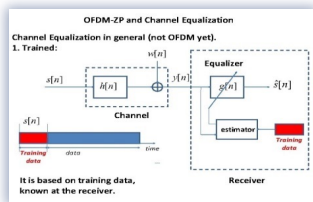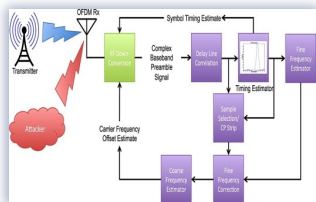# Connect Vehicles to Everything

5G-NR-V2X

5G-NR-V2X Core IP Developments

Development of High-performance DSP IP for 5G-NR-V2X Sidelink Standard V2X Communication Modem

OFDM-ZP and Channel Equalization

Basic Structure of a MIMO System

- ☑ Core communication signal processing IP supporting multi-standards with ultra-low-latency and high-speed for 5G-NR-V2X sidelink modem
- ☑ Synchronization module IP with FFT/IFFT supporting multi-standards
- ☑ OFDM channel equalizer module IP supporting multi-modulation-schemes
- ☑ MIMO decoder IP supporting multi-standards
- ☑ LDPC/polar code IP supporting hard/ soft-decision schemes with low-latency, high-speed and modulization

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Core IP Develop

3rd Stage
2024'~
CCU

2nd Stage
~2023'
5G-NR-V2X (R-5GX)

1st Stage
~2022'
Core IP Develop

Core IP Develop		5G-NR-V2X (R-5GX)		CCU

Core IP Develop:
- Sync Module IP
- FFT/ IFFT IP
- Channel Equalizer Module IP
- MIMO IP
- LDPC/ Polar IP

5G-NR-V2X (R-5GX):

AP	MCU	Application
System Memory		V2X Stack
System BUS		5G Stack
5G Sidelink Modem	Host I/F Peri.	Linux OS
		F/W

CCU:
- CCU AP
- 5G-NR-V2X (R-5GX)
- RF Transceiver