEC: Reed Solomon / Viterbi
MODCODs:
QPSK: 1/2, 2/3, 3/4, 5/6, 7/8

DVB-DSNG
Outer/Inner FEC: Reed Solomon / Viterbi MODCODs:
8PSK: 2/3, 5/6, 8/9
16QAM 3/4, 7/8

DVB-S2 (acc. ETSI EN 302 307 v1.2.1 for DVB-S2)
Outer/Inner FEC: BCH/LDPC

52 MODCODs (short & normal frames):

QPSK: from 1/4 to 9/10
8PSK: from 3/5 to 9/10
16APSK: from 2/3 to 9/10
32APSK: from 3/4 to 9/10

DVB-S2X standard
Outer/Inner FEC: BCH/LDPC
53 MODCODs (normal frames):
QPSK: from 1/4 to 9/10
8PSK: from 3/5 to 9/10
16APSK: from 26/45 to 9/10
32APSK: from 32/45 to 9/10
64APSK: from 11/15 to 5/6
128APSK: 3/4; 7/9
256APSK: 32/45; 3/4
13 Linear MODCODs (normal frames):
8APSK-L: 5/9; 26/45
16APSK-L: from 1/2 to 2/3
32APSK-L: 2/3
64APSK-L: 32/45
256APSK-L: 29/45 to 11/15
41 MODCODs (short frames):
QPSK: from 11/45 to 8/9
8PSK: from 7/15 to 8/9
16APSK: from 7/15 to 8/9
32APSK: from 2/3 to 8/9

Support of DVB-S2 VCM mode
(on modulator and demodulators)

SYMBOL RATE RANGE

Modulator	
	DVB-S2, DVB-S2X 256 kbaud - 133 Mbaud
	DVB-S & DSNG 1 - 45 Mbaud
Demodulator	
	DVB-S2, DVB-S2X 256 kbaud - 133 Mbaud
	DVB-S & DVB-DSNG 1 - 45 Mbaud

FRAME LENGTH

DVB-S & DVB-DSNG 188 bytes

DVB-S2 & DVB-S2X
Short Frames 16200 bits

DVB-S2, DVB-S2X
Normal Frames 64800 bits

CLEAN CHANNEL TECHNOLOGY

Roll-off option (on modulator): 2%

Roll-off: 5% -10% -15% -20% - 25% - 35%

Optimum carrier spacing

Advanced filter technology

EQUALINK 3

Linear and non-linear predistortion for all MODCODs

CARRIER INTERFERENCE REDUCTION

DVB RF Carrier ID (DVB-CID)
- Spread Spectrum Modulator (BPSK)
- Supports User Data
- Compliant to ETSI 103 129 v1.1.1 (2013-05)

Carrier ID NIT Table

CHANNEL BONDING

Modulator	
	For TS transmission
	According to DVB-S2X standard
	Up to 3 bonded 72 Mbaud carriers
	Maximum rate 450 Mbps (over UDP); 425 Mbps (with RTP-FEC)
	L-band output

Modulation Interfaces

L-BAND (CONFIGURATION OPTION) (QTY: 0-4)

Connector SMA(F), 50 Ohm

Frequency 950 - 2150 MHz (10 Hz steps)

Level -35/+7 dBm (+/- 2dB)

Return loss > 14 dB

Switchable 10 MHz Reference

Spurious performance
Better than - 65 dBc/4 kHz @ +5 dBm output level and > 256 kbaud
Non-signal related: < - 80 dBc @ +5 dBm output

IF-BAND (CONFIGURATION OPTION) (QTY: 0-4)

Connector BNC (F) - 75 Ohm
(intermateable with 50 Ohm)

Frequency 50 - 180 MHz (10 Hz steps)

Level -35/+10 dBm (± 2 dB)

Return loss 50 Ohm: > 14 dB
75 Ohm: > 20 dB

Spurious performance
Better than - 65 dBc/4 kHz @ +5 dBm output level and > 256 kbaud
Non-signal related:< - 80 dBc @ +5 dBm output

L-BAND MONITORING (QTY: 0-4)

Connector SMA (F), 50 Ohm

Frequency Same as L-Band output frequency or 1050 MHz in case of IF output option only

