Quick Reference Guide

SCPI Command Summary
The following conventions are used for SCPI command syntax for remote interface programming:

- Square brackets ([ ]) indicate optional keywords or parameters.
- Braces ({ }) enclose parameter choices within a command string.
- Triangle brackets (< >) enclose parameters for which you must substitute a value.
- A vertical bar ( | ) separates multiple parameter choices.

Rules for Using a Channel List

Many of the SCPI commands for the 34970A include a scan_list or ch_list parameter which allow you to specify one or more channels. The channel number has the form (@scce), where s is the slot number (100, 200, or 300) and cc is the channel number. You can specify a single channel, multiple channels, or a range of channels as shown below.

- The following command configures a scan list to include only channel 10 on the module in slot 300.

  ROUT:SCAN (@310)

- The following command configures a scan list to include multiple channels on the module in slot 200. The scan list now contains only channels 10, 12, and 15 (the scan list is redefined each time you send a new ROUTe:SCAN command).

  ROUT:SCAN (@210, 212, 215)

- The following command configures a scan list to include a range of channels. When you specify a range of channels, the range may contain invalid channels (they are ignored), but the first and last channel in the range must be valid. The scan list now contains channels 5 through 10 (slot 100) and channel 15 (slot 200).

  ROUT:SCAN (@105;110, 215)
Scan Measurement Commands

(see page 226 in the User’s Guide)

MEASure

:TEMPerature? {TCouple | RTD | FRTD | THERmistor | DEF},
[, {<type> | DEF}, [, {<resolution> | MIN | MAX | DEF}]], (@<scan_list>)

:VOLTage:DC? {<range> | AUTO | MIN | MAX | DEF},
[, {<resolution> | MIN | MAX | DEF}], (@<scan_list>)

:VOLTage:AC? {<range> | AUTO | MIN | MAX | DEF},
[, {<resolution> | MIN | MAX | DEF}], (@<scan_list>)

:RESistance? {<range> | AUTO | MIN | MAX | DEF},
[, {<resolution> | MIN | MAX | DEF}], (@<scan_list>)

:FRESistance? {<range> | AUTO | MIN | MAX | DEF},
[, {<resolution> | MIN | MAX | DEF}], (@<scan_list>)

:CURRent:DC? {<range> | AUTO | MIN | MAX | DEF},
[, {<resolution> | MIN | MAX | DEF}], (@<scan_list>)

:CURRent:AC? {<range> | AUTO | MIN | MAX | DEF},
[, {<resolution> | MIN | MAX | DEF}], (@<scan_list>)

:FREQuency? {<range> | AUTO | MIN | MAX | DEF},
[, {<resolution> | MIN | MAX | DEF}], (@<scan_list>)

:PERiod? {<range> | AUTO | MIN | MAX | DEF},
[, {<resolution> | MIN | MAX | DEF}], (@<scan_list>)

:DIGital:BYTE? (@<scan_list>)

:TOTalize? {READ | RRESET}, (@<scan_list>)

Monitor Commands

(see page 237 in the User’s Guide)

ROUTE

:MONitor (@<channel>)

:MONitor?

ROUTE

:MONitor:STATe {OFF | ON}

:MONitor:STATe?

ROUTE:MONitor:DATA?

Scan Statistics Commands

(see page 233 in the User’s Guide)

CALCulate

:AVERAGE:MINimum? {(@<ch_list>)}

:AVERAGE:MINimum:TIME? {(@<ch_list>)}

:AVERAGE:MAXimum? {(@<ch_list>)}

:AVERAGE:MAXimum:TIME? {(@<ch_list>)}

:AVERAGE:AVerage? {(@<ch_list>)}

:AVERAGE:PTPeak? {(@<ch_list>)}

:AVERAGE:COUNT? {(@<ch_list>)}

:AVERAGE:CLEar {(@<ch_list>)}

DATA:LAST? [<num_rdgs>,] {(@<channel>)}

This command redefines the scan list when executed.
Default parameters are shown in bold.
Scan Configuration Commands

(see page 226 in the User’s Guide)

ROUTE

:SCAN (\(<\text{scan\_list}\>)
:SCAN?
:SCAN:SIZE?

TRIGger

:SOURce \{BUS|IMMediate|EXTernal|ALARM1|ALARM2|ALARM3|ALARM4|TIMer\}
:SOURce?

