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RC855 IBM3780 BSC Emulator
Operating Guide

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Abstract:

This manual describes the operation of the RC855 IBM3780 BSC Emulator: keyboard functions, operating procedures, emulator messages. Further it contains brief descriptions concerning configuration file, command files, etc.

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1. INTRODUCTION 1.

The RC855 IBM 3780 BSC Emulator software package is available for use with the RC855 Work Station.

Operating the work station from a hardware point of view is covered by the RC855 Operating Guide; ref. [1].

Operation of the RC855 with CP/M is introduced by the RC855 Work Station, User's Guide; ref. [2].

Loading of the emulator is explained in the RC855 IBM 3780 BSC Emulator, Installation Guide; ref. [3].

The present guide covers the general aspects when using the emulator, additional technical information is found in the emulator reference manual; ref. [4].

1.1 Configuration 1.1

The configuration of the system for emulator operation is performed on three levels; cluster concept, setting of configuration parameters in the work station and creation of a configuration file to control emulator functions.

1.1.1 Cluster Concept 1.1.1

Up to eight RC855 Work Stations can be interconnected using the RC-CIRCUIT, a simple twisted wire pair, to form a clustered configuration of work stations. One of the work stations must be selected as the primary, the others are secondaries. This selection is part of the emulator loading as described in ref. [3].

The RC855 IBM 3780 BSC Emulator operates with a point to point communication line (permanently leased or temporarily switched dial-up). The primary is connected to the communication line (most often by modem) and the secondaries are connected to the primary by the RC-CIRCUIT.

Data can be transmitted from both the primary and the secondaries. The primary can also receive data for printing or diskette storage.

The primary must run the emulator as long as any of the secondaries is running the emulator. The secondaries, however, may run alternate applications, provided the alternate program does not use the RC-CIRCUIT. Further information about the possibilities in system configuration is found in the RC855 Configuration Guide; ref. [5].

1.1.2 RC855 Configuration Parameters 1.1.2

The functioning of the RC855 Work Station is affected by a number of configuration parameters. These parameters are stored in a non-volatile memory (NVM) which means they are kept also during power off. See section 5.1.

1.1.3 Configuration File 1.1.3

A number of parameters stored in a diskette file, the configuration file, controls the execution of the emulator. A set of initial values can be created using the CP/M editor. The parameter values can also be changed during run time. If no initial values are assigned, the emulator operations are determined by a set of default values. The configuration file is read as part of the emulator start procedure. See chapter 3 and section 5.3.

1.2 Emulator Operation 1.2

The RC855 IBM 3780 BSC Emulator is designed to perform the following main functions:

- connection and disconnection of the communication line,
- transmission of commands from the keyboard (primary only) and data files from diskette (CP/M files),
- receival of data for printing or diskette storage (CP/M files) (primary only).

After loading the emulator, the operator is guided through the various procedures by messages displayed on the screen. Thus operation of the emulator is an easy and straightforward matter.

Operations can be controlled step-by-step from the keyboard, or they can be automated to any desirable extent, ultimately to provide automatic dial-up answering.

Functions from keyboard are described in chapter 2 as well as in chapter 3 where they appear as part of the procedures.

Automated transmission is controlled by command files. Rather than typing the names of the individual files, these are written into a separate file, the command file, which can then be called by one name. The command file, moreover, enables specific commands to form part of the transmission sequence. It can therefore be used to substitute operator selected actions. A number of command files - AUTO1.TXT to AUTO9.TXT - has a specific key - PF1 to PF9 - assigned which means they can be called simply by pressing the assigned key.

File names and command files are further described in sections 5.5 and 5.6.

1.3 Emulator Messages 1.3

Although most of the messages are self-explaining, for a more detailed description see chapter 4.

Also error messages may occur. They are explained in 4.2.

2. KEYBOARD FUNCTION 2.

In IBM 3780 BSC emulation operations the RC855 keyboard functions according to the following description. A knowledge of the keyboard functions as described in the RC855 Operating Guide, ref. [1], is assumed.

2.1 General Features 2.1

All general features are available.

