WA-0851

Antenna Distribution and Frequency Extension System

- Wide frequency range from 0.4 MHz to 8.599 GHz
- Inbuilt downconverters to 0 - 1.8 GHz output range
- 8 antenna inputs, 8 receiver outputs
- Custom configurations available
- Manual or remote control
- High IP3 matrix switches and amplifiers
- High isolation
- High stability downconversion
- Power feed for active antennas
- Ruggedized enclosure for mobile operations

The WiNRADiO WA-0851 Antenna Distribution System is an antenna switching and distribution device suitable for multi-channel receiver arrays and monitoring stations. While it particularly excells in combination with the WiNRADiO MS-8118/G3 Multichannel Surveillance and Monitoring System (whose frequency range it extends up to 8.599 GHz), this device can also be used with third-party receiver systems.

The WA-0851 system features 8 antenna inputs (4 separate inputs for HF/VHF/UHF ranges, 4 separate inputs for SHF) and 8 receiver outputs.

Internally, it consists of antenna matrix switches, high dynamic range preamplifiers and high stability frequency downconverters. These downconverters convert input frequencies over 1.8 GHz (up to 8.599 GHz) to the 0 - 1.8 GHz output frequency range.

The WA-0851 system is eminently suitable government, defence, law enforcement other demanding high-end applications.

The antenna inputs can be customized and configured to the user request by using HF, VHF, UHF, SHF1 and SHF2 modules for frequencies shown in the table below:

Module	Bottom frequency	Top frequency
HF	0.4 MHz	30 MHz
VHF	30 MHz	300 MHz
UHF	300 MHz	1.800 GHz
SHF1	1.800 GHz	3.500 GHz
SHF2	1.800 GHz	8.599 GHz

The unit also contains convenient power supplies for external antenna preamplifiers (12 V current-limited DC voltage source is internally applied to the antenna leads of HF, VHF and UHF inputs).

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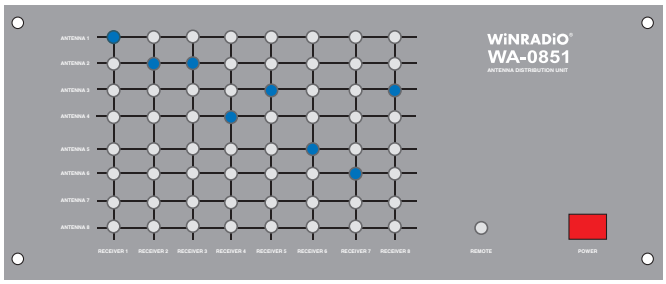
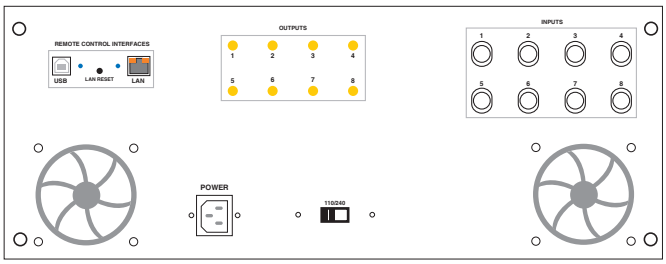
Hardware

The WA-0851 front panel contains 8 x 8 LED-illuminated matrix switch buttons, a remote enable button and the power switch.



The rear panel features eight N-type connector antenna inputs. The eight outputs are connected to the receivers using SMA connectors.

A connection to the USB port is via a standard USB-B connector and the LAN network interface is via an RJ-45 connector.



Software

When used with the WiNRADiO MS-8118/G3 Multichannel Surveillance and Monitoring System, the WA-0851 software integrates seamlessly with the system, and the frequency range of the MS-8118/G3 unit automatically extends according to the WA-0851 configuration.

When used stand-alone, or in conjunction with third-party receiver systems, the WA-0851 unit can be controlled either manually using the operator control panel, or remotely via a supplied software application.

A programmers' SDK API is also available, to facilitate OEM integration and third-party application development.

Configuration

The WA-0851 is factory-configurable to any combination of the eight antenna inputs. For example, a WA-0851 unit can have eight HF inputs, or eight VHF inputs, or one HF plus one VHF plus two UHF inputs plus four SHF2 inputs. All combinations are possible, as long as the total number of inputs is eight.

How to order

The order code is in the form of WA-0851/nT-nT-.. where n is the number of inputs of a particular input model type T. There are five possible types:

Module	Type	Bottom frequency	Top frequency
HF	H	0.4 MHz	30 MHz
VHF	V	30 MHz	300 MHz
UHF	U	300 MHz	1.800 GHz
SHF1	S1	1.800 GHz	3.500 GHz
SHF2	S2	1.800 GHz	8.599 GHz

Specifications

Configuration
8 inputs / 8 outputs
non-blocking for HF, VHF, UHF and SHF1 modules, partial blocking for SHF2 modules

RF Connectors
8 x input (N-female)
8 x output (SMA-female)

Gain

HF/VHF/UHF:	-2 dB (±3 dB)
UHF:	-2 dB (±4 dB)
SHF1:	2 dB (±4 dB)
SHF2:	0 dB (±6 dB up to 8 GHz, ±10 dB over 8 GHz)

NF

HF	12 dB
VHF, UHF, SHF1/2	8 dB

Frequency range
Depends on current input module configuration, (0.4 MHz to 8599 MHz when using HF, VHF, UHF and SHF2 modules)

Impedance
50 ohm (all inputs and outputs)

Max. input level

HF, VHF:	+22 dBm for no damage
UHF:	+17 dBm for no damage
SHF1/SHF2:	0 dBm for no damage

IIP1

HF	+13 dBm @ 14 MHz
VHF	+20 dBm @ 150 MHz
UHF	+8 dBm @ 1000 MHz
SHF1/SHF2	-15 dBm @ 2800 MHz

IIP3

HF	+27 dBm @ 14 MHz
VHF	+33 dBm @ 150 MHz
UHF	+23 dBm @ 1000 MHz

Isolation
Output-to-output:
-109 dB @ 10 MHz
-88 dB @ 100 MHz
-74 dB @ 400 MHz
-68 dB @ 1500 MHz

Input-to-output:
-60 dB @ 10 MHz
-44 dB @ 100 MHz
-46 dB @ 400 MHz
-48 dB @ 1500 MHz

Power supply for active antennas
12 V DC (max 0.4 A) on antenna inputs of HF, VHF and UHF modules

Remote control interfaces
USB 1.1/2.0 (USB-B connector)
LAN interface for TCP/IP networks (RJ-45)

Power
120 / 240 V AC, 50 Hz, selectable
13 - 60 W (depends on configuration)

Dimensions
Width: 19" rack
Height: 5RU (8.75" = 222 mm)
Depth: 14.4" (365 mm)

Weight
20.1 - 24.9 lb (9.11 - 11.3 kg)
(depends on configuration)

All values are typical.
Specifications are subject to change without notice due to continuous product development and improvement.

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