



Agilent OBSAI Protocol Tester

Hardware Reference Guide

Notices

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Installation Guides

You can find the installation guides for different components of the product on the product CD. Agilent recommends you to do not switch on the instrument before you have understood all the applicable installation instructions and have met all the installation prerequisites.

Where to find more information

You can find more information about OBSAI Protocol Tester from the following link:

<http://www.agilent.com/find/obsai>

You can also look for search a local contact for assistance on the following link:

<http://www.agilent.com/find/assist>

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Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

Safety Symbols on Instruments



Indicates warning or caution. If you see this symbol on a product, you must refer to the manuals for specific Warning or Caution information to avoid personal injury or damage to the product.



Frame or chassis ground terminal. Typically connects to the equipment's metal frame.



Indicates hazardous voltages and potential for electrical shock.



Indicates that antistatic precautions should be taken.



Indicates hot surface. Please do not touch.



Indicates laser radiation turned on.



CSA is the Canadian certification mark to demonstrate compliance with the Safety requirements.



CE compliance marking to the EU Safety and EMC Directives.

ISM GRP-1A classification according to the international EMC standard.

ICES/NMB-001 compliance marking to the Canadian EMC standard.

Safety Summary

General Safety Precautions

The following general safety precautions must be observed during all phases of operation of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument.

Agilent Technologies Inc. assumes no liability for the customer's failure to comply with these requirements.

Before operation, review the instrument and manual for safety markings and instructions. You must follow these to ensure safe operation and to maintain the instrument in safe condition.

General

This product is a Safety Class 1 instrument (provided with a protective earth terminal). The protective features of this product may be impaired if it is used in a manner not specified in the operation instructions.

All Light Emitting Diodes (LEDs) used in this product are Class 1 LEDs as per IEC 60825-1.

Environment Conditions

This instrument is intended for indoor use in an installation category II, pollution degree 2 environment. It is designed to operate at a maximum relative humidity of 95% and at altitudes of up to 2000 meters.

Refer to the specifications tables for the ac mains voltage requirements and ambient operating temperature range.

Before Applying Power

Verify that all safety precautions are taken. The power cable inlet of the instrument serves as a device to disconnect from the mains in case of hazard. The instrument must be positioned so that the operator can easily access the power cable inlet. When the instrument is rack mounted the rack must be provided with an easily accessible mains switch.

Ground the Instrument

To minimize shock hazard, the instrument chassis and cover must be connected to an electrical protective earth ground. The instrument must be connected to the ac power mains through a grounded power cable, with the ground wire firmly connected to an electrical ground (safety ground) at the power outlet. Any interruption of the protective (grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in personal injury.

Do Not Operate in an Explosive Atmosphere


Do not operate the instrument in the presence of flammable gases or fumes.

Do Not Remove the Instrument Cover

Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made only by qualified personnel.

Instruments that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.

Environmental Information

	<p>This product complies with the WEEE Directive (2002/96/EC) marking requirements. The affixed label indicates that you must not discard this electrical/ electronic product in domestic household waste.</p> <p><i>Product Category: With reference to the equipment types in the WEEE Directive Annex I, this product is classed as a "Monitoring and Control instrumentation" product.</i></p> <p>Do not dispose in domestic household waste.</p> <p><i>To return unwanted products, contact your local Agilent office, or see www.agilent.com/environment/product/ for more information.</i></p>
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Printing History

Agilent Technologies, Inc. can issue revisions between the product releases to reflect the latest and correct information in the guide. Agilent Technologies, Inc. also reserves its right to not issue a new edition of the guide for every system release.

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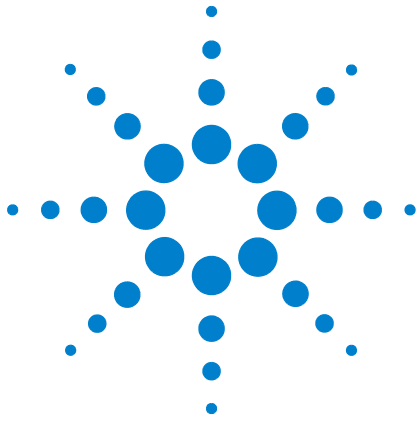
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1 OBSAI Protocol Tester Kits

OBSAI Protocol Tester Kits 10

This chapter lists the components of the different kits available for OBSAI Protocol Tester.