LOCK - the use of the LOCK key is affected by the KBL parameter (one of the RC855 configuration parameters). By setting the appropriate parameter value, the keyboard works permanently in the alpha lock mode. See 5.1.

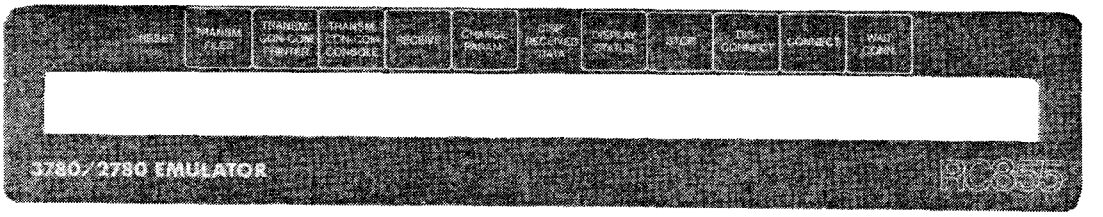
2.2 Alphanumeric Keys 2.2

The alphanumeric keys are used for typing of input (filenames, commands, etc.). They are operated as known from ordinary typewriting. While operating the emulator, all input data must be given in upper case characters so it is advisable to use the alpha lock mode permanently.

2.3 Function Keys 2.3

The emulator functions can be controlled by means of the keys described below. Only those keys are described which have a specific relation to the emulator operations.

A function guide is included with the emulator package; placed over the top row of keys on the keyboard, it indicates by text (abbreviated) which function a particular key performs.



The secondary terminals can use a subset of the functions only, because they are transmitting devices only. It is stated in the description, if a secondary terminal does not use the function.

CLEAR - enables a reset of the system. If the system diskette is the CP/M diskette, it is a cold boot of the CP/M system.

Selectable on primary in disconnected mode, on secondary in idle mode.

PA1 - enables transmission of 1-32 files from CP/M diskette. Filename(s) to be specified directly or by use of a command file. See also 3.1.1.

Selectable in disconnected, idle or waiting mode.

PA2 (not secondary) - enables transmission of one console command to the host computer. Reply on print device. See also 3.1.2.

Selectable in disconnected, idle, waiting or receiving mode.

PA3 (not secondary) - as PA2, but reply on screen.

PA4 (not secondary) - enables receival of data. The function is automatically selected as part of some procedure. See also 3.1.3 and throughout 3.1.

Selectable in disconnected or idle mode.

PA5 - enables the configuration file parameters to be changed. See also 5.3.2.

Selectable in disconnected or idle mode.

USM (not secondary) - received data are displayed on the screen, if the USM key is engaged. To stop the displaying, press once more.

Always selectable. No influence on the received/transmitted data.

PF1, PF2, ..., PF9 - automatic transmit functions which execute the assigned command files AUTO1.TXT, AUTO2.TXT, ..., AUTO9.TXT. See also 3.1.1.1.

Selectable in disconnected, idle or waiting mode.

PF10 - enables display of the current state of the terminal and of the configuration file parameters.

Always selectable. In principle no change of terminal status; however, note the following:

primary: the primary terminal carry out certain statistical countings concerning the communication line (see 5.7). These statistics are displayed when pressing PF10 and the counters are reset.

secondary: if the state of the secondary terminal is idle, then the state of the communication line is displayed, which can be disconnected, idle or busy. This may force the secondary terminal into disconnect mode and the text "waiting for primary" then appears. The secondary automatically keeps trying to establish the connection.

PF11 - enables an immediate interrupt of activities. If the line was not yet connected, the terminal enters the disconnected state. If the line was connected, the terminal enters the idle state (operations are aborted by sending end-of-transmission).

Always selectable.

PF12 (not secondary) - enables an immediate interrupt of activities by disconnection the line and removing the modem signals. Terminal enters the disconnected state.

Always selectable.

PF13 - enables connection of the line. On connection the terminal enters the idle state or the selected transmit/receive state.

Selectable in disconnected mode.

PF14 (not secondary) - enables an automatic answering mode of operations initiated from the host computer. See also 3.1.4.

Selectable if the line is not yet connected.

