

# *Exhibit 9*

# Exhibit 9

## Claim 13 of U.S. Patent No. 10,0

"13. A mobile station served by a serving base station in an Orthogonal Frequency Division Multiplexing (OFDM)

13. A mobile station served by a serving base station in an Orthogonal Frequency Division Multiplexing (OFDM) communication system,

Honda's Accused Products include vehicles equipped with components and/or to 4G/LTE networks and services, including services sold and provided by H

To the extent the preamble is considered a limitation, Honda's Accused Product the '941 patent. *E.g.*,

The LTE specification (Series 36, Release 8) specifies user equipments (UEs) information.

For example, release 8 of the 36 series 3GPP specifications was frozen in Dec was used as the basis for the first wave of LTE equipment. The LTE marketp releases from Release 8 through Release 15. For ease of review release 8 of t below, but similar cites are available for each corresponding release on the m

LTE uses orthogonal frequency division multiplexing (OFDM) for downlink

## 4.2 General description of Layer 1

### 4.2.1 Multiple Access

The multiple access scheme for the LTE physical layer is based on Orthogonal Frequency Division Multiplexing (OFDM) with a cyclic prefix (CP) in the downlink, and on Single-Carrier Frequency Division Multiplexing (SC-FDMA) with a cyclic prefix in the uplink. To support transmission in paired and unpaired spectrum, two duplexing modes are supported: Frequency Division Duplex (FDD), supporting full duplex and half duplex operation, and Time Division Duplex (TDD).

The Layer 1 is defined in a bandwidth agnostic way based on resource blocks, allowing the LTE to support various spectrum allocations. A resource block spans either 12 sub-carriers with a sub-carrier bandwidth of 180 kHz or 6 sub-carriers with a sub-carrier bandwidth of 7.5 kHz each over a slot duration of 0.5 ms.

*See e.g.*, 3GPP TS 36.201 V8.3.0 at pgs. 7-8.

LTE downlink transmission use OFDM.

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## 5.1 Downlink Transmission Scheme

### 5.1.1 Basic transmission scheme based on OFDM

The downlink transmission scheme is based on conventional OFDM using a cyclic prefix. The spacing is  $\Delta f = 15$  kHz. 12 consecutive sub-carriers during one slot correspond to one downlink frequency domain, the number of resource blocks,  $N_{RB}$ , can range from  $N_{RB-min} = 6$  to  $N_{RB-max} =$

In addition there is also a reduced sub-carrier spacing  $\Delta f_{low} = 7.5$  kHz, only for MBMS-dedicated

In the case of 15 kHz sub-carrier spacing there are two cyclic-prefix lengths, corresponding to 2 symbols per slot respectively.

- Normal cyclic prefix:  $T_{CP} = 160 \times T_s$  (OFDM symbol #0),  $T_{CP} = 144 \times T_s$  (OFDM symbol #1-11)

See e.g., 3GPP TS 36.300 V8.12.0 at pg. 25

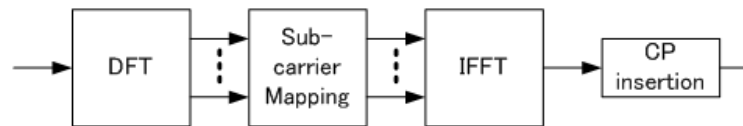
LTE uplink transmissions use discrete Fourier transform spread OFDM (DFT-S-SS)

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## 5.2 Uplink Transmission Scheme

### 5.2.1 Basic transmission scheme

For both FDD and TDD, the uplink transmission scheme is based on single-carrier FDMA, OFDM.



**Figure 5.2.1-1: Transmitter scheme of SC-FDMA**

The uplink sub-carrier spacing  $\Delta f = 15$  kHz. The sub-carriers are grouped into sets of 12 consecutive sub-carriers corresponding to the uplink resource blocks. 12 consecutive sub-carriers during one slot correspond to one *resource block*. In the frequency domain, the number of resource blocks,  $N_{RB}$ , can range from 1 to 110.

There are two cyclic-prefix lengths defined: Normal cyclic prefix and extended cyclic prefix. There are six SC-FDMA symbols per slot respectively.

- Normal cyclic prefix:  $T_{CP} = 160 \times T_s$  (SC-FDMA symbol #0),  $T_{CP} = 144 \times T_s$  (SC-FDMA symbol #1-5)

See e.g., 3GPP TS 36.300 V8.12.0 at pgs. 27-28.

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