



AN-15 (Line Printer and Easy Print Modes)

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AVAILABLE CONFIGURATION COMMANDS

The Easy Print protocol is used not only for control of the printer and printing, but also configuration of the printer. Configuration commands set parameters that are used during the operation of the printer such as baud rate and specifics of the wireless communications network to be used to print. These values are all written into flash memory so they are retained whenever the printer goes to sleep and even when batteries are removed.

You do not need to know the details behind any of the three letter commands unless you want to change these parameters from your application. The O'Neil MFLASH Windows Configuration Program and the O'Neil OPDI Suite of programs provide an easier user interface for changing these parameters so you do not need to know the details.

There are two letter and three letter configuration commands. One or several two letter commands (e.g. {CB:03} to change baud to 9600) can be sent to the printer but are not written to flash and do not take effect until a {COMMIT} command is sent to the printer. When the printer receives the COMMIT command, it writes the values received to flash and restarts the printer. Each two letter command is used to change one parameter.

Most of the three letter commands permit several parameters to be changed at once, although some accept only data. If several parameters can be changed with one command, one or two letters indicating the parameter are separated from the data for that parameter by a colon ":". Parameter/data pairs are separated from each other with a semicolon. When the printer receives a three letter command, it will write the values to flash and restart the printer. To prevent the printer from resetting after each three letter configuration command, some printer families allow you to send the NORESET command {NORESET} before sending any configuration commands. When you are done configuring the printer after issuing the NORESET command, send the COMMIT command {COMMIT} to write to flash and restart the printer.

TWO LETTER CONFIGURATION COMMANDS (REQUIRE {COMMIT})

COMMAND	MEANING	ORIGINAL MF2/MF3/2t/4t	RADIO READY 2t/3i/4t
CA:n	Automatic White Space Advance n = y or Y → Speed up over white n = n or N → Do not speed up [Speeds paper feed when there is nothing to print]	X (default N)	X (default Y)
CB:nn	Configure Baud Rate: nn = 00 → 1200 BAUD nn = 01 → 2400 BAUD nn = 02 → 4800 BAUD nn = 03 → 9600 BAUD (default) nn = 04 → 19.2K BAUD nn = 05 → 38.4K BAUD nn = 06 → 57.6K BAUD nn = 07 → 115.2K BAUD	X (MF2/MF3) X X (MF2/MF3) X X (MF2/MF3) X	X X X X X X X



CD:nn	Configure Darkness of Print (a.k.a. burn adjust). The value of nn = 0 is "normal plain paper" nn = -25 → -25% (for very sensitive stock) nn = -20 → -20% nn = -15 → -15% nn = -10 → -10% nn = -05 → -5% nn = 00 → 00 (default - for "regular" stock) nn = 05 → +5% nn = 10 → +10% nn = 15 → +15% nn = 20 → +20% nn = 25 → +25% nn = 30 → +30% nn = 35 → +35% (for high temp stock)	X	X
CE:n	Battery Eliminator n = y or Y → Battery Eliminator present n = n or N → None (default) [Battery Eliminator can be used to power the printer from a wall charger]	X (4t only)	X (4t only)
CF:n	Form Feed Active n = y or Y → Act on Form Feed n = n or N → Ignore Form Feed (default) [The Form Feed character, 12 decimal or 0C Hex can configured to be ignored]	Always ON	X
CG:n	Beep when Charger first connected N = y or Y → Beep N = n or N → Do not beep (default)	X	X
CH:n	RS-232 Handshaking n = N → No handshaking n = H → Hardware handshaking n = S → Software handshaking n = B → Both H/W and S/W (default)	X	X
CJ:n	Job Status Reporting in Easy Print n = y or Y → Job Status Report ON n = n or N → Job Status Report OFF (def) [The Job Status report, which issues a message via whatever communications medium was used to send the job can show successful job completion or if there was a problem such as paper out]		X
CL:nnn	Default Protocol nnn = ESC → Line Printer Mode (default) nnn = EZ → Easy Print Mode nnn = EMC1 → Custom 1 nnn = EMC2 → Custom 2 nnn = EMC3 → Custom 3 nnn = EMP1 → PGL nnn = EMZ1 → CPCL nnn = EMZ2 → Cog nnn = EMZ3 → ZPL	X X	X X X X X X X X