2.4 Miscellaneous

The emulator is a tool for batch transfers of data files created otherwise. Besides the functions keys, only two other "functional" keys are used, namely:

<- - moves the cursor backwards.
By re-typing errors can be corrected.

<↵ - terminates an operator typed sequence by submitting the input for processing.

The key is often referred to as 'return key'.

3. EMULATOR OPERATION 3.

Loading the emulator is described in ref. [3]. By loading the specific emulator part (file), it is determined whether the primary or secondary performances are taken into use.

When loading the emulator, one additional parameter can be given besides the emulator file name. This should be the name of a command file:

formal: <emulator file name><space><command file name>
example: P3780 MYJOB

This way emulator operations start directly without further operator actions. Command files are described in 5.6 and file names in general in 5.5.

As part of the start procedure also the configuration file and (on primary and if existing) the signon file will be read and acted upon. These files are described in 5.3 and 5.4, respectively.

Available functions and the procedures involved are described separately for primary (including stand-alone) and secondary.

Beware: all typing with upper case characters!

3.1 Primary 3.1

When the emulator is loaded, the following identification text is displayed:

RC855 IBM 3780 TERMINAL

The configuration file is read and the parameter values are displayed.

Depending on the presence/absence of a signon file and command file name (given as parameter when loading), the following happens:

File(s) present (drive A)	Operation
signon	- the file is transmitted and the terminal enters the waiting-for-receival state. One of the functions selectable in that state must then be selected by the operator.
signon and command	- the signon file is transmitted and operations continue according to the command file.
command	- operations are performed according to the command file.
none	- the terminal enters the disconnected state (see below).

When the terminal enters the disconnected state, the following text is displayed:

```
Terminal is disconnected
SELECT FUNCTION
```

In this state one of the functions (transmit data, receive data etc.) mentioned in the following subsections must be selected by pressing the associated function key. All operations are guided by informative messages.

3.1.1 Transmission of Data Files/Command File 3.1.1

Function key: PA1.

The display is cleared and the following text appears:

PA1 Transmit selected

Max. 32 file names <UNIT>:<FILENAME> RETURN can be selected. Press an extra RETURN after the last name to start the transmission. To stop and return to idle state press PF11.

TYPE THE FILENAMES:

The file names can either be the actual ones, or it can be the name of one command file (see also 3.1.1.1). It is not allowed to mix file names and names of command files.

The transmission of each file is guided by messages on the display (one message at the beginning, two at the end) as follows:

Terminal is transmitting file <file name>

End of file <file name>
Number of records = NNNNN

Having completed the transmission sequence, the terminal enters the receive state (as if PA4 was pressed).

Notes:

1) 1-32 files from CP/M diskette can be transmitted.

2) The use of a command file simplifies operation and allows a number of commands to be incorporated in the transmission sequence.

3) The RETURN key on the RC855 Work Station is denoted <┘.

4) NNNNN is the number of records transmitted from file <file name>. If some records on the diskette exceed 80 bytes, they are counted as the number of records they are split into.

3.1.1.1 Automatic Transmit Function 3.1.1.1

Function keys: PF1, PF2, ..., PF9.

Rather than typing the name of a command file, it is possible to use one of these function keys to each of which a command file with a fixed name is assigned. The corresponding names of the command files are: AUTO1.TXT, AUTO2.TXT, ..., AUTO9.TXT. The contents of these AUTO command files must be created as for usual command files.

Note:

1) When using an AUTO file, it must be on drive A.

3.1.2 Transmission of Console Command 3.1.2

Function key: PA2 or PA3.

The display is cleared and the following text appears:

```
PA2/PA3 Transmit console command selected
TYPE COMMAND:
```

It is then possible to type one command line from the keyboard (max. 80 characters terminated by <-┘). To return to idle mode without sending a command, press PF11.

When the transmission is finished, the terminal enters receive mode (as if PA4 was pressed) and the receival takes place according to which of the keys that was selected:

PA2: receival on print device as normally.
PA3: receival on the display only.

This function may also be activated while receiving data; see 3.1.3.1.

3.1.3 Receival of Data 3.1.3

Function key: PA4.

This function makes it possible to receive data for printing or diskette storage. The function is automatically selected after a transmission of data files (PA1 or PF1-PF9) or console commands (PA2 or PA3, the latter, however, only for receival on display).