Level -45 dBm

Return loss > 10 dB

10 MHZ REFERENCE INPUT

Connector BNC (F), 50 Ohm

Input level -3 dBm up to + 7 dBm

Frequencies 1, 2, 5, 10, 20 MHz

10 MHZ REFERENCE INPUT

Connector BNC (F), 50 Ohm

Output level +3 dBm (+/- 2 dB)

Demodulation Interfaces

DUAL L-BAND INPUT (QTY: 0-3)

Connector 2 x F-type (F), 75 Ohm

Return loss > 7 dB (75 Ohm – F(F))

Maximum total input power: - 10 dBm

Maximum input signal power: (-30 + 10log(f)) dBm where f=baud rate in Mbaud

Minimum input signal power: (-80+Es/No(thr)+10log(f))dBm where f=baud rate in Mbaud and Es/No(thr)= Es/No value in dB for QEF reception

Frequency 950 - 2150 MHz

Adjacent signal < (Co+7) dBm/Hz with Co = signal level density

LNB POWER AND CONTROL (ON 1 L-BAND INPUT/DEMOD)

Max. current 350 mA

Voltage
11,5 -14 V (Vertical polarization)
16 -19 V (Horizontal polarization) & additional 22 kHz +/- 4 kHz (band selection according to universal LNB for Astra satellites & DiSEqC command transmission)

Internal 10 MHz Reference Frequency

STANDARD STABILITY

Stability: +/- 2000 ppb over 0 to 70° C

Ageing: +/- 1000 ppb/year

VERY HIGH STABILITY (OPTIONAL)

Stability: +/- 2 ppb over 0 to 65°C

Ageing: +/- 500 ppb/10year

Generic

MONITOR AND CONTROL INTERFACES

Web server GUI (HTTP) via web browser

M&C connectivity via separate Ethernet links

Diagnostics report, alarm log (HTTP)

SNMP v2c

RESTful API

ALARM INTERFACE

Electrical dual contact closure alarm contacts

Connector 9-pin sub-D (F)

Logical interface and general device alarm

Physical

Height 1RU, width: 19", depth 51 cm, 5.8 kg

Power supply:
90-130 & 180-260 Vac,
260 VA, 47 - 63 Hz

Temperature:
Operational: 0°C to +50°C / +32°F to +122°F
Storage: -40° to +70°C / -40°F to +158°F

