

RADIO CONSOLE RC-321

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.

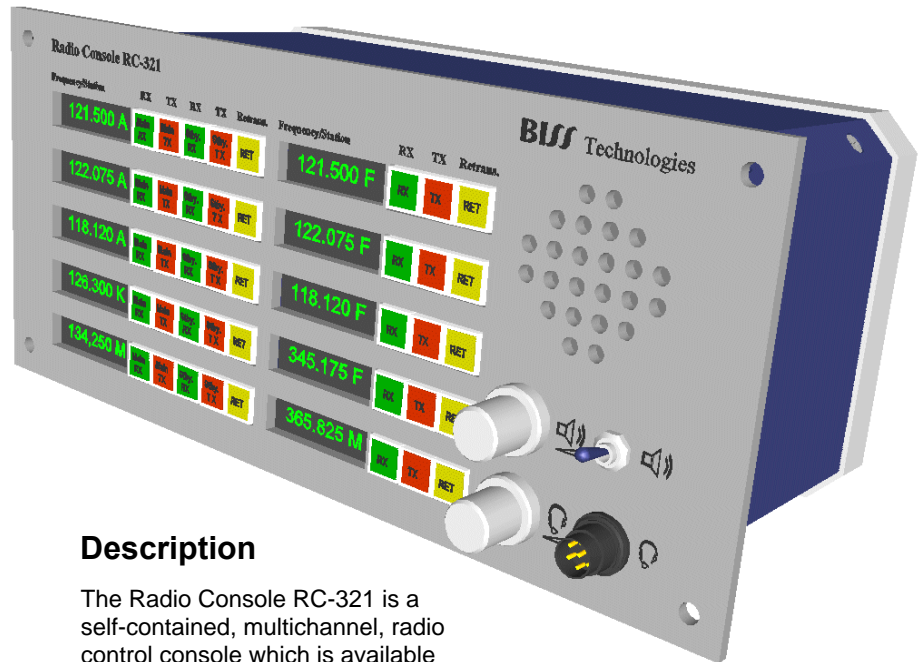
The scope and complexity of the operation, BISS TECHNOLOGIES can configure a system that precisely meets the user's capability and capacity requirements using a few dispatch consoles in common-parallel or singular operation.



Users



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



Description

The Radio Console RC-321 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 15 radio channels.

The Model RC-321 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 RC-321 can be configured with as few as two channels and grow to 15 channels with the addition of modular channel cards.

The radio channels can be controlled and monitored from up to ten 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 5 MAIN/STBY radio channels from a single operator position
- Control of up to 5 MAIN radio channels from a single operator position
- Simple channel expansion using up to 10 consoles in common or singular operation (up to 50 M/S and 50 M channels) 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 (programmable configured)

BISS 
TECHNOLOGIES
Voice communication

INDICATION

Each radio channel can indicate the number of frequency, station or freq/station by configuration via PC console management. Button functions are clearly labeled and color coded on the key's surface to provide easy function association.

Buttons are highlighted LEDs for operations:

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

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

DESIGNED FOR RELIABILITY

Depending upon the application requirements, the Series 300 can be configured for "no single point of failure" or full redundant operation.

For particularly critical applications, the Series 300 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 300 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 remoted.

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 RC-321 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

RC-321 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.

The RC-321 provides a memory buffer containing detailed records of the last 400 calls. Each record includes the call originator, the call destination, system resources used, whether the call was successful and how long it lasted. This information is available via the monitoring system CME. Such information is invaluable not only for troubleshooting, but also to analyze system loading, response and performance. For complete records of all calls, the system serial port can be connected to recording devices such as a PC or a printer.

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

OUTPUT TO RECORDER

RC-321 Radio Consoles has one recorder merged Tx/Rx output with audio summation 0 dBm level, 600 ohm single ended. All of channels are summarized to one output.

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 300, with a volume control for each.

When the Radio Console RC-321 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.