Using the USM key, it is always possible to have the received data displayed on the screen. This does not influence the data transfer.

The terminal remains in receive mode until another function is selected or the line is disconnected from the remote site or after a timeout (if using the configuration file parameter WAIT-TIME; see 5.3.1).

The receival of data may be interrupted by the operator as outlined in 3.1.3.1.

Note:

1) The terminal may ask the question:

SELECT PRINT-DEV:
or
SELECT PUNCH-DEV:

In that case type the wanted file name or 'LST:' if the file is for printout. If for printout, the file is always assumed to be continous (/C - see 5.5).

3.1.3.1 Interrupt of Receival of Data

3.1.3.1

Function keys: PA2 or PA3.

The receival of data may be interrupted by the operator in order to allow for an intermediate sequence of sending a command/receiving an answer (as outlined in 3.1.2). The receival of data as begun prior to the interruption then continues. Depending on the host system, the transmission will be resumed either from the beginning or from a position some pages before interruption.

3.1.4 Wait Connection

3.1.4

Function key: PF14.

This function enables the terminal automatically to answer a call from the host computer (e.g. during night-time). The automated procedure can include transmission and receival or receival only.

A) Receival only:
Press the PF14 key only.

A call from the host computer will cause the connection to be established. The terminal enters the receive mode (as if PA4 was pressed) and remains in that mode until disconnected from the remote site or after a timeout (if using the configuration file parameter WAIT-TIME; see 5.3.1).

B) Transmission and receival:
Press the PF14 key and subsequently one of the keys PA1 or PF1-PF9.

The connection is established as in A), but the terminal now begins to transmit files in accordance with the function selected (PA1 or PF1-PF9). After the transmission the terminal enters the receive mode and continues as in A).

3.1.5 Miscellaneous 3.1.5

The function keys PF10, PF11, PF12 and PF13 are used as outlined in 2.4. By these functions the operator gains direct control of operations and should be aware of the fact that immediate interrupts for instance may cause a loss of data.

The operator can display the directory of the diskettes using the DIR command; see 5.2.

To terminate emulator operations use the CLEAR key.

3.2 Secondary 3.2

When the emulator is loaded, the following identification text is displayed:

```
RC855 IBM 3780 TERMINAL
SECONDARY STATION
```

The configuration file is displayed and the parameter value is displayed.

If the name of a command file was given as parameter when loading the emulator, the command file is executed. Otherwise the following text appears:

```
Terminal is idle
SELECT FUNCTION
```

In this state the transmit function can be selected (PA1 or PF1-PF9). The functions work as described for primary (see 3.1.1) except that it is not the secondary, but the primary which enters the receive mode at the end of transmission.

All other functions which are applicable with the secondaries can be selected according to the description in 2.3 (see also 3.1.5).

4. EMULATOR MESSAGES 4.

4.1 Informative Messages 4.1

The informative messages indicates to the operator what the terminal is doing or they indicate that some illegal commands were given and so on. The operator need not take any action on informative messages.

The informative messages are self explaining and only those which need a further explanation are listed in the following for primary and secondary, respectively.

4.1.1 Primary 4.1.1

Abort received

The remote site has aborted the current transmission. The terminal automatically enters the idle state.

Contention

The terminal and the remote site are both bidding for the line. (To receive the data select the functions PF11 and PA4).

Dataset not ready

The modem signal dataset ready is off. The terminal automatically enters the disconnect state.

Illegal id received

The remote site is using another terminal identification than the one specified in the parameter receive-id. To allow the remote site to transmit, the receive-id check could be removed (temporarily) by setting the parameter receive-id to nothing; see 5.3.

Line disconnected remote

The remote site has disconnected the line. The terminal automatically enters the disconnect state.

Rvi received

The remote site has sent an reverse interrupt (rvi) while the terminal is transmitting data. This means that the remote site has something to send. The terminal continues to transmit. The operator can stop the transmission with PF11 and receive the data from the remote site with PA4.

Terminal is bidding for the line

The terminal is requesting the line. The terminal will repeat the request until the remote site accepts or the operator interrupts with PF11 (stop) or PF12 (disconnect).

