

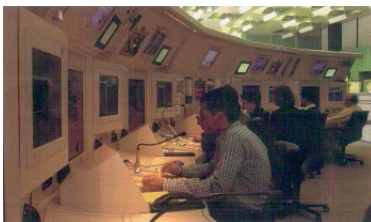
RADIO DISPATCH CONSOLE RDC-16

SCOPE

BISS TECHNOLOGIES offers communication solutions to a Aeronautical Traffic Control Centers and professional organizations that need a dedicated radio telephone system to manage traffic, coordinate operations and distribute information.

A central communications control center can be as simple as one operator managing day-to-day operations with field personnel through a single radio dispatch console.

The scope and complexity of the operation, BISS TECHNOLOGIES can configure a system that precisely meets the user's capability and capacity requirements using a few dispatch consoles in common-parallel or singular operation.



Users



- Aeronautical Traffic Control Centers (ACC)
- Airports Control Centers (TWR)
- SAR
- Electrical and Chemical industry
- Oil and gas industry
- Ambulance
- Fire departments
- Emergency service



The Radio Console RDC-16 is a self-contained, multichannel, radio control console which is available in both desktop or rackmount styles. It provides dispatchers with an efficient means of monitoring and dispatching for a system comprised of up to 16 radio channels.

The Model RDC-16 Radio Console offers a cost-effective high-performance solution for a wide range of users. It is specifically designed for the high reliability mainly for Aeronautical Traffic Control Centers, Airports Control Centers, SAR, Electrical, Chemical, Oil and Gas industries.

The Model RDC-16 can be configured with as few as two channels and grow to 32 channels with the addition of modular channel cards.

The radio channels can be controlled and monitored from up to twenty console operator positions in common or singular operation. Two different styles of console positions are available and may be mixed in the same system: rackmount and desktop consoles.

Features and benefits

- Control of up to 16 radio channels from a single operator position
- Control of up to 16 radio channels from a single operator position in Retransmission mode
- Simple channel expansion using up to 20 consoles in common or singular operation - all functions of the single unit remain available
- Compact, flat design, integration into a desk or 19" rack
- Main/Stby operation using two radio sites for one frequency
- Retransmission on selected channels for collapsed areas
- Compatibility with all kinds of radio base stations

BISS 
TECHNOLOGIES
Voice communication

INDICATION

Each radio channel can indicate the number of frequency, station or freq/station by manual configuration via jumpers directly located at DPS board without SW setting.

Button functions are clearly labeled and color coded on the key's surface to provide easy function association.

Buttons are highlighted LEDs for operations:

- Transmitter on air (PTT is indicated by blinking white Button TX)
- Radio signal received from Main Receiver (squelch is indicated by blinking white Button Main RX)
- Stby Transmitter on air (PTT is indicated by blinking white Button Stby TX)
- Radio signal received from Stby Receiver (squelch is indicated by blinking white Button Stby RX)
- Radio channel is selected for Main Transmitter (white Button Main TX is continuous highlighting)
- Radio channel is selected for Main Receiver (white Button Main RX is continuous highlighting)

- Radio channel is selected for Stby. Transmitter (white Button Stby TX is continuous highlighting)
- Radio channel is selected for Stby Receiver (white Button Stby RX is continuous highlighting)
- Radio channel is shared in Retransmission (white Button RET is continuous highlighting)

DESIGNED FOR RELIABILITY

Depending upon the application requirements, the Series 16 can be configured for "no single point of failure" or full redundant operation.

For particularly critical applications, the Series 16 Consoles can be configured for full redundant operation. Through the use of an automatically switched standby Console, two common controllers may be paralleled: a primary operational unit, and a "hot-standby" unit. The completely separate and isolated hot-standby unit is protected in the event that a lightning-induced transient causes the primary unit to fail. When this occurs, the standby unit is automatically brought on-line operation.

RADIO INTERFACE COMPATIBILITY

The Series 16 is compatible with virtually all manufacturers' base radio stations, control stations, and repeaters utilizing local or EIA standard tone control protocols. Operating position types can be "mixed or matched", and radios and/or operating positions are easily removed.