OBSAI Protocol Tester Kits

OBSAI Protocol Tester comes in the form of the following product kits:

- [N5341A_Kit](#)
- [N5340A_Kit](#)

N5341A_Kit

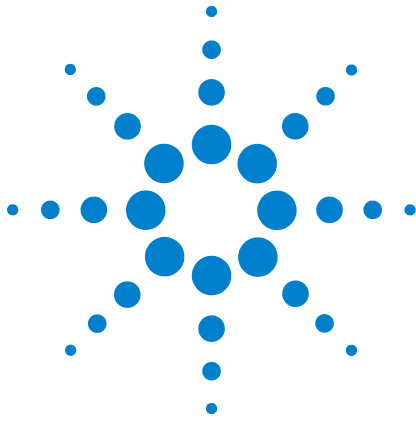
This kit comes with the following set of products:

- [RP1 Cable](#)

N5340A_Kit

This kit comes with the following set of products:

- [RP1 Cable](#)
- [RP3 Cable](#)



2 N5341A Base Station Link Test Module

N5341A Base Station Link Test Module 12

This chapter provides information on the N5341A Base Station Link Test module used for OBSAI.



N5341A Base Station Link Test Module

N5341A Base Station Link Test module is an RP3-01 input module, which you can use to emulate RF, Baseband, or CCM.

Figure 1 shows the N5341A Base Station Link Test module.