4.1.2 Secondary

4.1.2

Primary disconnected

The connection to the primary has been disconnected due to an error on the RC-CIRCUIT while a transmission was going on. The transmission is interrupted and the terminal is automatically trying to get connection to the primary.

Terminal is bidding for the line

The secondary is requesting the primary for permission to use the communication line for transmission of data. The secondary will repeat the request until the primary gives permission or the operator interrupts with PF11.

Transmission stopped by primary

The current transmission has been stopped by the primary either by the operator or due to an event on the communication line (dataset not ready, abort, remote disconnect etc.).

Transmission stopped after error

The current transmission has been stopped due to an error on the connection to the primary, or because the operator has not reacted to an error message concerning the diskette drive within 5 minutes.

Terminal is waiting for the primary

The connection to the primary has been disconnected, and the terminal tries to reestablish the connection.

4.2 Error Messages 4.2

Error messages indicate to the operator that an error has occurred which requires corrective action. All error messages are listed in the following with respect to printer, diskette and system, respectively.

4.2.1 Printer 4.2.1

Printer is offline

The printer is off-line (off-line, no paper, no power etc.). Repair the erroneous condition and set the printer on-line. The printing wil automatically continue.

This message relates to a primary terminal only.

4.2.2 Diskette 4.2.2

All these messages are terminated by: "Select PF11 to stop anything else means continue". Continue means repeat (try again) except if it is a file which does not exist, then it means skip this file and continue with the next.

Diskette crc error
Diskette full
Diskette off line
Diskette write lock

} self explaining

Diskette hard error

Hard error on the diskette, most likely an error in address mark (the diskette needs reformatting).

Diskette unreadable

The diskette cannot be read (probably wrong type of diskette).

File does not exist <file name>

The file <file name> does not exist on the mounted diskette.

4.2.3 System

4.2.3

Data format error

Normally this message should not occur. If it does occur, save information about what the terminal was doing. The terminal automatically enters the idle state.

5. SUPPLEMENTARY INFORMATION 5.

Most of the information in this chapter consists of brief descriptions of subjects which are described elsewhere in detail; references are given (if relevant).

5.1 RC855 Configuration Parameters 5.1

This is a list of the RC855 configuration parameters which are used by the IBM 3780 emulator.

Primary:
PLS Printer line speed
CF Printer character format
CS Character set
CP Cursor presentation
KBL Keyboard lock

Secondary:
SA Secondary address
CP Cursor presentation
KBL Keyboard lock

It is advisable to set KBL to 1 (keyboard remains in alpha lock) as all commands to the IBM, changing parameters and file names for transmission must be given with upper case characters.

Parameter setting is accomplished by means of an utility program of the CP/M software package; see ref. [2].

5.2 Display of Diskette Directory 5.2

The diskette directory of the selected diskette drive is displayed when giving the following command:

DIR <drive>:<return>

<drive>: is A: or B: (default is A)
<return> denotes pressing the <┘ key.

The command can be given whenever the terminal is disconnected, idle or waiting for receival. It does not change the terminal state.

5.3 Configuration File 5.3

This file contains a number of parameters which controls the execution of the emulator. The file applies to both primary and secondary operations, but with respect to the secondary it contains only one parameter. The parameters are outlined in 5.3.1.

It is a CP/M file with the name C3780.TXT and it can be created and written with the CP/M editor (note: the alpha lock should be engaged while writing the file).

The file is automatically read after loading of the emulator, provided it is contained on the CP/M diskette mounted in drive A. The initial values of the parameters are then displayed. If no initial values have been given (or the file does not exist), the terminal uses a set of default values. See 5.3.1.

The parameter values except the two identification values are displayed when loading the emulator or pressing the PF10 key. They can be changed during run time; see 5.3.2. The identification values can be specified only when creating the configuration file; they are not displayable nor changeable during run time.

Additionally to the configuration parameters it is possible to specify changes in the terminal conversion table, i.e. how to convert an EBCDIC character into an ASCII character and vice versa. These changes can be specified only when creating the configuration file; they are not displayable nor changeable during run time.

