Dispatch Console   *Voice communication*

TELEPHONE CONSOLE TC-330

SCOPE

BISS TECHNOLOGIES offers communication solutions to a Aeronautical Traffic Control Centers and professional organizations that need a dedicated 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 telephone 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
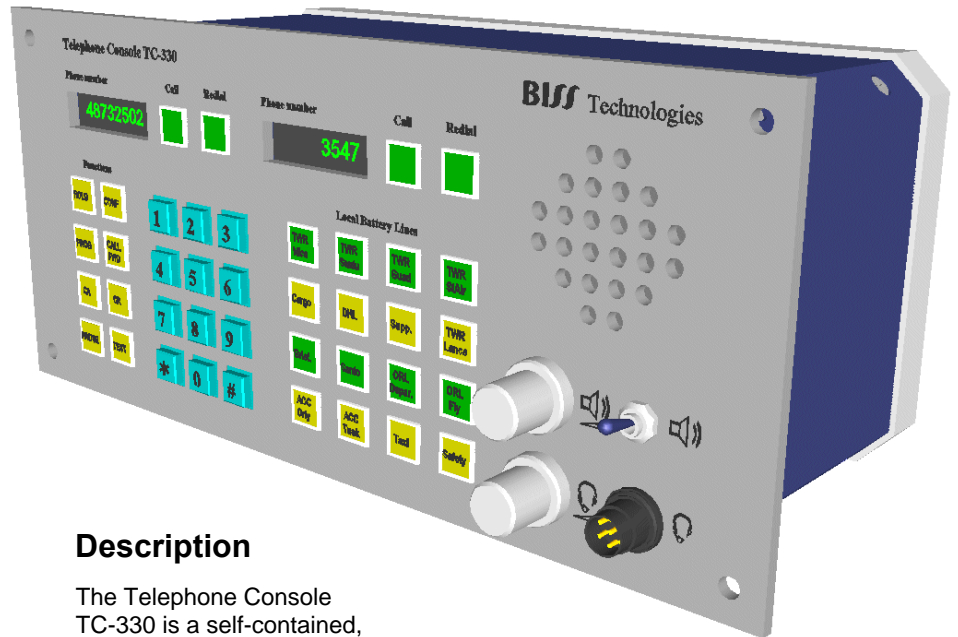
Description

The Telephone Console TC-330 is a self-contained, telephone 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 from 16 Local Battery Lines and two Dial out/Ring in lines.

The Model TC-330 Telephone 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 telephone lines 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 16 local battery lines from a single operator position
- Two Dial out/Ring in line with DTMF or pulse dial programable configured
- Simple channel expansion using up to 10 consoles in common or singular operation (up to 160 LB lines and 20 phone lines
- all functions of the single unit remain available
- Compact, flat design, integration into a desk or 19" rack
- Interfaces with outside phone line or analog PBX port - ideal for phone patches or administrative calls
- Optional Telephone/Radio Headset Interface allows one common headset to operate both radio console and separate telephone set

BISS TECHNOLOGIES
Voice communication

BASIC SYSTEM OPERATION

The Model TC-330 is a cross point switch - analogous to a small PABX or Telephone Central Office - which decodes the caller commands and automatically connects the telephone lines needed to complete the call. The TC-330 is configurable to meet system needs by specifying the desired number of telephone lines, local battery lines and Dispatch Stations.

Telephone lines can be end-to-end, 4-wire E&M or CO Trunk. Each TC-330 typically supports a mixture of telephone lines and local battery lines.

Mobiles calling to the TC-330 can use a variety of signaling formats including DTMF, FFSK, and Selective Tone Signaling (5-tone). Mixed systems are possible with some mobiles using one format and some another.

INDICATION

Both telephone lines can indicate the call number or programable defined users or stations on the displays.

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

Buttons are highlighted LEDs for operations:
- HOLD line
- CONF conference
- PROG configuration
- CALL FWD forward call
- CA user defined
- CR user defined
- DTMF type of dial
- TEST activation IBIT test
- CALL connection to phone line
- REDIAL
- "LB Buttons" connection to LB lines