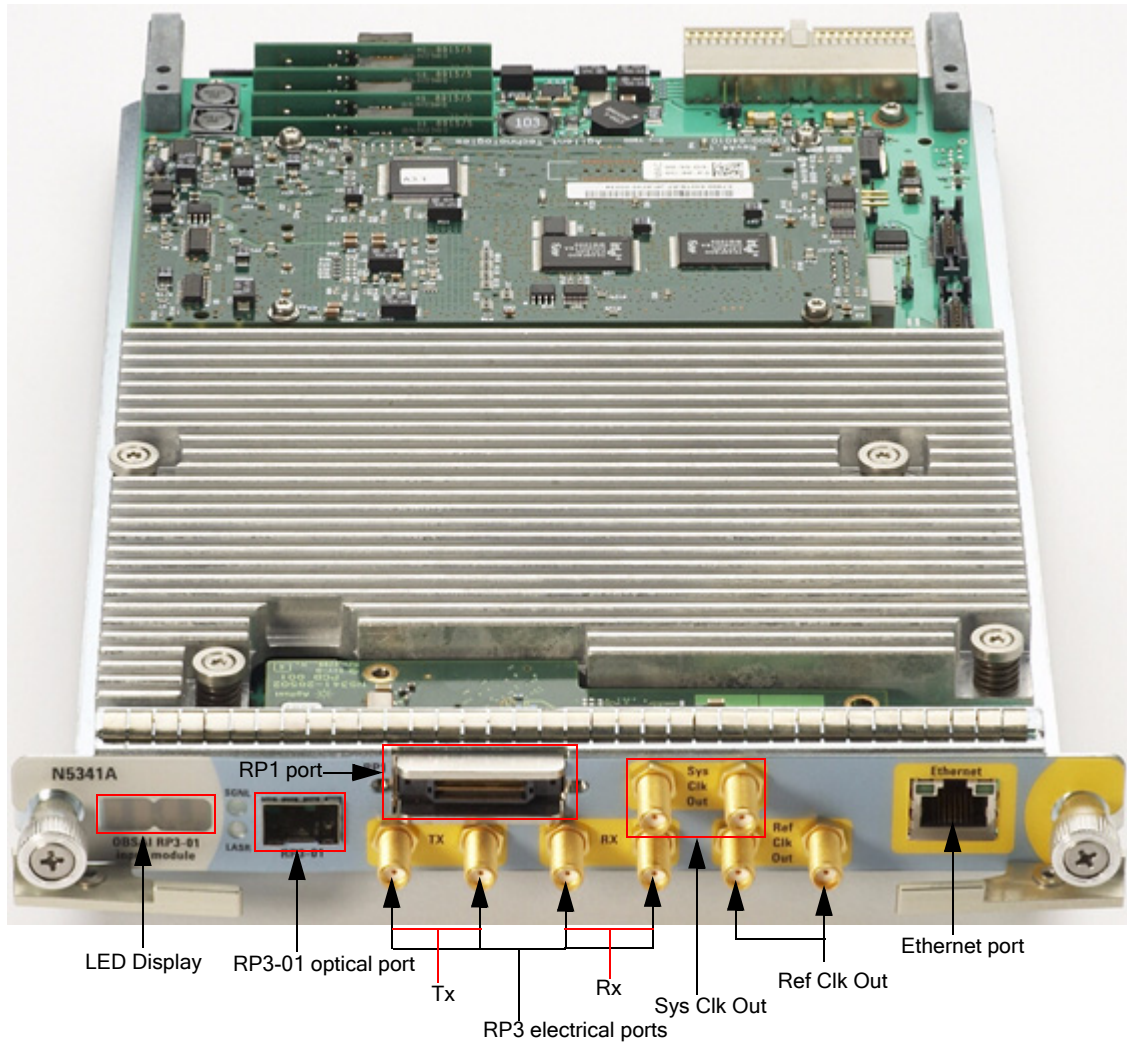


Figure 1 N5341A Base Station Link Test Module

As shown in Figure 1, the N5341A Base Station Link Test module has the following components:

- **LED Display:** This component is used to display the diagnostic information when fatal faults are discovered, and to indicate progress during the bootstrap. If everything is working properly, then this component displays the module number, such as 103.
- **RP3-01 optical port:** This component is a receiver and transmitter port, which is used to connect the N5341A module with DUT using the optical cable.
- **RP1 port:** This component connects the N5341A module with DUT using the *RP1 cable*, and exhibits the following behavior:
 - When you are using N5341A as a Base Station with CCM, the RP1 cable provides internally generated *sync bursts* to DUT.
 - When you are using N5341A as an RF module, the RP1 cable provides *reference clock* and *sync bursts* to N5341A from DUT.
- **RP3 electrical ports:** This component is a set of Rx and Tx ports, which are used to connect the N5341A module with DUT using the electrical cables.
- **Sys Clk Out:** This component provides a reference clock of 307.2 MHz, which is locked to the system clock of 30.72 MHz.
- **Ref Clk Out:** This component provides a system clock of 30.72 MHz when N5341A is working as a base station with CCM.
- **Ethernet port:** This component is used to connect N5341A with LAN.

WARNING

Do not directly touch any component on the N5341A module. It may be hot.

CAUTION

Components on the N5341A module are sensitive to the static electricity. Therefore, take necessary anti-static precautions, such as wear a grounded wrist strap, to minimize the possibility of electrostatic damage.

2 N5341A Base Station Link Test Module



3 N5340A Base Station Test Extension Module

N5340A Base Station Test Extension Module 16

This chapter provides information on the N5340A Base Station Test Extension module used for OBSAI.



N5340A Base Station Test Extension Module

The N5340A Base Station Test Extension module is an RP3 input module, which you can use to provide up to four RP3 links to the current configuration.

Figure 2 shows the N5340A Base Station Test Extension module.

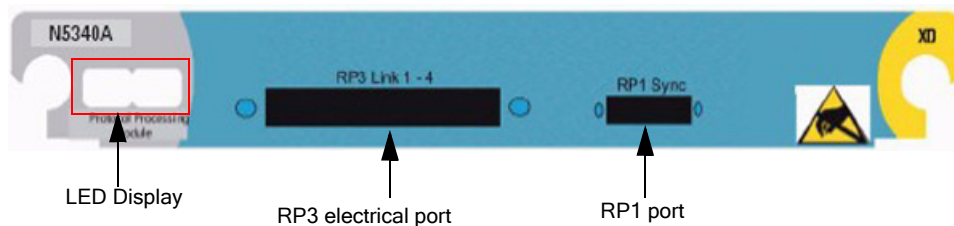


Figure 2 N5340A RP3 Module

As shown in Figure 2, the N5340A RP3 module has the following components:

- **LED Display:** This component is used to display the diagnostic information when fatal faults are discovered, and to indicate progress during the bootstrap. If everything is working properly, then this component displays the module number, such as 103.
- **RP3 electrical port:** This component provides four links, which are used to connect the N5340A module with DUT using the RP3 cable.

The RP3 electrical port is a 100-pin connector that provides four electrical links and a reference clock output.

Figure 3 shows the pins arrangement.

