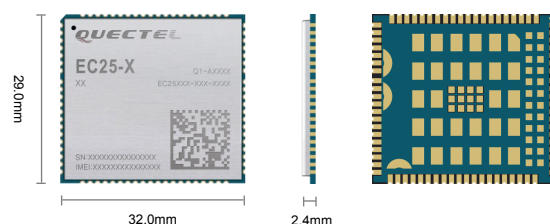




Quectel EC25 Series

IoT/M2M-optimized

LTE Cat 4 Module



Quectel EC25 is a series of LTE Cat 4 module optimized specially for M2M and IoT applications. Adopting the 3GPP Rel. 11 LTE technology, it delivers maximum data rates up to 150Mbps downlink and 50Mbps uplink. Designed in the compact and unified form factor, EC25 is compatible with Quectel multi-mode LTE Standard EC21/EC20 R2.0/EC20 R2.1/EG25-G/EG21-G modules and UMTS/HSPA+ UC20/UC200T module, which allows for flexible migration among them in design and manufacturing.

EC25 contains 13 variants: EC25-E, EC25-EU, EC25-EUX, EC25-J, EC25-A, EC25-V, EC25-AF, EC25-AFX, EC25-MX, EC25-AUT, EC25-AUTL, EC25-AU and EC25-AUX. This makes it backward-compatible with existing EDGE and GSM/GPRS networks, ensuring that it can be connected even in remote areas devoid of 4G or 3G coverage.

EC25 supports Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou/Compass, Galileo and QZSS). The integrated GNSS greatly simplifies product design, and provides quicker, more accurate and more dependable positioning.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB serial drivers for Windows 7/8/8.1/10, Linux, Android/eCall*) extend the applicability of the module to a wide range of M2M and IoT applications such



Key Benefits

- ✓ LTE Cat 4 module optimized for M2M and IoT applications
- ✓ Worldwide LTE, UMTS/HSPA(+) and GSM/GPRS/EDGE coverage
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ✓ Feature refinements: supports DFOTA, eCall* and DTMF
- ✓ MIMO technology meets demands for data rate and link reliability in modem wireless communication systems



LTE Cat 4
Max 150Mbps (DL)
Max 50Mbps (UL)



Max 42Mbps (DL)
Max 5.76Mbps (UL)



LCC Package



Wi-Fi



BT*



eCall*



Embedded Abundant Protocols



Multi-constellation GNSS



USB 2.0 High Speed Interface



USB Drivers



Quectel Enhanced AT Commands

Rev.: V1.9 | Status: Released

Quectel EC25 Series

LTE Cat 4	EC25-E	EC25-EU	EC25-EUX	EC25-J
Region/Operator	EMEA/South Korea/Thailand/India	EMEA/Thailand	EMEA/Thailand	Japan
Dimensions (mm)	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4
Temperature Range				
Operation Temperature	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Frequency Bands				
LTE-FDD	B1/B3/B5/B7/B8/B20	B1/B3/B7/B8/B20/B28A	B1/B3/B7/B8/B20/B28A	B1/B3/B8/B18/B19/B26
LTE-TDD	B38/B40/B41	B38/B40/B41	B38/B40/B41	\
WCDMA	B1/B5/B8	B1/B8	B1/B8	B1/B6/B8/B19
GSM/EDGE	B3/B8	B3/B8	B3/B8	\
GNSS	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)
Certifications				
Carrier	Global: Vodafone Europe: Deutsche Telekom/Telefónica South Korea: SKT/KT*/LGU+*	Europe: Deutsche Telekom/ British Telecom	\	Japan: NTT DOCOMO/SoftBank/KDDI
Regulatory	Global: GCF Europe: CE Taiwan (China): NCC Australia/New Zealand: RCM Thailand: NBTC Russia: FAC South Africa: ICASA	Global: GCF Europe: CE Taiwan (China): NCC Australia/New Zealand: RCM	Global: GCF Europe: CE Taiwan (China): NCC Australia/New Zealand: RCM	Japan: JATE/TELEC
Others	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL
Data Transmission				
LTE-FDD Data Rate (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)
LTE-TDD Data Rate (Mbps)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	\
DC-HSPA+ Data Rate (Mbps)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)
WCDMA Data Rate (Kbps)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)
EDGE Data Rate (Kbps)	296 (DL)/ 236.8 (UL)	296 (DL)/ 236.8 (UL)	296 (DL)/ 236.8 (UL)	\
GPRS Data Rate (Kbps)	107 (DL)/ 85.6 (UL)	107 (DL)/ 85.6 (UL)	107 (DL)/ 85.6 (UL)	\
Interfaces				
(U)SIM	x1	x1	x1	x1
UART	x2	x2	x2	x2
USB 2.0	x1	x1	x1	x1
Audio Digital (PCM)	x1	x1	x1	x1
I2C	x1	x1	x1	x1
SDIO	x2	x2	x1	x2
SGMII	x1	x1	x1	x1
Bluetooth*	x1	x1	\	x1
ADC	x2	x2	x2	x2
Voice				
Speech Codec Modes	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB
Echo Arithmetic	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression
VoLTE	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)
Enhanced Features				
eCall*	●	●	●	●
DTMF	●	●	●	●
DFOTA	●	●	●	●
QMI/RmNet	●	●	●	●
Audio Playback*/Audio Recording*	Optional	Optional	Optional	Optional
QuecLocator®	●	●	●	●
QuecFile	●	●	●	●
(U)SIM Card Detection	●	●	●	●
Drivers				
USB Serial Driver	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x
GNSS Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x
RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x
NDIS	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10
MBIM	Windows 8/8.1/10, Linux 3.18~5.4	Windows 8/8.1/10, Linux 3.18~5.4	\	Windows 8/8.1/10, Linux 3.18~5.4
GobiNet Driver	Linux 2.6~5.4	Linux 2.6~5.4	Linux 2.6~5.4	Linux 2.6~5.4
QMI_WWAN Driver	Linux 3.4~5.4	Linux 3.4~5.4	Linux 3.4~5.4	Linux 3.4~5.4
Electrical Features				
Supply Voltage Range	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.
Power Consumption	11µA @Power off 1.16mA @Sleep, Typ. 19.5mA @Idle	11µA @Power off 1.16mA @Sleep, Typ. 19.5mA @Idle	9.0µA @Power off 0.9mA @Sleep, Typ. 14.5mA @Idle	10µA @Power off 1.1mA @Sleep, Typ. 21mA @Idle