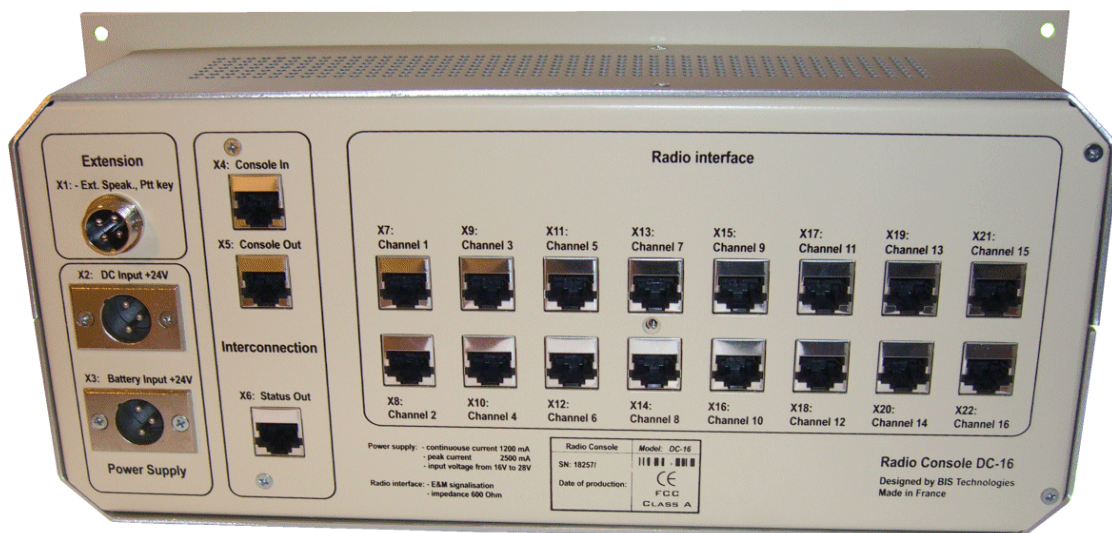
A great variety of radios is available from most frequent manufactures such as:

- Park Air System (¹)
- Telerad (¹)
- Jotron (¹)
- R&S Series 200 and 400 (¹)
- Marconi (¹/²)
- Becker (¹/²)
- OTE (¹)
- Motorola (²)
- Kenwood (²)

(¹): "radio" may be a TX/RX or separate transmitter plus receiver.
(²): DTMF-controlled radio

RADIO CHANNEL INTERFACE

The radio interface can be configured for 2 or 4-wire E&M or PTT/COR control. An option is available for remote control using EIA standard tone sequences. systems require point-to-point Radio channels can be simplex, half or full duplex base stations or repeaters with E&M or tone remote control.



INTER-SWITCH CHANNEL**LINE**

Internal channel lines are used to interconnect two or more Model RDC-16 Radio Consoles into large, multiswitch positions. Internal channel lines use Radio Interface modules equipped with parametrics amplifiers and are interconnected by 8-wire audio microwave or leased line circuits.

CONSOLE MONITORING

RDC-16 Radio Consoles has built-in automatic test for each radio channel. The result from test and parameters settings is available via management port for connection to Central Monitoring Equipment CME. Management port is V.11/RS422 (1200, 2400, 9600 Baud) and can be connected up to 100 Consoles series 300.

BUILT-IN TEST

Built-in test for convenient fault location:

- SBIT: start built-in test (automatically, after switch-on)
- CBIT: continuous built-in test (incl. radio)
- IBIT: initiated built-in test

Setting parameters:

- Line level for each TX channel
- Volume for each channel
- Radio type interface for base station with signaling
- Name for each channel on display or frequency
- Muting
- Connection with next consoles

The console is shipped from the factory tuned and labeled to customer specifications,

Configurations need to be provided manually for decision of higher reliability.

RETRANSMISSION

The operator may select multiple channels simultaneously so that one dispatch may be broadcasted to several channels at once. Group-Selects may be invoked to select predetermined groups of channels.

INDIVIDUAL CHANNEL**VOLUME**

Each channel's volume may be set independently of others, allowing the operator to prioritize listening based on volume level. A digital display shows volume percentage, allowing accurate settings even without audio present. Minimum audio levels can be programmed to avoid missed calls.

BUSY

Whenever another console is transmitting on the channel, the channel's "BUSY" indicator illuminates. This makes it easy for the operator to distinguish parallel console transmissions from field activity.