See also ref. [4].

Note: On a secondary terminal, the parameter TRANSPARENCY is the only one used.

PRINT-DEV
PUNCH-DEV

Values: LST: or CP/M file name; default is LST: (i.e. line printer).

Meaning: Specifies names of the devices on which print data and punch data received should be written.

PRINT-SIZE
PUNCH-SIZE

Values: 0-255; default is 0.

Meaning: Specifies fixed sizes by which all print records and punch records received should be written (only if the PRINT-DEV and PUNCH-DEV are CP/M files). The size is the total size of the record (data + termination characters).

0 means that the records are written as they are received.

WAIT-TIME

Values: 0-255 or 0S-255S; default is 0.

Meaning: Specifies the time to wait for data to arrive when the terminal has entered the state of waiting-for-receival. If nothing has arrived within the time specified, the AUTO0.TXT command file is executed (which could be sign-off and disconnection).

0 or 0S means infinite wait for data (AUTO0.TXT never executed).

1-255 means wait for 1-255 minutes.
1S-255S means wait for 1-255 seconds.

TRANSPARENCY

Values: ON or OFF; default is OFF.

Meaning: Specifies whether data transmitted from the terminal is transparent or not.

ON means transmitted as transparent.
OFF means transmitted as non-transparent.

Regardless of this parameter setting, it is always possible to receive (on primary) both transparent and non-transparent data.

[RECEIVE-ID]
[TRANSMIT-ID] [] means not displayed

Values: No characters or 1-15 characters; default is no characters.

Meaning: Specifies the terminal identification used when receiving and transmitting.

Giving no characters means no identification check on receival and no identification sent prior to transmitting.

Giving 1-15 characters means that those characters are used in id-checking. Giving more than 15 characters, the excessive ones are skipped.

If a RECEIVE-ID is specified it is checked that the remote site sending data to this terminal is using the correct identification, otherwise it will be rejected.

If a TRANSMIT-ID is specified, the terminal will use this when transmitting.

[CONVERSION] [] means not displayed

The specification of changes in the terminal conversion tables are given as a number of records after the last parameter assignment, when creating the configuration file. See ref. [4].

Example of a configuration file (and the default values):

Parameter	Values	Default values
PRINT-DEV	= PRINT.TXT	LST:
PUNCH-DEV	= B:PUNCH.TXT	LST:
PRINT-SIZE	= 0	0
PUNCH-SIZE	= 0	0
WAIT-TIME	= 3	0
TRANSPARENCY	= OFF	OFF
[RECEIVE-ID	=]	no id
[TRANSMIT-ID	= RC01]	no id
[CONVERSION	=]	no conversion
[65,194]		
[66,193]		
[42,108]		
[42,92]		

[] indicates non-displayed items.

5.3.2 Changing the Parameter Values 5.3.2

Function keys: PA5 (call to change) and PF11 (terminate).

This function makes it possible to change those parameter values which are displayable during run time. After selection of PA5 the display is cleared and the parameters and their current values are displayed:

1 <parameter name>=<current value>
2 <parameter name>=<current value>
:
n <parameter name>=<current value>

TYPE PARAMETER NAME = NEWVALUE OR PARAMETER NUMBER = NEWVALUE

Beware: all typing with upper case characters.

To change a parameter value either type the parameter name, or the parameter number (1, 2, ..., n), immediately followed by the = sign and the new parameter value (no spaces are allowed before and after the = sign). Terminate by pressing <┘ (return key). All parameters are displayed anew and the newly changed parameter value is displayed as current value. This way the values can be changed one by one.

The possible parameter values are discussed in 5.3.1.

To terminate the procedure, press PF11.

On a secondary terminal, only one parameter exists (the TRANSPARENCY parameter).

5.4 Signon File 5.4

This file contains the signon record according to the requirements of the host computer. It is a CP/M file with the name S3780.TXT and it can be created and written with the CP/M editor (note: the alpha lock should be engaged while writing the file).

This file is automatically transmitted after loading the emulator, provided it exists on the CP/M diskette mounted in drive A.

See also ref. [4] and the documentation covering the requirements of the host computer.