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.
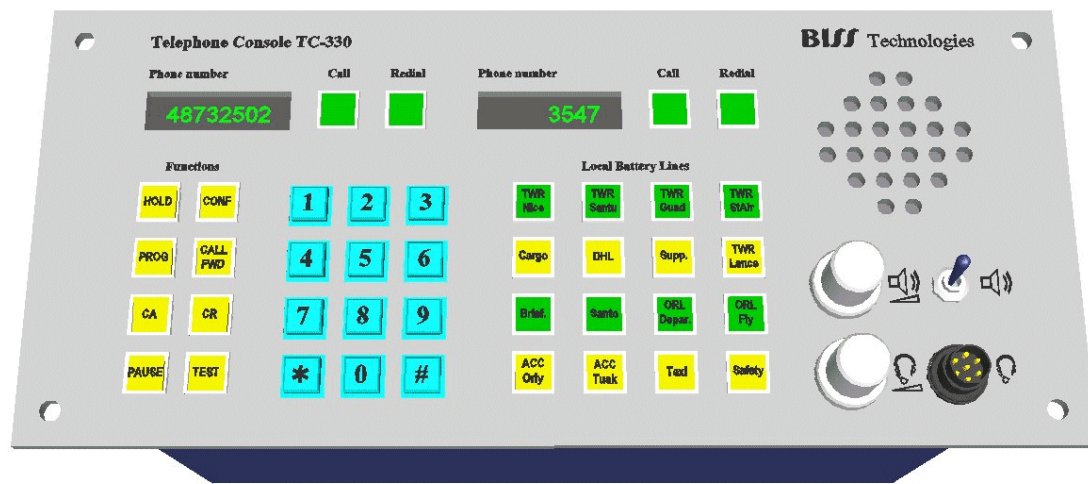
TELEPHONE INTERFACE

The telephone Interface is available with a choice of three configuration interfaces:
- the end-to end configuration provides connection to the PSTN, a PABX, or a CENTREX system,
- the 4-Wire E&M configuration is used for connection to certain PABXs,
- the CO trunk interface with the Ringer Option acts as a Central Office line to a local telephone switch or a directly connected standard elephone set.

The interfaces can be configured by a jumpers on PCB.

Alternatively, the Model TC-330 can be configured as an ordinary telephone instrument and connected via a PABX or the PSTN.

INTER-SWITCH CHANNEL LINE

Internal telephone lines are used to interconnect two or more Model serie 300 into large, multiswitch positions. Internal lines use interface modules equipped with parametrics amplifiers and are interconnected by 2/4/8-wire audio microwave or leased line circuits.

CONSOLE MONITORING

The TC-330 Telephone Console has built-in automatic test for each telephone and local battery line. 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 TC-330 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

The TC-340 Telephone Console has one recorder output merged all lines with audio summation 0 dBm level, 600 ohm single ended. All of lines are sumarized to one output.

SIGNALING FORMATS

All systems equipped for DTMF signaling. Options are available for FFSK and Selective Tone Signaling (5-tone).

MFC R2 signaling for ATC will be available in 2Q/2005.

CALLING FEATURES

- Individual/Selective Calls
- Group Calls
- Call Forwarding
- Call Unforwarding
- Multi-User Conferencing
- Telephone Interconnect
- Overdial
- Redial