TRIGger

:TIMer \(<\text{seconds}>|\text{MIN}|\text{MAX}\)
:TIMer?

TRIGger

:COUNt \(<\text{count}>|\text{MIN}|\text{MAX}|\text{INFinity}\)
:COUNt?

ROUTE

:CHANnel:DELay \(<\text{seconds}>,\{\(@<\text{ch\_list}>\)\}
:CHANnel:DELay? \[\(@<\text{ch\_list}>\)\]
:CHANnel:DELay:AUTO \{OFF|ON\}\[,\(@<\text{ch\_list}>\)\]
:CHANnel:DELay:AUTO? \[\(@<\text{ch\_list}>\)\]

FORMat

:READing:ALARm \{OFF|ON\}
:READing:ALARm?
:READing:CHANnel \{OFF|ON\}
:READing:CHANnel?
:READing:TIME \{OFF|ON\}
:READing:TIME?
:READing:UNIT \{OFF|ON\}
:READing:UNIT?

FORMat

:READing:TIME:TYPE \{ABSolute|RELative\}
:READing:TIME:TYPE?

ABORT

INITiate

READ?

Scan Memory Commands

(see page 235 in the User’s Guide)

DATA:POINTS?
DATA:REMove? \(<\text{num\_rdgs}\>
SYSTEM:TIME:SCAN?
FETCh?
R? \[\(<\text{max\_rowd}>\)]

This command redefines the scan list when executed.

This command applies to all channels in the instrument (Global setting).

Default parameters are shown in **bold**.
Scanning With an External Instrument

(see page 239 in the User’s Guide)

ROUTE
  :SCAN (\(<scan\_list>\))
  :SCAN?
  :SCAN:SIZE?

TRIGger
  :SOURce \{BUS|IMMediate|EXTernal|TIMer\}
  :SOURce?

TRIGger
  :TIMer \(<seconds>|MIN|MAX\)
  :TIMer?

TRIGger
  :COUNt \(<count>|MIN|MAX|INFinity\)
  :COUNt?

ROUTE
  :CHANnel:DELay \(<seconds>\[,\ '{@<ch\_list}>\)\]
  :CHANnel:DELay? \[{\ '{@<ch\_list}>\}\]

ROUTE
  :CHANnel:ADVance:SOURce \{EXTernal|BUS|IMMediate\}
  :CHANnel:ADVance:SOURce?

ROUTE
  :CHANnel:FWIre \{OFF|ON\[,\ '{@<ch\_list}>\)\]
  :CHANnel:FWIre? \[{\ '{@<ch\_list}>\}\]

INSTrument
  :DMM \{OFF|ON\)
  :DMM?
  :DMM:INSTalled?

This command redefines the scan list when executed.
This command applies to all channels in the instrument (Global setting).
Default parameters are shown in **bold**
Temperature Configuration Commands
(see page 219 in the User’s Guide)

6 CONFIGure
:TEMPerature {TCouple|RTD|FRTD|THERmistor|DEF}, {[type][DEF]}, [, [resolution][MIN][MAX][DEF]], (@<scan_list>)
CONFIGure? [(@<ch_list>)]

UNIT
:TEMPerature {C|F|K}, (@<ch_list>)
:TEMPerature? [(@<ch_list>)]

[SENSe:] TEMPerature:TRANsducer
:TYPE {TCouple|RTD|FRTD|THERmistor|DEF}, (@<ch_list>)
:TYPE? [(@<ch_list>)]

[SENSe:] TEMPerature:TRANsducer
:TCouple:TYPE {B|E|J|K|N|R|S|T}, (@<ch_list>)
:TCouple:CHECK {OFF|ON}, (@<ch_list>)
:TCouple:CHECK? [(@<ch_list>)]

[SENSe:] TEMPerature:TRANsducer
:TCouple:RJUNction:TYPE {INTernal|EXTernal|FIXed}, (@<ch_list>)
:TCouple:RJUNction? [(@<ch_list>)]

[SENSe:] TEMPerature:TRANsducer
:RTD:TYPE {85|91}, (@<ch_list>)
:RTD:TYPE? [(@<ch_list>)]
:RTD:RESistance[:REFerence] <reference>, (@<ch_list>)
:RTD:RESistance[:REFerence]? [(@<ch_list>)]