TRANSMIT

The operator may transmit over the selected channel simply by pressing the "Main or Stby TX" button or by pressing the optional foot-operated transmit switch.

OPTIONS

Desk Microphone -The omnidirectional dynamic desk microphone has its own transmit and monitor bars.

Telephone Radio Headset

Interface -The telephone radio headset interface allows one common headset to be used for parallel working consoles serie 16, with a volume control for each.

When the Radio Console RDC-16 and Telephone Console TC-330 are working in parallel, the telephone set indicates that it is connected to a line (off-hook), the common headset is switched to the telephone and the console's "select" speaker becomes live. If the operator transmits on the Radio Console, the headset is momentarily switched back to the radio console. When the telephone is disconnected from the line, the headset reverts back to the console and the console's "select" speaker becomes muted. Requires off-hook contact closure from telephone.

Footswitch -Footswitches are available for controlling selected channel transmit and monitor, allowing hands-free operation.

Microphone/Headset Options

A wide range of microphone and headset options are available. Each type is compatible with the desktop, and rackmount consoles. Options include consolemounted gooseneck microphone, desktop microphone with PTT bar, headset jack with volume control, secondary training headset jack, and PTT handset with cradle. Any console may be equipped with two of the options; one gooseneck or desk microphone, and one headset or handset.

ASIC logic

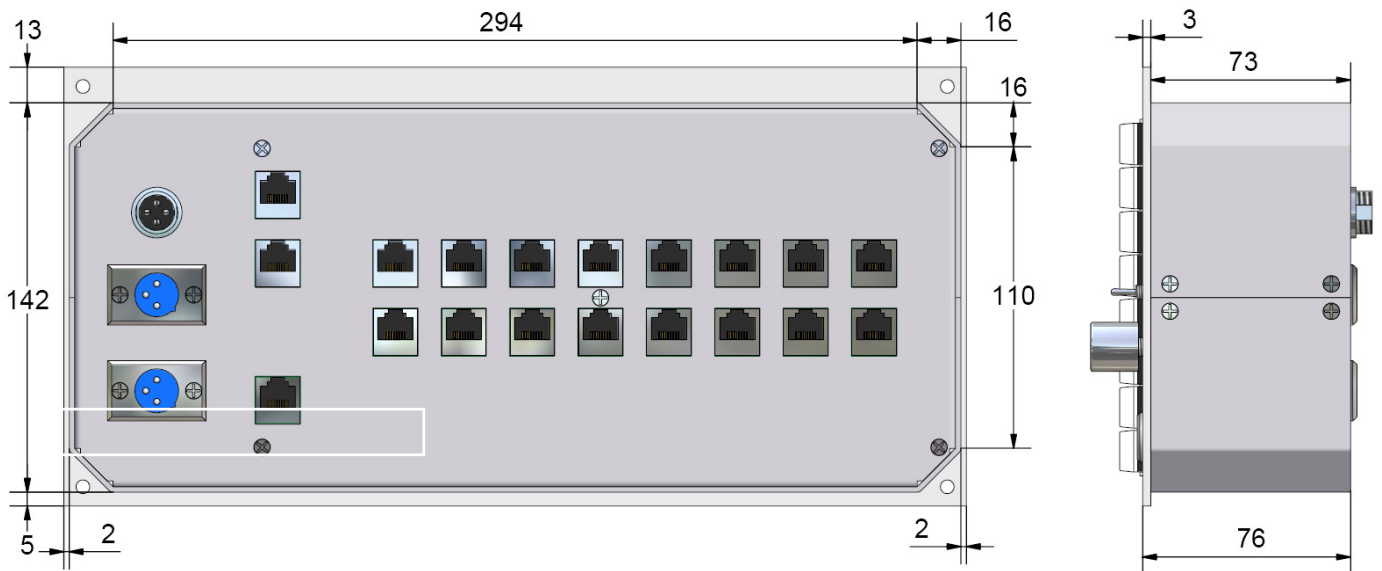
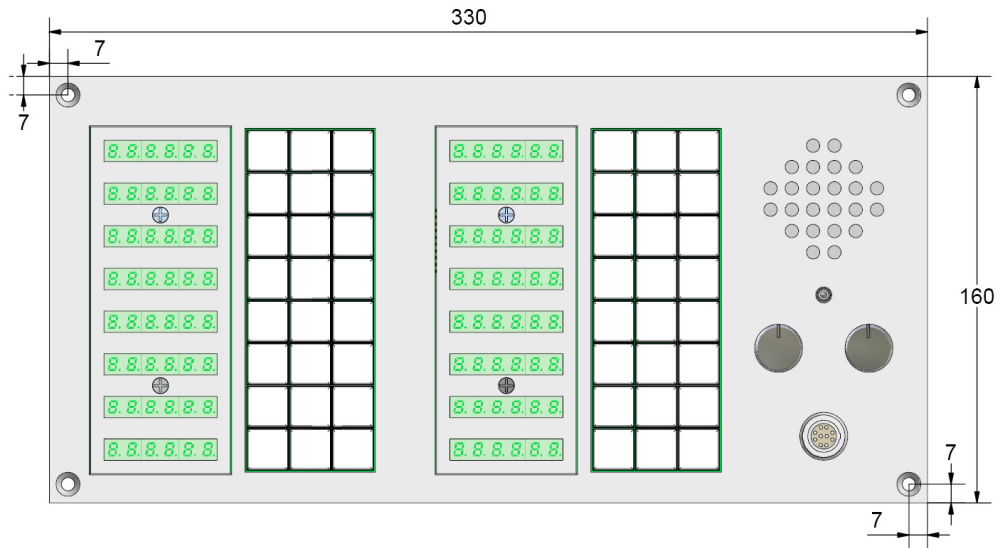
All functionality are designed based on ASIC integration circuitry without use software for decision of higher reliability.

