

## **Appendix H Modulation Description**

The Forward CDMA Channel consists of the following code channels: the Pilot Channel, up to one Sync Channel, one Paging Channels.

Each code channel transmitted on the Forward CDMA Channel shall be spread with a Walsh function at a fixed chip rate of 1.2288 Mcps to provide orthogonal channelization among all code channels on a given Forward CDMA Channel. One of sixty-four time-orthogonal Walsh functions shall be used. A code channel that is spread using Walsh function  $n$  shall be assigned to code channel number  $n$  ( $n = 0$  to 63). Walsh function time alignment shall be such that the first Walsh chip begins at the even second time marks referenced to base station transmission time. The Walsh function spreading sequence shall repeat with a period of  $52.08333 \mu\text{s}$  which is equal to the duration of one Forward Traffic Channel modulation symbol.

Code channel number zero shall always be assigned to the Pilot Channel. If the Sync channel is present, it shall be assigned code channel number 32. If the Paging Channel is present, it shall be assigned to code channel number 1.

The simulated waveform is the forward link CDMA test waveform as per section 6.5.2 of the J-019 standard. It consists of the overhead channels and 6 full rate traffic channels. The data bits are assumed to be random binary samples that can take on values of + or - 1 with equal probability. The data bits are then spread, modulated and pulse shaped as per the J-008 standard. The distribution of the powers in each channel is as per Table 6.5.2.1 of the J-019 standard. It should be noted that the gains of the traffic channel, as specified in the table, are much larger than that expected from an actual telephone calls in order to simulate the CDMA waveform that is expected from a fully loaded base station.