Humidity: 5% to 85% non-condensing

CE label and UL

Newtec MCX7000 Multi-Carrier Satellite Gateway (R2.5)		Ordering n°
Configuration Options Category		**MCX7000**
		Select 1 option
Hardware Platform	Chassis Type 05 (7000)	CH-05
		Select 1 option
Operating Software	MCX7000 Major Software R2*	MS-20
		Select 1 option
Mains Power Supply Unit	PSU Single AC 110/240 V	PS-00
	PSU Dual Redundant AC 110/240 V	PS-01
		Select 1 option
Data/Video Package	Video TS, Carrier-ID(NIT), TS Analyser*	VP-01
	Video TS, Demod only*	VP-02
		Select 1 option
Video Interface	GbE TSoIP, SMPTE-2022 DEC (req. VP-01/VP-02)*	VI-01
	GbE TSoIP + ASI(6) (req. VP-01/VP-02 and HS-05)	VI-02
	ASI (6 connectors) (req. VP-01/VP-02 and HS-05)	AS-02
		Select max. 1 option
Slot 1	Modulator Cl.2	HS-01
	Demodulator Cl.3	HS-02
		Select max. 1 option
Slot 2	Modulator Cl.2	HS-03
	Demodulator Cl.3	HS-04
		Select max. 1 option
Slot 3	ASI board	HS-05
	Modulator Cl.2	HS-06
	Demodulator Cl.3	HS-07
		Select max. 1 option
Modulator licenses	No modulator license	ML-00
	One modulator license	ML-01
	Two modulator license	ML-02
	Three modulator license	ML-03
	Four modulator license	ML-04
		Select max. 1 option
Demodulator board licenses	No demodulator board license	DL-00
	One demodulator board license	DL-01
	Two demodulator board licenses	DL-02
	Three demodulator board licenses	DL-03
		For a modem or modulator, select 1 option
Modulator Output Interface	L-band with switchable 10 MHz output*	OU-00
	IF (50 - 180 MHz)*	OU-01
	IF+ L-band with switchable 10 MHz out*	OU-02
		For a modem or modulator, select 1 option
Modulator Standard and Coding (includes multistream support) x = 0 to 3 (for 1 to 4 modulators)	DVB-S Q/8PSK*	SC-x1
	DVB-S/S2 QPSK*	SC-x2
	DVB-S/S2/S2X Q/8PSK*	SC-x3
	DVB-S/S2/S2X Q/8PSK 16QAM 16APSK*	SC-x4
	DVB-S/S2/S2X Q/8PSK 16QAM 16/32APSK*	SC-x5
	DVB-S/S2/S2X Q/8PSK 16QAM 16/32/64/128/256*	SC-x6
		For a modem or modulator, select 1 option
Modulator Maximum Symbol Rates x = 0 to 3 (for 1 to 4 modulators)	Modulation Symbol Rate 5 Mbaud*	SR-x1
	Modulation Symbol Rate 15 Mbaud*	SR-x2
	Modulation Symbol Rate 36 Mbaud*	SR-x3
	Modulation Symbol Rate 54 Mbaud*	SR-x4
	Modulation Symbol Rate 72 Mbaud*	SR-x5
	Modulation Symbol Rate 133 Mbaud*	SR-x6
		For a modem or demodulator, select 1 option
Demodulator Standard and Coding (includes multistream support)	DVB-S/S2/S2X Q/8PSK 16QAM 16/32APSK*	DC-01
	DVB-S/S2/S2X up to 256PSK*	DC-02
		For a modem or demodulator, select 1 option
Demodulator Maximum Symbol Rates	Demodulation Symbol Rate 72 Mbaud*	DR-01
	Demodulation Symbol Rate 133 Mbaud*	DR-02

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Configuration Options Category		
		Select 1 option
Internal Reference Clock	Standard 10 MHz	IR-00
	Very High Stability 10 MHz	IR-02
Additional Options Category		
		Max. 1 option per category
Reference Clock Output	10 MHz Reference Output (BNC)	RO-01
		Max. 1 option per category
Pre-distortion	Equalink 3 * (1 license)	AE-01
	Equalink 3 * (2 licenses)	AE-02
	Equalink 3 * (3 licenses)	AE-03
	Equalink 3 * (4 licenses)	AE-04
		Max. 1 option per category
Roll-off factor	2% roll-off (modulator)	CC-02
		Max. 1 option per category
MPE Insertion	4 x MPE Data insertion in TS (req. VP-01)*	VM-01
		Max. 1 option per category
MPE with VLAN & L2	VLAN support and Layer 2 bridge* (req. VM-01)	VM-03
		Max. 1 option per category
Scrambling	BISS (0-1-E) (Req. VP-01)*	CA-01
		Max. 1 option per category
Descrambling	BISS (0-1-E) descrambler (Req. VP-01/02)*	AC-01
		Max. 1 option per category
Encryption	AES 64 bit encryption*	ES-01
	AES 128 bit encryption*	ES-02
	2 x AES 64 bit encryption*	ES-03
	2 x AES 128 bit encryption*	ES-04
	3 x AES 64 bit encryption*	ES-05
	3 x AES 128 bit encryption*	ES-06
	4 x AES 64 bit encryption*	ES-07
	4 x AES 128 bit encryption*	ES-08
		Max. 1 option per category
Decryption	AES 64 bit decryption*	AD-01
	AES 128 bit decryption*	AD-02
	2 x AES 64 bit decryption*	AD-03
	2 x AES 128 bit decryption*	AD-04
	3 x AES 64 bit decryption*	AD-05
	3 x AES 128 bit decryption*	AD-06
		Max. 1 option per category
Redundancy switching	Seamless reconstruction (SMPTE 2022-7)	SM-01
	Stream selection with TR 101 290 Prio 1 parameters*	SM-02
	Stream selection based upon payload stuffing*	SM-03
		Max. 1 option per category
Channel Bonding	Channel Bonding (modulator side)	BO-01
		Max. 1 option per category
Support	Care Pack 3- and 5-year options	GA-XX

(*) Selectable via license key

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