Specification of RDC-16

PHYSICAL Dimension

Size: 330 x 160 x 76 [mm]

Weight: 2,5 kg



SPECIFICATION

TRANSMIT ELECTRICAL SPECIFICATIONS

Tx Audio -10 dBm nominal peak voice, adjustable -40 to +10 dBm
Output Impedance Transmit: 600 ohm balanced
Distortion <2% at full output.
Hum, Cross-Talk all -50 dB at full output
Microphone Input -65 dBm for full output
Aux. Mic Input -20 dBm for full output
Frequency Response -3 to +1dB from 200-3500 Hz
COR: Noise detector, VOX detector or voltage change.
M-Lead Relay closure to ground
Local Control PTT normally open relay contact rated 1.0 A at 24 VAC/DC

RECEIVE ELECTRICAL SPECIFICATIONS

Rx Audio -20 to +10 dBm peak voice into 600 ohms
Rx Sensitivity -20 dBm max. adjustable
Frequency Response -3 to 1 dB from 200-3500
Distortion <2%
Audio Outputs 5 watts into 4 ohms
Mute Programmable from 0 to -20 dB or full mute
"All-mute" time programmable
Input SQ like open collector
E-Lead -12 to -50 VDC active ground
Input DTMF (0-9, *, #, A-D).

RADIO INTERFACE

Number of inputs/outputs:
- 16 channels EM (16 radios)
- all channels can be used in retransmission mode

Expandable to next 19 dispatch consoles series 16 by cascading in common or singular operation

Distance to radio max. 5000 m
Channel Interface Tx/Rx Audio pair (for 2w/4w or 6w/8w)

Configurations End-to-end loop and ground start with overdial, 4-Wire E&M Type 1 or Type 5

E&M Control Tx control via PTT relay, external -48V required

ENVIRONMENTAL

Temperature 0 degC to +65 degC

POWER SUPPLY

Optional power supplies from 12 VDC (fused and filtered) to 24 VDC.
Approximately 50 watts.
When required E&M signalization -48 VDC is required (DC/DC converter is optional).

OTHER ELECTRICAL SPECIFICATIONS

Busy out
Supv control / main-stby
Recorder Out
Local Control PTT normally open relay contact

Busy Channel detected via display indication
Management RS-232 (1200, 2400, 9600 Baud)
Interconsoles Port RS-232 (1200, 2400, 9600 Baud)
Recorder Outputs 1 per console (Tx/Rx audio summation) 0 dBm level, 600 ohm single ended
Approvals FCC part 15, FCC part 68

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