[SENSe:] TEMPerature:TRANsducer
:FRTD:TYPE {85|91}, (@<ch_list>)
:FRTD:TYPE? [(@<ch_list>)]
:FRTD:RESistance[:REFerence] <reference>, (@<ch_list>)
:FRTD:RESistance[:REFerence]? [(@<ch_list>)]

[SENSe:] TEMPerature:TRANsducer
:THERmistor:TYPE {2252|5000|10000}, (@<ch_list>)
:THERmistor:TYPE? [(@<ch_list>)]

[SENSe:] TEMPerature:NPLC {0.02|0.2|1|2|10|20|100|200|MIN|MAX}, (@<ch_list>)
TEMPerature:NPLC? [(@<ch_list>)] [MIN|MAX]

5 This command redefines the scan list when executed.
Default parameters are shown in bold.
**Voltage Configuration Commands**

(see page 223 in the User’s Guide)

6 **CONFigure**

   :VOLTage:DC [{<range>|AUTO|MIN|MAX|DEF}[,<resolution>|MIN|MAX|DEF}], (@@<ch_list>))

   CONFIGure? [([@<ch_list>])]

   [SENSe:]
   
   VOLTage:DC:RANGe {<range>|MIN|MAX}[, (@<ch_list>)]
   
   VOLTage:DC:RANGe? [{([@<ch_list>]|MIN|MAX}]
   
   VOLTage:DC:RANGe:AUTO {OFF|ON}[, (@<ch_list>)]
   
   VOLTage:DC:RANGe:AUTO? [([@<ch_list>])]

   [SENSe:] VOLTage:DC:RESolution {<resolution>|MIN|MAX}[, (@<ch_list>)]

   VOLTage:DC:RESolution? [{([@<ch_list>]|MIN|MAX}]

   VOLTage:DC:APERture {<time>|MIN|MAX}[, (@<ch_list>)]

   VOLTage:DC:APERture? [{([@<ch_list>]|MIN|MAX}]

   VOLTage:DC:NPLC {0.02|0.2|1|2|10|20|100|200|MIN|MAX}[, (@<ch_list>)]

   VOLTage:DC:NPLC? [{([@<ch_list>]|MIN|MAX}]

   INPut :IMPedance:AUTO {OFF|ON}[, (@<ch_list>)]

   :IMPedance:AUTO? [([@<ch_list>])]

   [SENSe:] ZERO:AUTO {OFF|ONCE|ON}[, (@<ch_list>)]

   ZERO:AUTO? [([@<ch_list>])]

6 **CONFigure**

   :VOLTage:AC [{<range>|AUTO|MIN|MAX|DEF}[,<resolution>|MIN|MAX|DEF}], (@@<ch_list>))

   CONFIGure? [([@<ch_list>])]

   [SENSe:]
   
   VOLTage:AC:RANGe {<range>|MIN|MAX}[, (@<ch_list>)]
   
   VOLTage:AC:RANGe? [{([@<ch_list>]|MIN|MAX}]

   VOLTage:AC:RANGe:AUTO {OFF|ON}[, (@<ch_list>)]

   VOLTage:AC:RANGe:AUTO? [([@<ch_list>])]

   [SENSe:]
   
   VOLTage:AC:BANDwidth {3|20|200|MIN|MAX}[, (@<ch_list>)]

   VOLTage:AC:BANDwidth? [{([@<ch_list>]|MIN|MAX}]

This command redefines the scan list when executed.
Default parameters are shown in **bold**.
Resistance Configuration Commands

(see page 224 in the User’s Guide)

CONFigure
:RESistance [{<range>|AUTO|MIN|MAX|DEF},[,<resolution>|MIN|MAX|DEF}], (\[@\]<scan_list>)
CONFigure? [\[@\]<ch_list>]

[SENSe:\]
RESistance:RANGe {<range>|MIN|MAX}, (\[@\]<ch_list>)
RESistance:RANGe? [\[@\]<ch_list>]
RESistance:RANGe:AUTO {OFF|ON}, (\[@\]<ch_list>)
RESistance:RANGe:AUTO? [\[@\]<ch_list>]

[SENSe:\]
RESistance:RESolution {<resolution>|MIN|MAX}, (\[@\]<ch_list>)
RESistance:RESolution? [\[@\]<ch_list>]
RESistance:APerture {<time>|MIN|MAX}, (\[@\]<ch_list>)
RESistance:APerture? [\[@\]<ch_list>]
RESistance:NPLC {0.02|0.2|1|10|20|100|200|MIN|MAX}, (\[@\]<ch_list>)
RESistance:NPLC? [\[@\]<ch_list>]

