WRX and WRC-7708 Weather Radar Test Set

An integrated test solution for ARINC 708 coherent weather radar systems

- Endorsed by OEM Weather Radar System manufacturers
- Built-in Doppler shift
- Digital readout of the output frequency or PRF
- Digital readout of transmitter power PRF controlled manually, or by transmitter, or external sync input
- Pulse width manually controlled, equal to transmitter input or 270 microseconds (fixed)

Designed to test weather radar systems, the WRX and WRC-7708 tests air transport weather radar systems. The system consists of three main elements: The RDX-7708R (or RDX-7708BRW) or the RDC-7708R, the STD-7000A and the DF-7708 plus a terminal display and keypad.

The RDX and RDC systems are the RF stimulus for the unit under test (UUT) R/T unit. The digital controller (STD-7000A) supplies the digital stimulus for the UUT on the applicable ARINC-429 and 453 digital bus interfaces through the DF-7708.

The STD-7000A controls the discrete function and interface unit (DF-7708), which supports the remaining UUT ARINC connector requirements necessary to make the WRX or WRC-7708 test system a complete test station for Rockwell Collins weather radar systems.

The RDX 7708BRW also interfaces with the Allied Signal air transport weather radar system for complete testing capability.

RDX-7708R (or RDX-7708BRW) or RDC-7708.

The RDX-7708 systems or RDC-7708 system provides an RF source and monitor for an ARINC-708 configured weather radar. This solid state unit offers complete testing of the RF capability of the receiver/transmitter, and when used with the STD-7000A and DF-7708, completes a manual test station for the Rockwell Collins weather radar system.

Additional Features

- Range reply selectable in 1 microsecond or 1 mile increments
- RF output adjustable in 1 dBm increments to -127 dBm
- Contour boost in 0.1 dB increments to +20 dB
- Built-in variance modulator

All the above can be remotely controlled through the IEEE 488-1978 GPIB versions

- Monitor outputs for detector, spectrum analyzer and sync

Specifications

RDX-7708R, BRW or RDC-7708R

Reference RF Input ¾

Rockwell Collins X Band
152.777 MHz

Rockwell Collins C Band
146.666 MHz

Allied Signal X Band
78.6616 MHz

RF Output (Reference or Variable)

FREQUENCY

RDX-7708 Range
9295 thru 9425 MHz

RDC-7708 Range
5350 thru 5470 MHz

OUTPUT LEVELS

Range
-50 dBm thru -127 dBm in 1 dB steps (at 20 dB coupler output)

Accuracy
±2 dB over frequency and attenuation range

CONTOUR BOOST

Range
0 thru 19.9 dB for RF outputs less than or equal to -70 dBm

DOPPLER OFFSET

Range
0 kHz thru +29 kHz

Resolution
1 kHz

RF ON/OFF Ratio
70 dB or greater

Pulse Modulation

INTERNAL PRF GENERATOR

Range
0 thru 9999 pps

Resolution
1 Hz

OUTPUT PULSE WIDTH

Range
0 thru 99 ms and 270 µs (fixed)

Resolution
0.1 µs

RETURN DELAY

Range
1 thru 999 µs or nmi

Resolution
1 unit

Displays

FREQUENCY COUNTER

Accuracy
±3 kHz

Resolution
1 kHz

PEAK POWER INDICATOR

Range
RDX-7708 - 40 thru 250 watts
RDC-7708 - 80 thru 500 watts

Accuracy
-0.6 dB

Resolution
1 W

Versions and Accessories

When ordering please quote the full order number information

Ordering Numbers	*Selection Information*
RDC-7708R	Rockwell Collins C band
RDX-7708BRW	Allied Signal band X
RDX-7708CRW	Dual reference Rockwell Collins X band and Allied Signal X band
RDX-7708R	Rockwell Collins X band
	Versions
RDXR	RDX-7708R Weather Radar Bench Test (152.777 MHz/GPIB)
RDXR-C	RDX-7708R Weather Radar Bench Test (152.777 MHz/GPIB) with Certificate of Calibration
RDXBRW	RDX-7708BRW Weather Radar Bench Test (78.6616 MHz)
RDXBRW-C	RDX-7708BRW Weather Radar Bench Test (78.6616 MHz) with Certificate of Calibration
RDXCRW	RDX-7708CRW Weather Radar Bench Test (152.777 MHz & 78.6616 MHz/GPIB)
RDXCRW-C	RDX-7708CRW Weather Radar Bench Test (152.777 MHz & 78.6616 MHz/GPIB) with Certificate of Calibration
RDCR	RDC-7708R Weather Radar Bench Test (146.666 MHz/GPIB)
RDCR-C	RDC-7708R Weather Radar Bench Test (146.666 MHz/GPIB) with Certificate of Calibration
	Accessories (Supplied)
	Line Cord
	Microwave Coax Cable
	BNC to BNC coax cable (video detector)
	RF power module
	20 dB attenuator RDX-7708 only

