ROHDE&SCHWARZ HEALTH GUIDE

For signal generators

For further information on the topics below
- ► please consult the safety instructions and
- ► the user manual for your instrument

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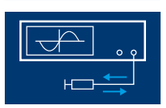
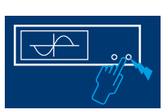
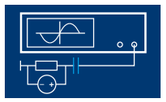
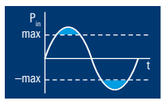
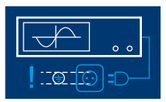
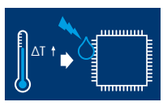
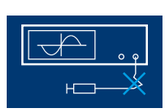
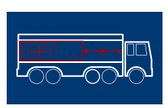
PREVENTING ELECTRICAL DAMAGE

	DO:	DO NOT:
	► Consult the operating manual or data sheet for further information before using any input or output.	► Operate the instrument outside specifications. Warning signs are strategically placed at sensitive connectors.
	► Ensure proper impedance matching between any instrument port and the DUT before activating an RF output. Mismatch between instrument ports and the DUT will lead to signal reflections. These, in turn, can lead to overload, which may cause damage to the instrument.	► Overload the signal outputs by exceeding the reverse power limit. The reverse power limit is specified in the data sheet.
	► Observe ESD precautions: Use a wrist strap and cord to ground yourself, or use a conductive floor mat and heel ground strap combination when you connect or disconnect a DUT or test fixture to the instrument's test ports. Install ESD protective covers after each use of the instrument's ports.	► Damage the instrument's earth grounding protection by using an extension cable, power cable or autotransformer without a protective ground conductor.
	► Protect the RF ports from direct current. Applicable limits are specified in the data sheet (see "Maximum permissible DC voltage").	► Directly connect a DC supply to an RF output. Instead, use a bias tee for both biasing your DUT and supplying it with the RF signal.
	► Verify the signal power of an external generator before applying it to the instrument's inputs. The displayed and actual output power of the external signal generator may differ depending on the connected load.	► Exceed input signal limits specified in the data sheet. Even connected USB devices with an external power supply can feed back current into the 5 V pin of the USB port.
	► Consult the data sheet on the permissible characteristics of the instrument's power supply. Always use a power supply with a connection to ground.	► Use any AC power cable other than that delivered with the instrument. Other cables may be of poorer quality and could result in damage to the instrument.
	► Ensure proper airflow by providing a minimum distance of 10 cm from other objects and externally cleaning the fans at regular intervals.	► Stack too many instruments. Instruments placed on top take in the hot air of lower ones, resulting in higher ambient temperature and potential overheating.
	► Ensure that the ambient temperature is within the range specified in the data sheet.	► Operate the instrument in case it shows signs of condensation. Condensation is the result of rapid temperature changes, for example during transport or power-up.

PREVENTING MECHANICAL DAMAGE

	DO:	DO NOT:
	► Take preventive measures in case of a suboptimal operating site, for example by providing extra shielding for your instruments.	► Operate the instrument in a wet or polluted environment or expose it to high electromagnetic interference, as these conditions can lead to premature aging or cause damage to the instrument.
	► Clean and inspect each connector prior to its use. Make sure to align the connectors on the cable and on the instrument along a common axis before tightening. Turn the outer connector nut, not the cable itself. Use a calibrated torque wrench to tighten the connector with the specified torque.	► Tighten cables excessively, as this can cause damage to the cable or the connector. In contrast, insufficient tightening can lead to inaccurate measurement results. Make sure not to mix incompatible connector systems.
	► Make sure to prevent sharp bending of cables. Sharp bends lead to reflections and possibly to permanent cable damage. Rather use a cable with the appropriate length.	► Repeatedly bend cables, as this will increase wear.
	► Look for dirt and outer and inner conductor damage before using any cable. In case of dirt, apply compressed air to dislodge larger debris. Make use of isopropanol moistened foam cleaning swabs or wooden cocktail sticks to remove the remaining dirt. Dry the connector using compressed air.	► Blow directly at the inner conductor, as the applied pressure could bend the conductor.
	► Use your fingers or a stylus pen when touching the screen. Use a soft, dry, lint-free dust cloth for cleaning.	► Use cleaning agents, as there is a risk of damage to the screen. Never touch the screen with ballpoint pens or other sharp objects.
	► Use both handles on the front or side of the casing for lifting or carrying the instrument.	► Apply excessive force to the handles, for example by carrying the instrument using only one handle.
	► Fold the feet in or out completely to ensure stability of the instrument. The feet can collapse if they are not folded out completely or if the instrument is shifted while the feet are folded out.	► Exceed the maximum force or load on the instrument, with or without folded-out feet. Applicable limits are specified in the user manual.
	► Use the original packaging for transportation. It is specifically designed to prevent mechanical damage and to provide ESD protection.	► Leave headroom in the transport box, as this means loose cargo and potential damage. Never use styrene pellets for packaging, as they do not provide proper cushioning.

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