[SENSe:\]
RESistance:OCOMpensated {OFF|ON}, (\[@\]<ch_list>)
RESistance:OCOMpensated? [\[@\]<ch_list>]

CONFigure
:FRESistance [{<range>|AUTO|MIN|MAX|DEF},[,<resolution>|MIN|MAX|DEF}], (\[@\]<scan_list>)
CONFigure? [\[@\]<ch_list>]

[SENSe:\]
FRESistance:RANGe {<range>|MIN|MAX}, (\[@\]<ch_list>)
FRESistance:RANGe? [\[@\]<ch_list>]
FRESistance:RANGe:AUTO {OFF|ON}, (\[@\]<ch_list>)
FRESistance:RANGe:AUTO? [\[@\]<ch_list>]

[SENSe:\]
FRESistance:RESolution {<resolution>|MIN|MAX}, (\[@\]<ch_list>)
FRESistance:RESolution? [\[@\]<ch_list>]
FRESistance:APerture {<time>|MIN|MAX}, (\[@\]<ch_list>)
FRESistance:APerture? [\[@\]<ch_list>]
FRESistance:NPLC {0.02|0.2|1|10|20|100|200|MIN|MAX}, (\[@\]<ch_list>)
FRESistance:NPLC? [\[@\]<ch_list>]

[SENSe:\]
FRESistance:OCOMpensated {OFF|ON}, (\[@\]<ch_list>)
FRESistance:OCOMpensated? [\[@\]<ch_list>]

This command redefines the scan list when executed. Default parameters are shown in **bold**.
Current Configuration Commands

(see page 224 in the User’s Guide)

Valid only on channels 21 and 22 on the 34901A multiplexer module.

**CONFigure**

:CONFigure:DC [{<range>|AUTO|MIN|MAX|DEF},] [,<resolution>|MIN|MAX|DEF],] (@<scan_list>)

:CONFigure? [@<ch_list>]

[SENSe:]

CURRent:DC:RANGe {<range>|MIN|MAX}, (@<ch_list>)
CURRent:DC:RANGe? [[(@<ch_list>)]|MIN|MAX]
CURRent:DC:RANGe:AUTO {OFF|ON}, (@<ch_list>)
CURRent:DC:RANGe:AUTO? [@<ch_list>]

[SENSe:]

CURRent:DC:RESolution {<resolution>|MIN|MAX}, (@<ch_list>)
CURRent:DC:RESolution? [[(@<ch_list>)]|MIN|MAX]

[SENSe:]

CURRent:DC:APERture {<time>|MIN|MAX}, (@<ch_list>)
CURRent:DC:APERture? [[(@<ch_list>)]|MIN|MAX]

CURRent:DC:NPLC {0.02|0.2|1.2|10|20|100|200|MIN|MAX}, (@<ch_list>)
CURRent:DC:NPLC? [[(@<ch_list>)]|MIN|MAX]

**CONFigure**

:CONFigure:AC [{<range>|AUTO|MIN|MAX|DEF},] [,<resolution>|MIN|MAX|DEF],] (@<scan_list>)

:CONFigure? [@<ch_list>]

[SENSe:]

CURRent:AC:RANGe {<range>|MIN|MAX}, (@<ch_list>)
CURRent:AC:RANGe? [[(@<ch_list>)]|MIN|MAX]
CURRent:AC:RANGe:AUTO {OFF|ON}, (@<ch_list>)
CURRent:AC:RANGe:AUTO? [[(@<ch_list>)]

[SENSe:]

CURRent:AC:BANDwidth {3|20|200|MIN|MAX}, (@<ch_list>)
CURRent:AC:BANDwidth? [[(@<ch_list>)]|MIN|MAX]

This command redefines the scan list when executed.
Default parameters are shown in **bold**.
**Frequency and Period Configuration Commands**

*(see page 214 in the User’s Guide)*

6 CONFIGure
:FRQuency [{<range>|AUTO|MIN|MAX|DEF}
 [,<resolution>|MIN|MAX|DEF}] (@<scan_list>)

CONFigure? [(@<ch_list>)]