Labeling					Labeling
	2	NC	NC	1	
	4	NC	NC	3	
	6	NC	NC	5	
	8	GND	GND	7	
	10	Q_p	P_p	9	
	12	GND	GND	11	
	14	Q_n	P_n	13	
	16	GND	GND	15	
	18	GND	GND	17	
	20	N_p	M_p	19	
	22	GND	GND	21	
	24	N_n	M_n	23	
	26	GND	GND	25	
	28	GND	GND	27	
Tx2_p	30	L_p	K_p	29	Tx1_p
	32	GND	GND	31	
Tx2_n	34	L_n	K_n	33	Tx1_n
	36	GND	GND	35	
	38	GND	GND	37	
Rx2_p	40	J_p	I_p	39	Rx1_p
	42	GND	GND	41	
Rx2_n	44	J_n	I_n	43	Rx1_n
	46	GND	GND	45	
	48	NC	REF1_p	47	Ref. Clk_p
	50	NC	REF1_n	49	Ref. Clk_n
	52	NC	NC	51	
	54	NC	NC	53	
	56	GND	GND	55	
Rx4_n	58	H_n	G_n	57	Rx3_n
	60	GND	GND	59	
Rx4_p	62	H_p	G_p	61	Rx3_p
	64	GND	GND	63	
	66	GND	GND	65	
Tx4_n	68	F_n	E_n	67	Tx3_n
	70	GND	GND	69	
Tx4_p	72	F_p	E_p	71	Tx3_p
	74	GND	GND	73	
	76	GND	GND	75	
	78	D_n	C_n	77	
	80	GND	GND	79	
	82	D_p	C_p	81	
	84	GND	GND	83	
	86	GND	GND	85	
	88	B_n	A_n	87	
	90	GND	GND	89	
	92	B_p	A_p	91	
	94	GND	GND	93	
	96	NC	NC	95	
	98	NC	NC	97	
	100	NC	NC	99	

	High Speed Signal with SMA connector
	High Speed Signal with 1nF Capacitor and SMA connector
	Ground
	not connected

Figure 3 100-pin arrangement

- **RP1 port:** This component connects the N5340A module with DUT using the *RP1 cable*, and provides *reference clock* and *sync bursts* to N5340A from DUT when used as a Base Station or as an RF module.

The RP1 port is a 60-pin connector that provides 30.72 MHz system clock input, sync burst input and output, and trigger output.

Figure 4 shows the pins arrangement.

WARNING

Do not directly touch any component on the N5340A module. It may be hot.

CAUTION

Components on the N5340A module are sensitive to the static electricity. Therefore, take necessary anti-static precautions, such as wear a grounded wrist strap, to minimize the possibility of electrostatic damage.



4 RP3 Cable

RP3 Cable 22

This chapter provides information on the RP3 cable used with N5340A.



RP3 Cable

Figure 5 shows the RP3 cable.

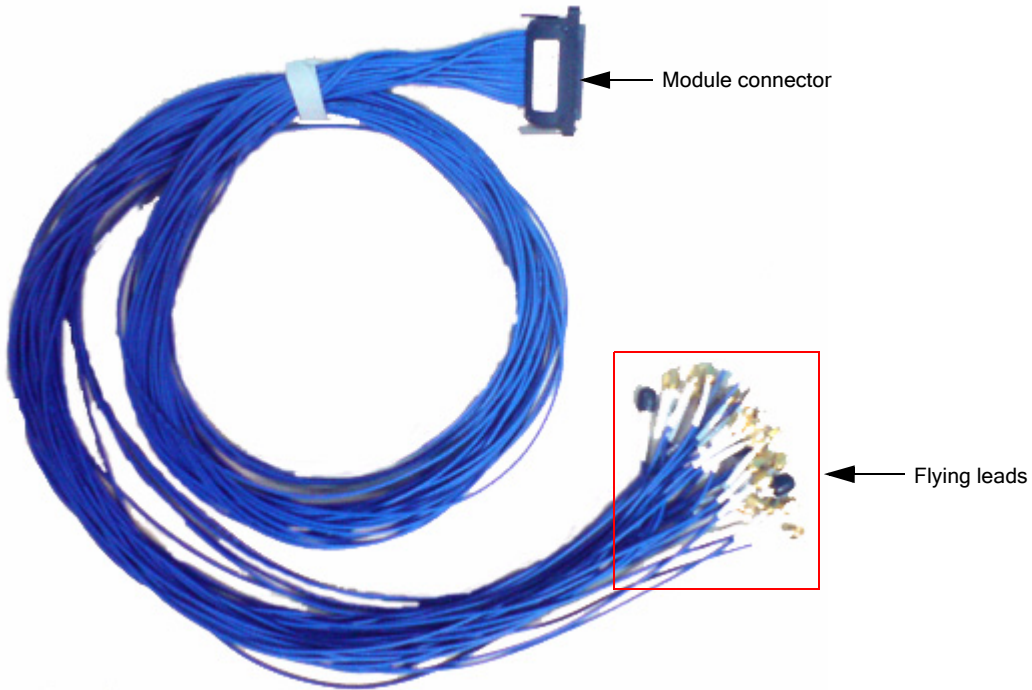


Figure 5 RP3 Cable

As shown in [Figure 5](#), the RP3 cable has the following components:

- **Module connector:** This component connects to the *RP3 electrical port* component of the N5340A module.

