

ABSTRACT

TRANSMITTER AND RECEIVER

5 A transmission apparatus used in a mobile
communication system adopting a single carrier
scheme in an uplink includes: multiplexing means
configured to multiplex a pilot channel, a control
channel, and a data channel; and transmission means
10 configured to transmit a transmission symbol
including at least the pilot channel and the control
channel using the uplink. A first pilot channel
used for a reception apparatus to measure channel
state of the uplink is transmitted using a frequency
15 band over a plurality of resource blocks. A second
pilot channel for compensating for a channel
transmitted by the uplink is transmitted by a
resource block assigned to the transmission
apparatus. Control channels of the transmission
20 apparatus and the apparatus other than the
transmission apparatus are orthogonalized with each
other by a FDM scheme.

Figure 1