[SENSe:]
FRQuency:VOLTage:RANGe {<range>|MIN|MAX}[,(@<ch_list>)]
FRQuency:VOLTage:RANGe? [(@<ch_list>)|MIN|MAX]
FRQuency:VOLTage:RANGe:AUTO {OFF|ON}[,(@<ch_list>)]
FRQuency:VOLTage:RANGe:AUTO? [(@<ch_list>)]

[SENSe:]
FRQuency:APERture {0.01|0.1|1|MIN|MAX}[,(@<ch_list>)]
FRQuency:APERture? [(@<ch_list>)|MIN|MAX]

[SENSe:]
FRQuency:RANGe:LOWer {3|20|200|MIN|MAX}[,(@<ch_list>)]
FRQuency:RANGe:LOWer? [(@<ch_list>)|MIN|MAX]

6 CONFIGure
:PERiod [{<range>|AUTO|MIN|MAX|DEF}
 [,<resolution>|MIN|MAX|DEF}] (@<scan_list>)

CONFigure? [(@<ch_list>)]

[SENSe:]
PERiod:VOLTage:RANGe {<range>|MIN|MAX}[,(@<ch_list>)]
PERiod:VOLTage:RANGe? [(@<ch_list>)|MIN|MAX]
PERiod:VOLTage:RANGe:AUTO {OFF|ON}[,(@<ch_list>)]
PERiod:VOLTage:RANGe:AUTO? [(@<ch_list>)]

[SENSe:]
PERiod:APERture {0.01|0.1|1|MIN|MAX}[,(@<ch_list>)]
PERiod:APERture? [(@<ch_list>)|MIN|MAX]

This command redefines the scan list when executed.
Default parameters are shown in **bold**.
Mx+B Scaling Commands
(see page 244 in the User’s Guide)

CALCulate
:SCALE:GAIN <gain>[,( @<ch_list>)]
:SCALE:GAIN? [(@<ch_list>)]
:SCALE:OFFSET <offset>[,( @<ch_list>)]
:SCALE:OFFSET? [(@<ch_list>)]
:SCALE:UNIT <quoted_string>[,( @<ch_list>)]
:SCALE:UNIT? [(@<ch_list>)]
CALCulate:SCALE:OFFSET:NULL [(@<ch_list>)]
CALCulate
:SCALE:STATe {OFF|ON}[,( @<ch_list>)]
:SCALE:STATe? [(@<ch_list>)]

Alarm Limit Commands
(see page 247 in the User’s Guide)

OUTPut
:ALARm[1|2|3|4]:SOURce (@<ch_list>)
:ALARm[1|2|3|4]:SOURce?
CALCulate
:LIMIT:UPPer <hi_limit>[,( @<ch_list>)]
:LIMIT:UPPer? [(@<ch_list>)]
:LIMIT:UPPer:STATe {OFF|ON}[,( @<ch_list>)]
:LIMIT:UPPer:STATe? [(@<ch_list>)]
CALCulate
:LIMIT:LOWer <lo_limit>[,( @<ch_list>)]
:LIMIT:LOWer? [(@<ch_list>)]
:LIMIT:LOWer:STATe {OFF|ON}[,( @<ch_list>)]
:LIMIT:LOWer:STATe? [(@<ch_list>)]

SYSTem:ALARm?

OUTPut
:ALARm:MODE {LATCh|TRACk}
:ALARm:MODE?
:ALARm:SLOPe {NEGative|POSitive}
:ALARm:SLOPe?

OUTPut
:ALARm(1|2|3|4):CLEar
:ALARm:CLEar:ALL

STATus
:ALARm:CONDITION?
:ALARm:ENABLE <enable_value>
:ALARm:ENABLE?
:ALARm[:EVENt]?