5.5 File Names 5.5

File names must comply to the following format:

<drive>:<name>/<special>

No spaces are allowed inbetween <drive>:, <name> and /<special>.
Beware: all characters in upper case.

<drive>:

Values: A: or B:; default is A:.
Meaning: Specifies the diskette drive on which the file is present.

<name>

Values: 1-12 characters (default value makes no sence).
Meaning: Specifies the actual name of the file. If more than 12 characters are given, the excessive ones are skipped.

/<special>

Values: See below.
Meaning: Specifies special actions for the file; distinction is made between files to transmit from and files to receive in.

Files to transmit from:

/NT
/T

Regardless of the TRANSPARENCY parameter being ON or OFF (see 5.3.1), it can be specified to send the file in a specific transparency, namely: always non-transparent (/NT) or always transparent (/T).

This way transparent and non-transparent data can be mixed in one transmission, e.g. JCL cards in non-transparent and binary data in transparent.

/C

Specifies that this is the name of a command file; see 5.6.

Files to receive in:

/C

Specifies that it is possible to continue receiving in the file after an EOT (end-of-transmission), i.e. several transmissions from the remote site can be received in the same file. If not specified (no /C (= default value)), only one transmission is received per file.

Examples of file names:

TRANS.TXT	B:TRANS.TXT
A:TRANS.TXT	TR01.COM/C
B:X01.COM	A:TR01.COM/C
TRANS.TXT/NT	B:TR02.TXT/C

5.6 Command File 5.6

The command file contains the names of files to be transmitted and some special commands to control the transmission. The use of command files enables a transmission to be carried out by specifying one command file name rather than a number of file names; see 3.1.1. The file at most can include 32 items (names of files and special commands), none of the file names included can have the /C specification (see 5.5) as this would mean a command file in a command file, which is not allowed.

The command file is a CP/M file which can be created and written with the CP/M editor (note: all typing with upper case characters). The file names must comply to the format described in 5.5, also the name of the command file itself.

See ref. [4] for details.

5.7 Transmission Line Statistics 5.7

On primary terminals the emulator automatically counts a number of events on the BSC communication line as long as the emulator is active. These statistical data are displayed as follows when

pressing the PF10 key:

TRANSMISSION LINE STATISTICS:

	RECEIVED	TRANSMITTED
TEXT-BLOCKS	xxxx	xxxx
NAKS	xxxx	xxxx
ENQS	xxxx	xxxx
TTDS	xxxx	xxxx
WACKS	xxxx	xxxx

The number 'xxxx' is displayed in decimal value and represents the number of occurrences since the last display, i.e. the counters are reset to zero when displayed by pressing the PF10 key. To obtain accumulated statistical data all displayed sets of counter values must be accumulated.

A. REFERENCES A.

[1] RCSL No 42-i1686:
RC855 Operating Guide
Henning Christensen, April 1982
Abstract: Operating Guide for the RC855 Terminal/Work Station. Describes: connections and operator controls; keyboard features; start-up procedures. Covers the general aspects and is ment to be used in conjunction with the application documentation.

[2] RCSL No 42-i1687:
RC855 Work Station, User's Guide
Pierce C. Hazelton, June 1982

[3] RCSL No 42-i1697:
RC855 IBM 3780 BSC Emulator, Installation Guide
Torben G. Rasmussen, May 1982
Abstract: This manual describes the installation of the RC855 IBM 3780 BSC Emulator under the RC855 CP/M operating system.

[4] RCSL No 42-i1699:
RC855 IBM 3780 BSC Emulator, Reference Manual
Torben G. Rasmussen, Henning Christensen, July 1982
Abstract: This manual describes all the RC855 IBM 3780 BSC emulator characteristics, especially those formal criteria which do not necessarily need to be known in order to operate the emulator (i.e. file formats, record handling, communication line characteristics, command file, parameters etc.).

[5] RCSL No 42-i1984:
RC855 Configuration Guide
Torsten Schmidt, Henning Christensen, March 1982
Abstract: This manual gives some outlines in the configuration possibilities of the RC855 Terminal System.

RETURN LETTER

Title: RC855 IBM3780 BSC Emulator Operating Guide

RCSL No.: 42-i1698

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