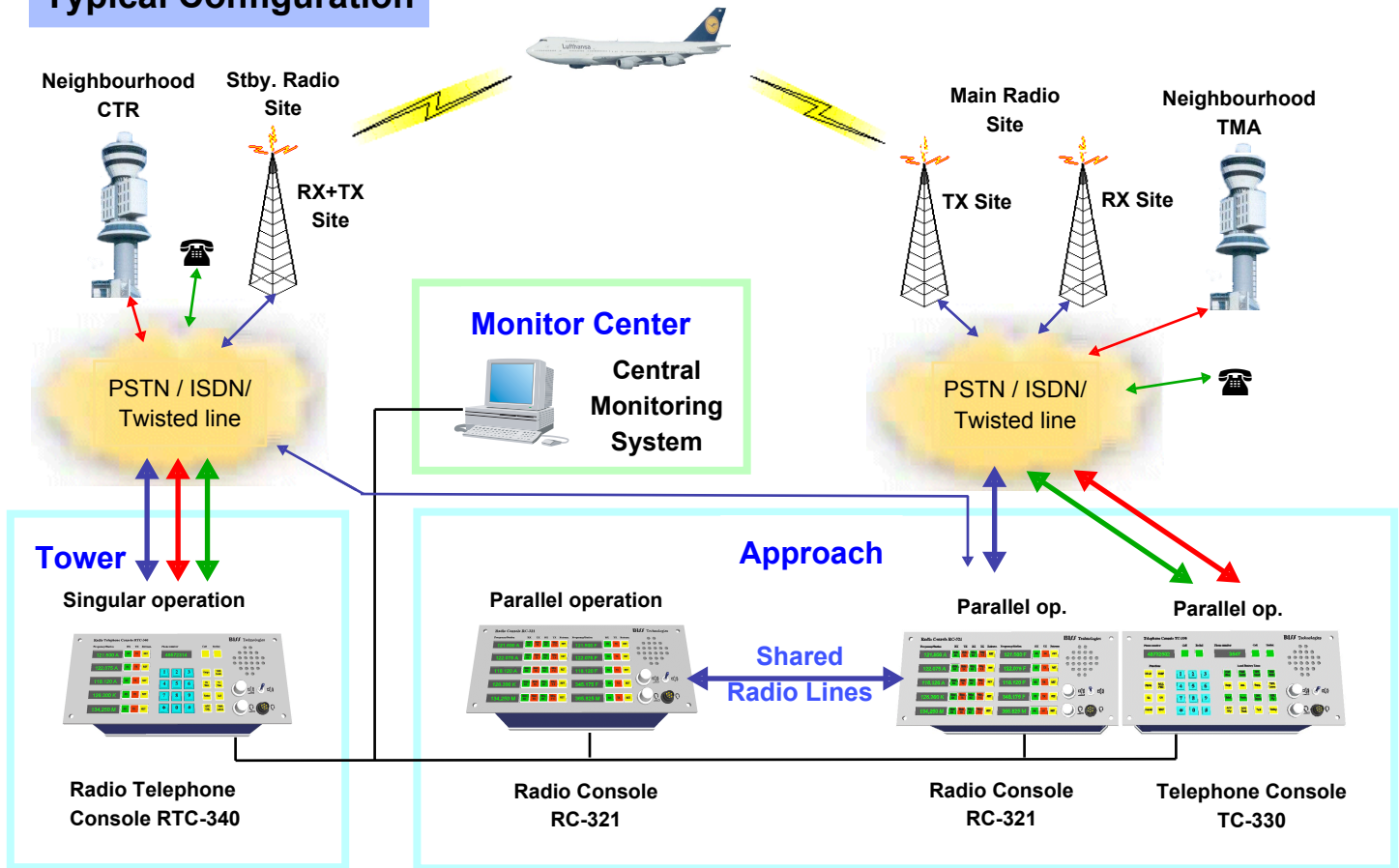
Microphone/Headset Options

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.

SOFTWARE PROGRAMING

A few of parameters and labels are programmable. For connection to Console serie 300 is required IBM compatible personnel computer and standart PC terminal software supplied with each system. Completed data are uploaded to internal console memory.

Typical Configuration



Setting parameters:

- Line level for each TX channel
- Volume for each channel
- DTMF signaling
- 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 programmed and labeled to customer specifications, with a diskette containing the Console Programming System and the factory programming files. CPS runs under WIN95-XP with an RS-232 serial port.

Configurations can also be uploaded from a console to a PC for storage or modification.

EXPANSION AND PARALLEL OPERATION

Model RC-321 Radio Console can be expanded in parallel operation with all of Consoles series 300.

Example:

- 1) 2 x RC-321 + TC-330 + RTC-340 by the picture
- 2) 2 x RC-321 + 2 x TC-330
- 3) 3 x RC-321 + 4 x TC-330 + 3 x RTC-340

Legend:

- Local Battery/MFC lines
- Telephone lines
- Radio lines



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:
- 5 channels in format MAIN/STBY (10 radios)
- 5 channels in format SINGLE (5 radios)

Expandable to next 9 dispatch consoles series 300
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

PHYSICAL SPECIFICATIONS

Size: [cm]
Desktop 13,2 high x 30,0 wide x 12,0 deep
Rackmount 13,2 high x 48,3 w x 12,0 deep
Weight: 2,5 kg

ENVIRONMENTAL

Temperature 0 degC to +65 degC

POWER SUPPLY

Optional power supplies from 12 VDC
(fused and filtered) to 24 VDC.
Approximately 20 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

Global Distribution **BISS Technologies** is continuously widening its distribution on an international basis. Our products are currently being exported to United States, Canada, United Arab Emirates and Europe. If you are located outside France and are interested in purchasing BISS Technologies products or distributing BISS Technologies products in your region, contact:

BISS Technologies International Department on:
Tel. +33 2 4165 5722
Fax. +33 2 4165 5723 or Email. info@bisstechnologies.com

BISS 
TECHNOLOGIES
Voice communication