<table>
<thead>
<tr>
<th>Ch 01</th>
<th>Ch 02</th>
<th>Ch 03</th>
<th>Ch 04</th>
<th>Ch 05</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIO (LSB)</td>
<td>DIO (MSB)</td>
<td>Totalizer</td>
<td>DAC</td>
<td>DAC</td>
</tr>
</tbody>
</table>

CALCulate
:COMPARE:TYPE {EQUal|NEQual}[,( @<ch_list>)]
:COMPARE:TYPE? [(@<ch_list>)]
:COMPARE:DATA <data>[,( @<ch_list>)]
:COMPARE:DATA? [(@<ch_list>)]
:COMPARE:MASK <mask>[,( @<ch_list>)]
:COMPARE:MASK? [(@<ch_list>)]
:COMPARE:STATe {OFF|ON}[,( @<ch_list>)]
:COMPARE:STATe? [(@<ch_list>)]

This command applies to all channels in the instrument (Global setting). Default parameters are shown in **bold**.
Digital Input Commands
(see page 255 in the User’s Guide)

<table>
<thead>
<tr>
<th>Ch 01</th>
<th>Ch 02</th>
<th>Ch 03</th>
<th>Ch 04</th>
<th>Ch 05</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIO (LSB)</td>
<td>DIO (MSB)</td>
<td>Totalizer</td>
<td>DAC</td>
<td>DAC</td>
</tr>
</tbody>
</table>

6  CONFIGure:DIgital:BYTE (@<scan_list>)
   CONFIGure? [{(@<ch_list>)}]

[SENSe:DIgital:DATA:{BYTE|WORD}? [{(@<ch_list>)}]

Totalizer Commands
(see page 256 in the User’s Guide)

<table>
<thead>
<tr>
<th>Ch 01</th>
<th>Ch 02</th>
<th>Ch 03</th>
<th>Ch 04</th>
<th>Ch 05</th>
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<tbody>
<tr>
<td>DIO (LSB)</td>
<td>DIO (MSB)</td>
<td>Totalizer</td>
<td>DAC</td>
<td>DAC</td>
</tr>
</tbody>
</table>

6  CONFIGure:TOTalize {READ|RRSReset}, {(@<scan_list>)}
   CONFIGure? [{(@<ch_list>)}]

[SENSe:]
   TOTalize:TYPE {READ|RRSReset}, {(@<ch_list>)}
   TOTalize:TYPE? [{(@<ch_list>)}]

[SENSe:]
   TOTalize:SLOPe {NEGative|POSitive}, {(@<ch_list>)}
   TOTalize:SLOPe? [{(@<ch_list>)}]

[SENSe:]
   TOTalize:CLEAR:IMMediate {(@<ch_list>)}

[SENSe:]
   TOTalize:DATA? [{(@<ch_list>)}]

Digital Output Commands
(see page 258 in the User’s Guide)

<table>
<thead>
<tr>
<th>Ch 01</th>
<th>Ch 02</th>
<th>Ch 03</th>
<th>Ch 04</th>
<th>Ch 05</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIO (LSB)</td>
<td>DIO (MSB)</td>
<td>Totalizer</td>
<td>DAC</td>
<td>DAC</td>
</tr>
</tbody>
</table>

SOURce
   :DIGital:DATA::{BYTE|WORD} <data>, {(@<ch_list>)}
   :DIGital:DATA::{BYTE|WORD}? {(@<ch_list>)}

SOURce:DIGital:STATE? {(@<ch_list>)}

DAC Output Commands
(see page 258 in the User’s Guide)

<table>
<thead>
<tr>
<th>Ch 01</th>
<th>Ch 02</th>
<th>Ch 03</th>
<th>Ch 04</th>
<th>Ch 05</th>
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<tbody>
<tr>
<td>DIO (LSB)</td>
<td>DIO (MSB)</td>
<td>Totalizer</td>
<td>DAC</td>
<td>DAC</td>
</tr>
</tbody>
</table>

SOURce
   :VOLTage <voltage>, {(@<ch_list>)}
   :VOLTage? {(@<ch_list>)}

This command redefines the scan list when executed.
Default parameters are shown in bold.
**Switch Control Commands**

*(see page 259 in the User's Guide)*

ROUTE
  :CLOSE (@<ch_list>)
  :CLOSE:EXCLUSIVE (@<ch_list>)
  :CLOSE? (@<ch_list>)

ROUTE
  :OPEN (@<ch_list>)
  :OPEN? (@<ch_list>)

ROUTE:DONE?

SYSTEM:CPON {100|200|300|ALL}

**Scan Triggering Commands**

*(see page 228 in the User's Guide)*

TRIGger
  :SOURCE {BUS|IMMediate|EXTernal|ALARm1|ALARm2|ALARm3|ALARm4|TIMer} 
  :SOURCE?

TRIGger
  :TIMer [<seconds>|MIN|MAX]
  :TIMer?