For information on N5340A, refer [Chapter 3](#), N5340A Base Station Test Extension Module.

- **Flying leads:** This component connects to DUT. There are 18 flying lead cables that you can use to connect to DUT. Out these, 16 flying leads are for Tx and Rx, and two flying leads are for system clock.

WARNING

Do not directly touch any component on the RP3 cable. It may be hot.

CAUTION

Components on the RP3 cable are sensitive to the static electricity. Therefore, take necessary anti-static precautions, such as wear a grounded wrist strap, to minimize the possibility of electrostatic damage.

4 RP3 Cable



5 RP1 Cable

RP1 Cable 26

This chapter provides information on the RP1 cable used with N5341A and N5340A.



RP1 Cable

Figure 6 shows the RP1 cable.

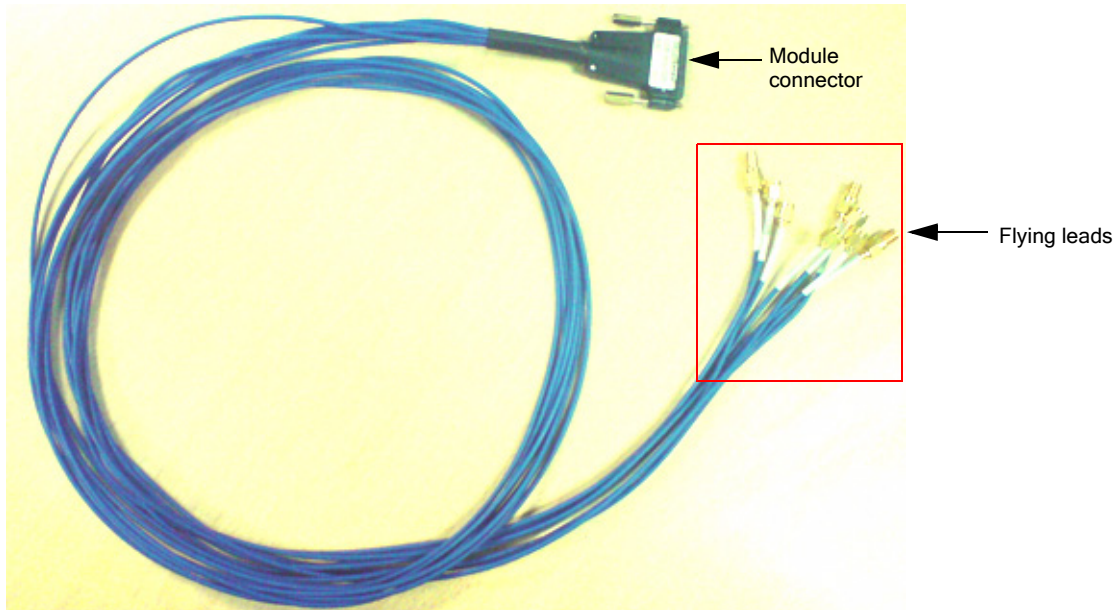


Figure 6 RP1 Cable

As shown in [Figure 6](#), the RP1 cable has the following components:

- **Module connector:** This component connects to the *RP1 port* component of the N5340A and N5341A modules.

For information on N5340A, refer to [Chapter 3](#), N5340A Base Station Test Extension Module.

For information on N5341A, refer to [Chapter 2](#), N5341A Base Station Link Test Module.

- **Flying leads:** This component connects to DUT. There are 8 flying lead cables that you can use to connect to DUT. Out these flying leads, 4 are for sync burst in and out, 2 are for system clock, and 2 are for trigger out.

NOTE

At present, RP1 cable does not support trigger out capabilities.

WARNING

Do not directly touch any component on the RP1 cable. It may be hot.

CAUTION

Components on the RP1 cable are sensitive to the static electricity. Therefore, take necessary anti-static precautions, such as wear a grounded wrist strap, to minimize the possibility of electrostatic damage.

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