CN:n	RS-232 Number of Data Bits n = 7 → 7 data bits n = 8 → 8 data bits (default)	X	X
CP:n	Configure Parity n = N → No Parity (default) n = E → Even Parity n = O → Odd Parity	X	X
CR:nnn	RF Radio Power Down Timeout nnn in minutes nnn = 65536 → Never Time Out (default) [Turns OFF the radio if there is no activity in nnn minutes. Requires user to turn radio back on via button push before communications can resume]		X
CS:nnn	Beeper ON or Off n = y or Y → Beeper is ON n = n or N → Beeper is OFF	X	X
CT:nnn	System Timeout (Printer Sleep Timer) nnn in seconds (default 10s – 60s) nnn = 9999 → Never Time Out [If there is no activity – communications or button pushes – within this time the printer will “go to sleep” to save power. A button push or new communications will wake up the printer automatically]	X	X
CU:n	Paper Out Beep n = 0 → One Beep (default) n = 1 → Five Beeps n = 2 → Five Beeps repeated every 15s n = 3 → Five Beeps repeated every 30s n = 4 → Five Beeps repeated every 60s [Set the printer to continuously remind user that paper needs to be changed. Beep repetitions stop when printer goes to sleep]		X
TP:n	Set Test Print n = 0 → Normal self test (default) n = 1 → Special MAC address label [When n is not zero, a special self test label will be printed. After a special label is printed, performing another self test within 10 seconds will print the normal self test]		X
COMMIT	Required after issuing one or more of the above commands to write the configuration to flash and restart the printer	X	X



THREE LETTER CONFIGURATION COMMANDS (SELF-COMPLETING - NO {COMMIT})

Note: Details of Parameters for each command is given in the section for that command

COMMAND	MEANING	ORIGINAL MF2/MF3/2t/4t	RADIO READY 2t/3i/4t
CBT	Configure Blue Tooth		X
CIB	Configure Infrared BAUD	X	
CIN	Configure IrDA Name	X	
CIP	Configure Infrared Protocol	X	
CIV	Configure	X	
CLP	Configure Label Printing		X
CMR	Configure Magnetic Card Reader	X (if card reader)	X (if card reader)
CSR	Configure Smart Card Reader	X (if card reader)	X (if card reader)
CTC	Configure TCP/IP and 802.11		X
NORESET	This command can be sent when you are configuring several areas requiring several different configuration commands. It prevents the printer from writing to flash and restarting automatically – instead it will wait until the COMMIT command is received.		X

THREE LETTER CONFIGURATION COMMANDS (SELF-COMPLETING - NO {COMMIT})

Note: The following commands act on the entire configuration data set and require no individual parameters or data

COMMAND	MEANING	ORIGINAL MF2/MF3/2t/4t	RADIO READY 2t/3i/4t
CDV	Configure Default Values [Reverts to Non-User-Specific Default Values at time of Manufacture for Configuration Parameters]		X
RDV	Restore Default Values [Restores all configuration parameters to those stored by the SDV command]		X
SDV	Store Default Values [Stores an image of the current parameter values in separate area of flash – see also RDV to Restore the parameters to those values stored by SDV]		X



{CBT} CONFIGURE BLUETOOTH (BT)

PARAMETER	MEANING	VALUES/FORMAT	ORIGINAL MF2/MF3/2t/4t	RADIO READY 2t/3l/4t
A:<string>	Authentication Required	n = Y → Required n = N → Not Required		X
B:n	Bondable	n = Y → Bondable n = N → Not Bondable		X
C:n	Connectable	n = Y → Connectable n = N → Not Connect.		X
D:n	Discoverable	n = Y → Discoverable n = N → Not Discover.		X
E:n	Encryption turned ON	n = Y → Encrypt Data n = N → No encryption		X
F:n	“Friendly Name” (BT Device Name)	32 ASCII characters max		X
I:nnn	Inactivity Timeout [Bluetooth will disconnect if there is no BT traffic in nnn seconds]	nnn in seconds default = 180 seconds minimum = 60 seconds		X
P:<string>	Passkey [NOTE: Some devices with limited keyboard require a numeric passkey]	16 ASCII characters max Default = “passkey”		X
S:<string>	Service Name	32 ASCII characters max. Default varies by printer type		X
W:nn	Watchdog timer to check module	nn in seconds. Default is zero (no check). Recommended value is 55s. Legacy – used with older modules only.		X

{CIB} CONFIGURE IrDA BAUD

The CIB command requires data only to configure the maximum BAUD rate of any IrDA communications. It is best to set this value to no more than 38.4K Baud – setting any higher can result in retries and actually slow down the resulting data transfer rate. Note that this affects IrDA BAUD ONLY. All other infrared transmissions use the configured RS-232 baud rate as the data transfer rate.