Notes:
1. * means under development.
2. ● means supported.

Quectel EC25 Series

LTE Cat 4	EC25-A	EC25-V	EC25-AF	EC25-AFX	EC25-MX
Region/Operator	North America	Verizon	North America FirstNet	North America FirstNet	Mexico
Dimensions (mm)	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4
Temperature Range					
Operation Temperature	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Frequency Bands					
LTE-FDD	B2/B4/B12	B4/B13	B2/B4/B5/B12/B13/B14/B66/ B71	B2/B4/B5/B12/B13/B14/B66/ B71	B2/B4/B5/B7/B28/B66
LTE-TDD	\	\	\	\	\
WCDMA	B2/B4/B5	\	B2/B4/B5	B2/B4/B5	B2/B4/B5
GSM/EDGE	\	\	\	\	\
GNSS	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	\
Certifications					
Carrier	North America: AT&T/T-Mobile Canada: Rogers/Telus	North America: Verizon	North America: Verizon/AT&T/ T-Mobile/U.S. Cellular Canada: Rogers/Telus	North America: Verizon*/ AT&T*/T-Mobile*/U.S. Cellular*	\
Regulatory	North America: FCC/PTCRB Canada: IC	Global: GCF North America: FCC	Global: GCF North America: FCC/PTCRB Canada: IC	Global: GCF* North America: FCC/PTCRB* Canada: IC	North America: FCC/PTCRB Mexico: IFETEL
Others	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL
Data Transmission					
LTE-FDD Data Rate (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)
LTE-TDD Data Rate (Mbps)	\	\	\	\	\
DC-HSPA+ Data Rate (Mbps)	42 (DL)/ 5.76 (UL)	\	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)
WCDMA Data Rate (Kbps)	384 (DL)/ 384 (UL)	\	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)
EDGE Data Rate (Kbps)	\	\	\	\	\
GPRS Data Rate (Kbps)	\	\	\	\	\
Interfaces					
(U)SIM	x1	x1	x1	x1	x1
UART	x2	x2	x2	x2	x2
USB 2.0	x1	x1	x1	x1	x1
Audio Digital (PCM)	x1	x1	x1	x1	x1
I2C	x1	x1	x1	x1	x1
SDIO	x2	x2	x2	x1	x1
SGMII	x1	x1	x1	x1	x1
Bluetooth*	x1	x1	x1	\	\
ADC	x2	x2	x2	x2	x2
Voice					
Speech Codec Modes	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB
Echo Arithmetic	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression
VoLTE	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)
Enhanced Features					
eCall*	●	●	●	●	●
DTMF	●	●	●	●	●
DFOTA	●	●	●	●	●
QMI/ RmNet	●	●	●	●	●
Audio Playback*/ Audio Recording*	Optional	Optional	Optional	Optional	Optional
QuecLocator®	*	*	●	●	●
QuecFile	●	●	●	●	●
(U)SIM Card Detection	●	●	●	●	●
Drivers					
USB Serial Driver	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x
GNSS Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	\
RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x
NDIS	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10
MBIM	Windows 8/8.1/10, Linux 3.18~5.4	Windows 8/8.1/10, Linux 3.18~5.4	Windows 8/8.1/10, Linux 3.18~5.4	\	\
GobiNet Driver	Linux 2.6~5.4	Linux 2.6~5.4	Linux 2.6~5.4	Linux 2.6~5.4	Linux 2.6~5.4
QMI_WWAN Driver	Linux 3.4~5.4	Linux 3.4~5.4	Linux 3.4~5.4	Linux 3.4~5.4	Linux 3.4~5.4
Electrical Features					
Supply Voltage Range	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.
Power Consumption	10µA @Power off 1.1mA @Sleep, Typ. 21mA @Idle	10µA @Power off 0.85mA @Sleep, Typ. 20mA @Idle	10µA @Power off 1.0mA @Sleep, Typ. 23.3mA @Idle	8.0µA @Power off 0.83mA @Sleep, Typ. 14.9mA @Idle	19µA @Power off 1.0mA @Sleep, Typ. 12.9mA @Idle

