
MODULE *Channel*

EXTENDS *Integers*

CONSTANT *Data*

VARIABLE *chan*

$TypeInvariant \triangleq chan \in [val : Data, rdy : \{0, 1\}, ack : \{0, 1\}]$

$Init \triangleq \wedge TypeInvariant$
 $\wedge chan.ack = chan.rdy$

$Send(d) \triangleq \wedge chan.rdy = chan.ack$
 $\wedge chan' = [chan \text{ EXCEPT}$
 $\quad !.val = d$
 $\quad , !.rdy = 1 - @$
 $\quad]$

$Rcv \triangleq \wedge chan.rdy \neq chan.ack$
 $\wedge chan' = [chan \text{ EXCEPT } !.ack = 1 - @]$

$Next \triangleq (\exists d \in Data : Send(d)) \vee Rcv$

$Spec \triangleq Init \wedge \square [Next]_{chan}$

THEOREM $Spec \Rightarrow \square TypeInvariant$

\ * Modification History
\ * Last modified *Fri Feb 02 10:36:35 CET 2018* by *jordy*
\ * Created *Fri Feb 02 10:13:28 CET 2018* by *jordy*