STD-7000A

The STD-7000A (WRX-7708 Program) generates and/or monitors the ARINC-429 and ARINC-453 buses as defined in the ARINC-708 Specification. Additionally, it interfaces to the DF-7708 discrete functions interface to control and monitor power and discrete signals to the unit under test (UUT) as defined by ARINC-708. All operator interface is via a 24 line by 80 character CRT monitor and a hex (16 key) keypad.

Standard Features

- Four ARINC-708 control bus outputs with independent control of data and transmission rate of each
- Selected display of one of four input control buses
- Two attitude bus outputs (onside and offside) with independent control of data and transmission rate of each
- Three ARINC-708 data bus outputs with a choice of four patterns (X/Y crosshatch, bar, arc and sector)
- Selected display of one of three input data buses
- All displays and controls are in ARINC-708 terminology to facilitate operator interface

Specifications

ARINC-429 (High and Low Speed I/0 buses)

Number of Buses
Six (6) programmable high speed and low speed I/0 buses

Low Speed Bit Rate
12.6 kHz

High Speed Bit Rate
100 kHz

Message Transmission Rate
Programmable from 0 to 255 messages per second, in minimum of 1 message per second increments.

ARINC-453 (Very High Speed I/0 Buses)

Number of Buses
Three (3)

Bit Rate
1 MHz

BUS I/O CAPABILITIES

Output
Selected or simultaneous operation of all 3 output buses; data content and transmission rate of each bus are identical.

Message Transmission Rate
Programmable from 0 to 255 messages per second, in minimum of 1 message per second increments.

Versions and Accessories

When ordering please quote the full order number information

Ordering Number	*Versions*
7000	STD-7000A Controller/Monitor
7000-C	STD-7000A Controller/Monitor with certificate of calibration
	Accessories (Supplied)
	3 x Line Cord
	Operators Manual
	CRT Terminal & keyboard
	CRT interface
	RS-232 Cable

DF-7708

The DF-7708 provides all interfaces, except RF, between the test system and the unit under test (UUT). A separate and unique cable is provided for each type of UUT. All power and discrete signals to the UUT are controlled and monitored by circuitry in the DF-7708. Additionally, it routes the ARINC control buses, digital attitude buses and data buses to the appropriate connector pins on the UUT.

Standard Features

- Controls and monitors the appropriate UUT power
- Controls and monitors all discrete signals to the UUT per the ARINC-708 specification
- Sources both analog three wire and analog two wire voltages to the UUT
- Sources Johnson Code drive for Collins Antenna Pedestal
- Provides front panel test points to monitor all signals on the UUT connector

Specifications

Analog Pitch (3 W)
Outputs of 0, ±5°, ±10°, ±15°, ±20°, ±25°, and ±30°, with an accuracy of ±.1°

Analog Roll (3 W)
Same as Analog Pitch (3 W)

Analog Pitch (2 W)
Same as Analog Pitch (3 W)

Analog Roll (2 W)
Same as Analog Pitch (3 W)

ARINC Buses
Routes ARINC-429 and ARINC-453 buses from STD-7000A to correct connector pins on UUT

General

Dimensions (all units)
427 mm (16.8 in) wide, 178 mm (7 in) high, 467 mm (18.4 in) deep

Weight
RDX-7708 or RDC-7708 - 33 lb (15 kg)
STD-7000 - 9.1 kg (20 lb)
DF-7708 - 9.1 kg (20 lb)

Power Requirements
RDX-7708 or RDC-7708 ¾ 110/220 VAC, 50-400 Hz
STD-7000 ¾ 110 VAC, 50 or 60 Hz
DF-7708 ¾ 110 VAC, 50-400 Hz
220 V, 50-400 Hz available on request

Power Consumption
100 W

Versions and Accessories

When ordering please quote the full order number information

Ordering Numbers	*Versions*
7708	DF-7708 UUT interface
7708-C	DF-7708 UUT Interface with certificate of calibration
	Accessories (Supplied)
	Line Cord
	STD-7000A to DF-7708 interconnect cable
	R/T unit cable
	Control unit cable