MODULE *Channel*

EXTENDS *Integers*

CONSTANT *Data*
VARIABLE *chan*

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

$Init \triangleq$
$\quad \land\ TypeInvariant$
$\quad \land\ chan.ack = chan.rdy$

$Send(d) \triangleq$
$\quad \land\ chan.rdy = chan.ack$
$\quad \land\ chan' =$
$\qquad [chan$ EXCEPT
$\qquad\ !.val\ \ = d$
$\qquad , !.rdy = 1 - @$
$\qquad]$

$Rcv \triangleq$
$\quad \land\ chan.rdy \neq chan.ack$
$\quad \land\ chan' = [chan$ EXCEPT $!.ack = 1 - @]$

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

$Spec \triangleq Init \land \Box[Next]_{chan}$

THEOREM $Spec \Rightarrow \Box\, TypeInvariant$

* Modification History
* Last modified *Fri Feb* 02 10:38:45 *CET* 2018 by *jordy*
* Created *Fri Feb* 02 10:13:28 *CET* 2018 by *jordy*