IrDA communications always begins at 9600 BAUD. This value changes the MAXIMUM value this IrDA baud rate can be negotiated as two devices connect. This same command also contains a letter N or W. This changes whether the printer will begin printing as soon as it has enough data (N for NO WAIT) or if it will wait for disconnect before beginning to print (W for WAIT)

COMPLETE COMMAND	VALUES/FORMAT	ORIGINAL MF2/MF3/2t/4t	RADIO READY 2t/3l/4t
CIB:nm	n changes maximum IrDA BAUD rate: 3 = 9600 BAUD 4 = 19.2K BAUD 5 = 38.4K BAUD 6 = 57.6K BAUD 7 = 115.2K BAUD m specifies whether the printer should wait for disconnect before beginning to print N = No Wait W = Wait for disconnect	X	



{CIN} CONFIGURE IrDA BAUD

The CIN command requires data only to configure the name given to the printer when it connects to an IrDA host

COMPLETE COMMAND	VALUES/FORMAT	ORIGINAL MF2/MF3/2t/4t	RADIO READY 2t/3l/4t
CIN:<string>	String can be a maximum of 19 characters	X	

{CIP} CONFIGURE INFRARED PROTOCOL

The CIP command selects which protocol is to be used for Infrared communications. IrDA is a bidirectional communications protocol. All others are unidirectional unless noted as 2WAY

COMPLETE COMMAND	VALUES/FORMAT	ORIGINAL MF2/MF3/2t/4t	RADIO READY 2t/3l/4t
CIB:nnn	nnn selects which protocol is to be used for infrared: OFF = No infrared communications IRDA = IrDA protocol ASK = ASK (Amplitude Shift Keying) ASK-CRC = ASK with CRC protocol ASK-CRC-2W = Bidirectional ASK with CRC DIRECT = DIRECT (IR on/off to send) DIRECT-CRC = Direct with CRC protocol DIRECT-CRC-2W = bidirectional DIRECT-CRC PULSE – PULSE (IR with IrDA modulation only) PULSE-CRC = Pulse with CRC protocol PULSE-CRC-2W = bidirection PULSE-CRC [NOTE: The CRC protocol appends a HEADER and TRAILER onto the DATA as follows: HEADER FORMAT: BYTE #1 = STX (0x02) BYTE #2 = LSB of Byte Count BYTE #3 = MSB of Byte Count TRAILER FORMAT: BYTE #1 = ETX (0x03) BYTE #2 = LSB of CRC BYTE #3 = MSB of CRC The CRC is a CRC-16 calculation. First byte in the calculation is the LSB of the Byte Count and the last byte in the calculation is the ETX. If the CRC calculated by the printer does not match the one sent, or if the printer does not receive the full transmission after it receives the opening STX, the printer will beep. If the transmission is received completely and the CRCs match, the printer will print the data]	X	

{CIV} CONFIGURE IrDA AUTOVOID

The CIV command can be used to turn autovoid ON or OFF (default is ON). If an IrDA connection is made and the printer times out before it receives a disconnect from the host, it assumes that all data has not been transferred and will automatically print VOID ** VOID ** VOID across the printed page as a safeguard to assure the proper document has printed completely.

COMPLETE COMMAND	VALUES/FORMAT	ORIGINAL MF2/MF3/2t/4t	RADIO READY 2t/3l/4t
CIV:n	n is used to turn AutoVoid ON or OFF n = Y → AutoVoid ON n = N → AutoVoid OFF	X	



{CLP} CONFIGURE LABEL PARAMETERS

PARAMETER	MEANING	VALUES/FORMAT	ORIGINAL MF2/MF3/2t/4t	RADIO READY 2t/3l/4t
B:nn	Back-up distance at the beginning of every Easy Print job	nn in dotlines (.005 inches) Default is 0 (OFF)		X
D:nn	Distance to advance AFTER Qmark (or gap) is detected before stopping at end of label [Setting this will enable automatic QMARK alignment when FEED is pressed]	nn in dotlines (.005 inches) Default is 0 (OFF)		X
M:nn	Maximum distance to advance stock if QMARK or gap is not detected	nn in dotlines (.005 inches) Default is 2400 or 12 inches		X
P:n	Presenter should be used (holds off subsequent print jobs until printed image is removed). Requires re-threading of label stock	n = Y → Presenter on n = N → Presenter off Default is OFF		X (LP3 only)
S:n	Sensor to use for paper out	T = Top or Front sensor B = Bottom or back sensor (Default is back)		X (LP3 only)
T:n	Type of paper to use by default	P = Plain Paper G = Interlabel Gap T = Top/Front Qmark B = Bottom/Back Qmark (default is P for Plain Paper. If B is selected, Paper out sensor moves to T. If T is selected, Paper out sensor moves to B. This can be overridden by including the S parameter AFTER the T parameter in the CLP command.		X
U:nnn	Specifies how long the printer will remain awake if a printed image is left in the presenter. This can be used to extend the normal timeout – the printer uses the longer of the system timeout or this Under Presenter timeout	Nnn in seconds Default is 0		X
W	Use QMARK stock with Windows Driver [If turned ON, automatically looks for QMARK at end of Windows Driver (RLE) print job]	n = Y → ON (Look for QMARK) n = N → OFF (Do not look for QMARK) Default is OFF		X