

Configuring the Serial Line Protocol

By default, serial interfaces use the EIA-530 line protocol. You can configure each port on the PIC independently to use one of the following line protocols:

- EIA-530
- V.35
- X.21

To configure the serial line protocol, include the `line-protocol` statement, specifying the `eia530`, `v.35`, or `x.21` option:

```
line-protocol protocol;
```

You can include these statements at the following hierarchy levels:

- [edit interfaces *se-pim*/0/*port* serial-options]
- [edit interfaces *se-fpc*/*pic*/*port* serial-options]

For more information about serial interfaces, see the following sections:

- Serial Interface Default Settings on page 1
- Invalid Serial Interface Statements on page 3

Serial Interface Default Settings

The following sections show the default settings for serial interfaces:

- EIA-530 Interface Default Settings on page 1
- V.35 Interface Default Settings on page 2
- X.21 Interface Default Settings on page 2

EIA-530 Interface Default Settings

If you do not include the `line-protocol` statement or if you explicitly configure the default EIA-530 line protocol, the default settings are as follows:

```
dce-options | dte-options {  
  cts normal;  
  dcd normal;  
  dsr normal;  
  dtr normal;  
  rts normal;  
  tm normal;  
}  
clock-rate 16.384mhz;  
clocking-mode loop;  
cts-polarity positive;  
dcd-polarity positive;
```

```
dsr-polarity positive;
dtr-circuit balanced;
dtr-polarity positive;
encoding nrz;
rts-polarity positive;
tm-polarity positive;
```



NOTE: On M-series routing platforms, you can set the DCE clocking mode for EIA-530 interfaces and commit. An error message is not displayed and the CLI is not blocked.

You can include the line-protocol statement at the following hierarchy levels:

- [edit interfaces *se-pim/0/port* serial-options]
- [edit interfaces *se-fpc/pic/port* serial-options]

V.35 Interface Default Settings

If you include the line-protocol v.35 statement, the default settings are as follows:

```
dce-options | dte-options {
  cts normal;
  dcd normal;
  dsr normal;
  dtr normal;
  rts normal;
}
clock-rate 16.384mhz;
clocking-mode loop;
cts-polarity positive;
dcd-polarity positive;
dsr-polarity positive;
dtr-circuit balanced;
dtr-polarity positive;
encoding nrz;
rts-polarity positive;
```

You can include the line-protocol statement at the following hierarchy levels:

- [edit interfaces *se-pim/0/port* serial-options]
- [edit interfaces *se-fpc/pic/port* serial-options]

X.21 Interface Default Settings

If you include the line-protocol x.21 statement, the default settings are as follows:

```
dce-options | dte-options {
  control-signal normal;
  indication normal;
}
clock-rate 16.384mhz;
clocking-mode loop;
```

```
control-polarity positive;
encoding nrz;
indication-polarity positive;
```

You can include the line-protocol statement at the following hierarchy levels:

- [edit interfaces *se-pim/0/port* serial-options]
- [edit interfaces *se-fpc/pic/port* serial-options]

Invalid Serial Interface Statements

The following sections show the invalid configuration statements for each type of serial interface. If you include the following statements in the configuration, an error message indicates the location of the error and the configuration is not activated.

- Invalid EIA-530 Interface Statements on page 3
- Invalid V.35 interface Statements on page 3
- Invalid X.21 Interface Statements on page 4

Invalid EIA-530 Interface Statements

If you do not include the line-protocol statement or if you explicitly configure the default EIA-530 line protocol, the following statements are invalid:

```
dce-options | dte-options {
  control-signal (assert | de-assert | normal);
  indication (ignore | normal | require);
}
control-polarity (negative | positive);
indication-polarity (negative | positive);
```

You can include the line-protocol statement at the following hierarchy levels:

- [edit interfaces *se-pim/0/port* serial-options]
- [edit interfaces *se-fpc/pic/port* serial-options]

Invalid V.35 interface Statements

If you include the line-protocol v.35 statement, the following statements are invalid:

```
dce-options | dte-options {
  control-signal (assert | de-assert | normal);
  indication (ignore | normal | require);
  tm (ignore | normal | require);
}
control-polarity (negative | positive);
indication-polarity (negative | positive);
loopback (dce-local | dce-remote);
tm-polarity (negative | positive);
```

You can include the line-protocol statement at the following hierarchy levels:

- [edit interfaces *se-pim/0/port* serial-options]
- [edit interfaces *se-fpc/pic/port* serial-options]

Invalid X.21 Interface Statements

If you include the line-protocol x.21 statement, the following statements are invalid:

```
dce-options | dte-options {
  cts (ignore | normal | require);
  dcd (ignore | normal | require);
  dsr (ignore | normal | require);
  dtr (assert | de-assert | normal);
  rts (assert | de-assert | normal);
  tm (ignore | normal | require);
}
clocking-mode (dce | internal);
cts-polarity (negative | positive);
dce-polarity (negative | positive);
dsr-polarity (negative | positive);
dtr-circuit (balanced | unbalanced);
dtr-polarity (negative | positive);
loopback (dce-local | dce-remote);
rts-polarity (negative | positive);
tm-polarity (negative | positive);
```

You can include the line-protocol statement at the following hierarchy levels:

- [edit interfaces *se-pim/0/port* serial-options]
- [edit interfaces *se-fpc/pic/port* serial-options]