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 series 300, with a volume control for each. When controller is calling, 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 programable setted. For onnection 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.
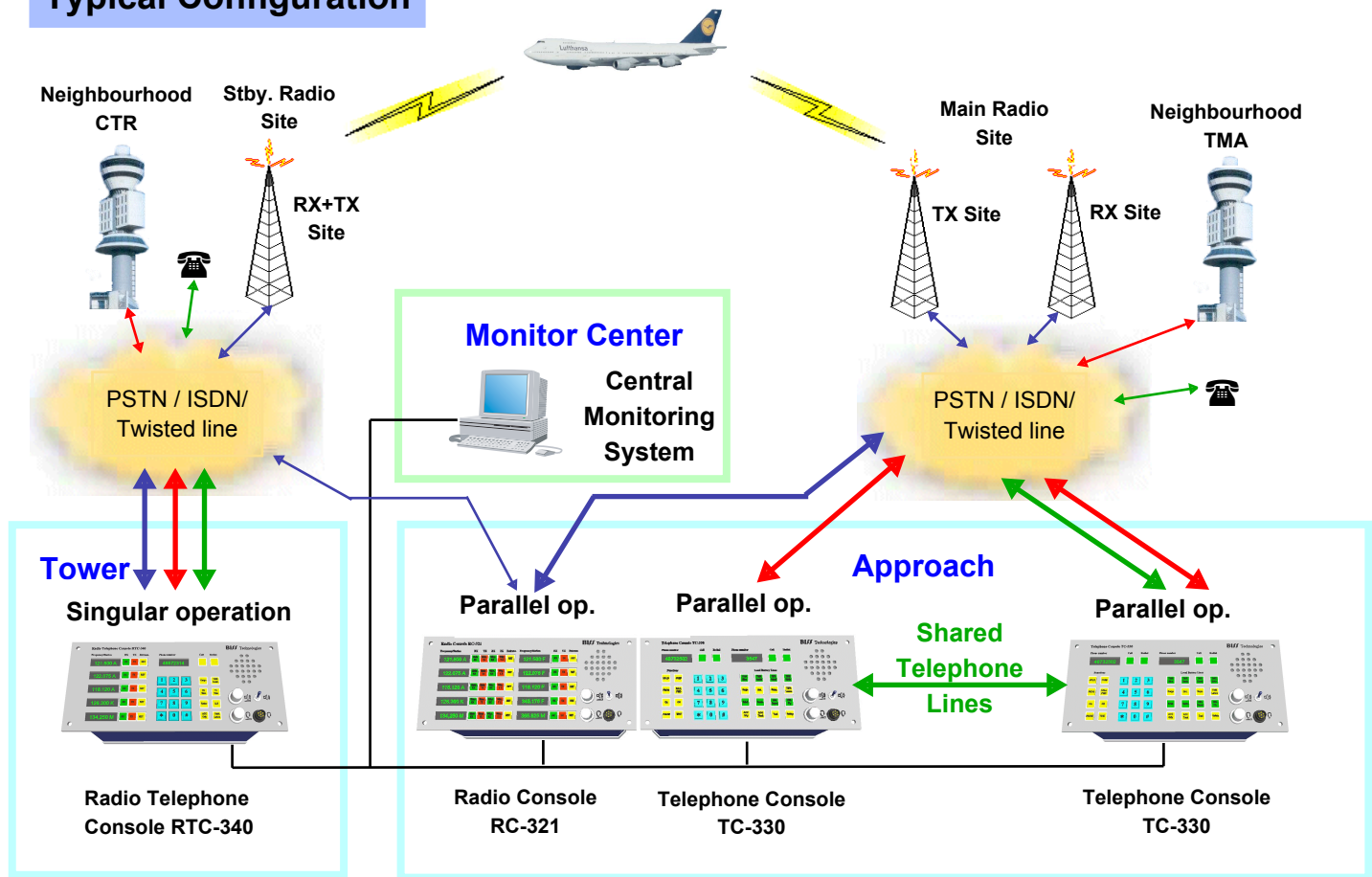
INSTALLATION AND MAINTENANCE

The Model TC-330 is fully self-contained requiring no external electronics. It uses industry standard 25-pair cables and punchdown blocks for interfacing to telephone and leased lines. Standard or lightning-protected connectorized punchdown blocks are available. External options, such as desk-mic and headset jack are also connectorized. All line adjustments, status LEDs and configuration switches are accessible through the rear panel without any disassembly.

Audio throughout the console remains analog and is not digitized. In addition to providing superior audio fidelity, this makes audio troubleshooting easier. The service manual contains full schematics, parts IDs, parts lists and theory of operation. Factory service, spare boards, and spare parts kits are available.

Typical Configuration

Neighbourhood CTR

Stby. Radio Site

RX+TX Site

Main Radio Site

TX Site   **RX Site**

Neighbourhood TMA

PSTN / ISDN/ Twisted line

Monitor Center

Central Monitoring System

PSTN / ISDN/ Twisted line

Tower

Singular operation

Radio Telephone Console RTC-340

Parallel op.   **Parallel op.**   **Approach**   **Parallel op.**

Shared Telephone Lines

Radio Console RC-321

Telephone Console TC-330

Telephone Console TC-330

Setting parameters:
- Line level for each channel
- Volume
- DTMF/FFSK/5tone signaling
- Telephone type interface
- 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 TC-330 Telephone Console can be expanded in parallel operation with all of Consoles type 300 by picture.

Example:
1) 2 x TC-330 + 2 x RC-321
   by the picture

2) 5 x TC-330 + 5 x RC-321

3) 3 x TC-330 + 3 x RC-321 +
   3 x RTC 340

Legend:

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

SPECIFICATION

TELCO ELECTRICAL SPECIFICATIONS

Configurations End-to-end loop and ground start with
overdial, 4-Wire E&M Type 1 or Type 5, CO Trunk compatible with telephone sets
Input DTMF (0-9, *, #, A-D).
FCC Part 68 Approved
Inter Switch Tie lines
Type Four wire audio

Rx Audio -20 to +10 dBm peak voice into 600 ohms

Tx Audio -10 dBm nominal peak voice, adjustable -40 to -6 dBm into 600 ohms

E-Lead -12 to -50 VDC active ground
M-Lead Relay closure to ground

Expandable to next 9 dispatch consoles type 300 by cascading in common or singular operation

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

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 0 dBm level, 600 ohm single ended
Approvals FCC part 15, FCC part 68

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