TRIGger
  :COUNT [<count>|MIN|MAX|INFinity}
  :COUNT?

*TRG

INITiate

READ?

**State Storage Commands**

*(see page 261 in the User's Guide)*

*SAV {0|1|2|3|4|5}
*RCL {0|1|2|3|4|5}

MEMORY:STATE
  :NAME {1|2|3|4|5} [<name>]
  :NAME? {1|2|3|4|5}

MEMORY:STATE:DELeTe {0|1|2|3|4|5}

MEMORY:STATE
  :RECall:AUTO {OFF|ON}
  :RECall:AUTO?

MEMORY:STATE:VALid? {0|1|2|3|4|5}

MEMORY:NSTates?

* This command applies to all channels in the instrument (Global setting). Default parameters are shown in bold.

12
**System-Related Commands**  
*(see page 264 in the User’s Guide)*

SYSTem  
:DATE <yyyy>,<mm>,<dd>  
:DATE?  
:TIME <hh>,<mm>,<ss.sss>  
:TIME?  

FORMat  
:READing:TIME:TYPE {ABSolute|RELative}  
:READing:TIME:TYPE?  

*IDN?  
SYSTem:CTYPe? {100|200|300}  

DIAGnostic  
:POKE:SLOT:DATA {100|200|300}, <quoted_string>  
:PEEK:SLOT:DATA? {100|200|300}  

DISPlay {OFF|ON}  
DISPlay?  

DISPLAY  
:TEXT <quoted_string>  
:TEXT?  
:TEXT:CLEar  

*RST  
SYSTem:PRESet  
SYSTem:CPON {100|200|300|ALL}  
SYSTem:ERRor?  
SYSTem:ALARm?  
SYSTem:VERSion?  
*TST?  

**Interface Configuration Commands**  
*(see page 269 in the User’s Guide)*

SYSTem:INTerface {GPIB|RS232}  
SYSTem:LOCal  
SYSTem:REMote  
SYSTem:RWLock

*Default parameters are shown in **bold**.*
**Status System Commands**

*(see page 286 in the User’s Guide)*

- `*STB?`
- `*SRE <enable_value>`
- `*SRE?`

**STATUS**

- `:QUEStionable:CONDition?`
- `:QUEStionable[:EVENT]?`
- `:QUEStionable:ENABLE <enable_value>`
- `:QUEStionable:ENABLE?`

- `*ESR?`
- `*RSE <enable_value>`
- `*RSE?`

**STATuS**

- `:ALARm:CONDition?`
- `:ALARm[:EVENT]?`
- `:ALARm:ENABLE <enable_value>`
- `:ALARm:ENABLE?`

**STATuS**

- `:OPERation:CONDition?`
- `:OPERation[:EVENT]?`
- `:OPERation:ENABLE <enable_value>`
- `:OPERation:ENABLE?`

**DATA:POINts**

- `:EVENT:THReshold <num_rdgs>`
- `:EVENT:THReshold?`

- `*CLS`

- `*PSC {0|1}`
- `*PSC?`

- `*OPC`

**Calibration Commands**

*(see page 292 in the User’s Guide)*

**CALibration?**

**CALibration:COUNT?**

**CALibration**

- `:SECure:CODE <new_code>`
- `:SECure:STATe {OFF|ON},<code>`
- `:SECure:STATe?`

**CALibration**

- `:STRING <quoted_string>`
- `:STRING?`

**CALibration**

- `:VALue <value>`
- `:VALue?`
Service-Related Commands
(see page 294 in the User’s Guide)

INSTrument
 :DMM (OFF|ON)
 :DMM?
 :DMM:INSTalled?

DIAGnostic
 :DMM:CYCLes?
 :DMM:CYCLes:CLEar (1|2|3)

DIAGnostic:
 :RELay:CYCLes? [(@<ch_list>)]
 :RELay:CYCLes:CLEar [(@<ch_list>)]

*RST

SYSTem:PRESet

SYSTem:CPON (100|200|300|ALL)

SYSTem:VERSion?

*TST?

IEEE 488.2 Common Commands

*CLS
*ESR?
*ESE <enable_value>
*ESE?
*IDN?
*OPC
*OPC?
*PSC (0|1)
*PSC?
*RST

*SAV (0|1|2|3|4|5)
*RCL (0|1|2|3|4|5)

*STB?
*SRE <enable_value>
*SRE?
*TRG
*TST?