Notes:
1. * means under development.
2. ● means supported.

Quectel EC25 Series

LTE Cat 4	EC25-AUT	EC25-AUTL	EC25-AU	EC25-AUX
Region/Operator	Australia	Australia	Latin America/Australia/New Zealand	Latin America/ Australia/New Zealand
Dimensions (mm)	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4
Temperature Range				
Operation Temperature	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Frequency Bands				
LTE-FDD	B1/B3/B5/B7/B28	B3/B7/B28	B1/B2 ^① /B3/B4/B5/B7/B8/B28	B1/B2 ^① /B3/B4/B5/B7/B8/B28
LTE-TDD	\	\	B40	B40
WCDMA	B1/B5	\	B1/B2/B5/B8	B1/B2/B4/B5/B8
GSM/EDGE	\	\	B2/B3/B5/B8	B2/B3/B5/B8
GNSS	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	\	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)
Certifications				
Carrier	\	\	Australia: Telstra*	
Regulatory	Australia/New Zealand: RCM	Australia/New Zealand: RCM	Global: GCF North America: FCC Taiwan (China): NCC Brazil: Anatel Australia/New Zealand: RCM	Taiwan (China): NCC Brazil: Anatel Australia/New Zealand: RCM*
Others	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL
Data Transmission				
LTE-FDD Data Rate (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)
LTE-TDD Data Rate (Mbps)	\	\	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)
DC-HSPA+ Data Rate (Mbps)	42 (DL)/ 5.76 (UL)	\	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)
WCDMA Data Rate (Kbps)	384 (DL)/ 384 (UL)	\	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)
EDGE Data Rate (Kbps)	\	\	296 (DL)/ 236.8 (UL)	296 (DL)/ 236.8 (UL)
GPRS Data Rate (Kbps)	\	\	107(DL)/ 85.6 (UL)	107 (DL)/ 85.6 (UL)
Interfaces				
(U)SIM	x1	x1	x1	x1
UART	x2	x2	x2	x2
USB 2.0	x1	x1	x1	x1
Audio Digital (PCM)	x1	x1	x1	X1
I2C	x1	x1	x1	x1
SDIO	x2	x2	x2	x1
SGMII	x1	x1	x1	x1
Bluetooth*	x1	x1	x1	\
ADC	x2	x2	x2	x2
Voice				
Speech Codec Modes	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB
Echo Arithmetic	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression
VoLTE	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)
Enhanced Features				
eCall*	●	●	●	●
DTMF	●	●	●	●
DFOTA	●	●	●	●
QMI/ RmNet	●	●	●	●
Audio Playback*/ Audio Recording*	Optional	Optional	Optional	Optional
QuecLocator®	*	*	●	●
QuecFile	●	●	●	●
(U)SIM Card Detection	●	●	●	●
Drivers				
USB Serial Driver	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x
GNSS Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x	\	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x
RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x
NDIS	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10
MBIM	Windows 8/8.1/10, Linux 3.18~5.4	Windows 8/8.1/10, Linux 3.18~5.4	Windows 8/8.1/10, Linux 3.18~5.4	\
GobiNet Driver	Linux 2.6~5.4	Linux 2.6~5.4	Linux 2.6~5.4	Linux 2.6~5.4
QMI_WWAN Driver	Linux 3.4~5.4	Linux 3.4~5.4	Linux 3.4~5.4	Linux 3.4~5.4
Electrical Features				
Supply Voltage Range	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.
Power Consumption	10µA @Power off 1mA @Sleep, Typ. 17mA @Idle	10µA @Power off 1mA @Sleep, Typ. 17mA @Idle	11µA @Power off 1.3mA @Sleep, Typ. 22mA @Idle	9.0µA @Power off 0.9mA @Sleep, Typ. 16.9mA @Idle

Notes:

- ① LTE-FDD B2 of EC25-AU and EC25-AUX does not support Rx-diversity.
- * means under development.
- means supported.