Default parameters are shown in **bold**.
**Agilent 34903A 20-Channel Actuator**  
(see page 168 in the User’s Guide)

![Diagram of 20-Channel Actuator](image)

**Agilent 34904A 4x8 Matrix**  
(see page 170 in the User’s Guide)

![Diagram of 4x8 Matrix](image)
Agilent 34905A/6A Dual 4-Channel RF Multiplexers
(see page 172 in the User’s Guide)

Agilent 34908A 40-Channel Single-Ended Multiplexer
(see page 174 in the User’s Guide)
**Agilent 34907A Multifunction Module**

*(see page 176 in the User's Guide)*

![Diagram of DIO, TOT, and DAC modules]
## Factory Reset State

The table below shows the state of the instrument after a FACTORY RESET from the Sto/Rcl menu or *RST command from the remote interface.

<table>
<thead>
<tr>
<th>Measurement Configuration</th>
<th>Factory Reset State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>DC Volts</td>
</tr>
<tr>
<td>Range</td>
<td>Autorange</td>
</tr>
<tr>
<td>Resolution</td>
<td>5 ½ digits</td>
</tr>
<tr>
<td>Integration Time</td>
<td>1 PLC</td>
</tr>
<tr>
<td>Input Resistance</td>
<td>10 MΩ (fixed for all DCV ranges)</td>
</tr>
<tr>
<td>Channel Delay</td>
<td>Automatic Delay</td>
</tr>
<tr>
<td>Totalizer Reset Mode</td>
<td>Count Not Reset When Read</td>
</tr>
<tr>
<td>Totalizer Edge Detect</td>
<td>Rising Edge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scanning Operations</th>
<th>Factory Reset State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scan List</td>
<td>Empty</td>
</tr>
<tr>
<td>Reading Memory</td>
<td>All Readings are Cleared</td>
</tr>
<tr>
<td>Min, Max, and Average</td>
<td>All Statistical Data is Cleared</td>
</tr>
<tr>
<td>Scan Interval Source</td>
<td>Immediate</td>
</tr>
<tr>
<td>Scan Interval</td>
<td>Front Panel = 10 Seconds</td>
</tr>
<tr>
<td>Scan Count</td>
<td>Remote = Immediate</td>
</tr>
<tr>
<td>Scan Reading Format</td>
<td>Front Panel = Continuous</td>
</tr>
<tr>
<td>Monitor in Progress</td>
<td>Remote = 1 Scan Sweep</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mx+B Scaling</th>
<th>Factory Reset State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain Factor (&quot;M&quot;)</td>
<td>1</td>
</tr>
<tr>
<td>Scale Factor (&quot;B&quot;)</td>
<td>0</td>
</tr>
<tr>
<td>Scale Label</td>
<td>Vdc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alarm Limits</th>
<th>Factory Reset State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm Queue</td>
<td>Not Cleared</td>
</tr>
<tr>
<td>Alarm State</td>
<td>Off</td>
</tr>
<tr>
<td>Hi and LO Alarm Limits</td>
<td>0</td>
</tr>
<tr>
<td>Alarm Output</td>
<td>Alarm 1</td>
</tr>
<tr>
<td>Alarm Output Configuration</td>
<td>Latched Mode</td>
</tr>
<tr>
<td>Alarm Output State</td>
<td>Output Lines are Cleared</td>
</tr>
<tr>
<td>Alarm Output Slope</td>
<td>Fail = Low</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module Hardware</th>
<th>Factory Reset State</th>
</tr>
</thead>
<tbody>
<tr>
<td>34901A, 34902A, 34908A</td>
<td>Reset: All Channels Open</td>
</tr>
<tr>
<td>34903A, 34904A</td>
<td>Reset: All Channels Open</td>
</tr>
<tr>
<td>34905A, 34906A</td>
<td>Reset: Channels s11 and s21 Selected</td>
</tr>
<tr>
<td>34907A</td>
<td>Reset: Both DIO Ports = Input, Count = 0, Both DACs = 0 Vdc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>System-Related Operations</th>
<th>Factory Reset State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display State</td>
<td>On</td>
</tr>
<tr>
<td>Error Queue</td>
<td>Errors Not Cleared</td>
</tr>
<tr>
<td>Stored States</td>
<td>No Change</td>
</tr>
</tbody>
</table>