

Quad FXS Voice Card (type A) for Loop-AM3440

Features

- 4 telephone connections
- PLAR supported
- 3 options supported: Loop Start, Ground Start, Metering Pulse
- Metering Pulse support 12KHz/16KHz
- User programmable signaling Bit A, B, C, D
- User programmable A-law or Mu-law coding
- User programmable gain adjustment
- User programmable balance 600/900 ohm impedance
- Complied with ± 48 Vdc (SDB) and AC (SAB) power modules
- Signaling and voice tests
- Status monitoring



QFXSA Card Panel View (for AM3440-A/B/C)



QFXSA Card (for AM3440-D/E)

Description

The QFXSA plug-in cards are designed for the Loop-AM3440, allowing voice frequency interfaces to be multiplexed as a 64 kbps DS0 signal onto a digital network. QFXSA provides connections to four telephones and it also provides user programmable A-law or mu-law coding. Most popular signaling conventions are supported, including PLAR (Private Line Automatic Ring down). The QFXSA supports signaling and voice tests, including ring test, battery reverse test, channel swap, metering pulse test, and tip open test. Moreover, it supports status monitoring: line, signaling bit, and jump setting.

NOTE

The QFXSA card has to work with AM3440 controller firmware **v8.38.01** or up to support below new functions:

- (a) Firmware upgrade
- (b) FPGA reset
- (c) 0.1dB step gain adjustment
- (d) Signaling bits programmable
- (e) Diagnostic
- (f) Signaling tests
- (g) Status monitoring

Ordering Information

To specify options, choose from list below:

Note: RoHS compliant units are identified by the letter **G** appearing immediately at the end of the ordering code.

Model	Description	Note
Loop-AM3440-QFXSA-x-pt-G	Quad FXSA voice card	For AM3440-CHAK/CHB/CHC only.
Loop-AM3440-QFXSA-M-x-pt-G	Quad FXSA with MP 16KHz voice card	Jumper setting options: Loop Start, Ground Start (GS), Metering Pulse Transmit 12/16 KHz (MP)
Loop-AM3440-QFXSA-M12-x-pt-G	Quad FXSA with MP 12KHz voice card	
Loop-AM3440-QFXSA-GS-x-pt-G	Quad FXSA with GS	For x & pt options, please refer to the table below for detail information
Loop-AM3440-QFXSA-GM-x-pt-G	Quad FXSA with GS and MP 16KHz voice card	
		Work with controller firmware v8.38.01 or up for software programmable signaling bits.
Loop-AM3440-D-QFXSA-x-pt-G	Quad FXSA voice plug-in card	For AM3440-CHD only.
Loop-AM3440-D-QFXSA-M-x-pt-G	Quad FXSA with MP 16 KHz voice plug-in card	Jumper setting options: Loop Start, Ground Start (GS), Metering Pulse Transmit 12/16 KHz (MP).
Loop-AM3440-D-QFXSA-M12-xpt-G	Quad FXSA with MP 12 KHz voice plug-in card used	
Loop-AM3440-D-QFXSA-GS-x-pt-G	Quad FXSA with GS plug-in card	For x & pt option, please refer to the table below for detail information.
Loop-AM3440-D-QFXSA-GM-x-pt-G	Quad FXSA with GS and MP 16 KHz voice plug-in card	
		Work with controller firmware v8.38.01 and up for software programmable signaling bits.
Loop-AM3440-E-QFXSA-x-pt-G	Quad FXSA voice plug-in card	For AM3440-CHEA only.
Loop-AM3440-E-QFXSA-M-x-pt-G	Quad FXSA with MP 16 KHz voice plug-in card	Jumper setting options: Loop Start, Ground Start (GS), Metering Pulse Transmit 12/16 KHz (MP).
Loop-AM3440-E-QFXSA-M12-x-pt-G	Quad FXSA with MP 12 KHz voice plug-in card used	
Loop-AM3440-E-QFXSA-GS-x-pt-G	Quad FXSA with GS plug-in card	For x & pt option, please refer to the table below for detail information.
Loop-AM3440-E-QFXSA-GM-x-pt-G	Quad FXSA with GS and MP 16 KHz voice plug-in card	

Accessories

User's Manual

Loop-AM3440-QFXSA-UM	User's Manual (paper hard copy--optional). A CD version of the manual is already included as standard equipment.
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NOTE: If **x** is not selected from the table below, the default setting for signaling bits is ETSI and for trunk condition is ON HOOK.

■ Where **x** is used to select version type. If this option is not required, omit the **x** field in the ordering code.

x =	Description	Note
A	follows ANSI signaling bits	This option applies to controller version v8.36.XX and before.
E	follows ETSI signaling bits	
S	follows customer's special bits assignment	For controller version v8.38.01 and after, the default mode for signaling bit is ETSI mode and other modes may set via VT100.

Note: For S (customer's special bit), please contact your nearest Loop sales representative.

■Where **pt** is used to select the power type:

pt=	Description	Note
24	For AM3440-A type chassis using SDA power module with ±24Vdc input power	For AM3440-CHAK /CHB/CHC/CHCJ/CHD and AM3440-E
PWR	For AM3440-A with ±48Vdc (SDA, or SD125) For AM3440-B/C/D with ±48Vdc (SDB) and AC (SAB) power modules	
PWRIE1613	For AM3440-A with ±48Vdc (SDA) power complied with IEEE1613 standard	

	For AM3440-C with $\pm 48\text{Vdc}$ (SDB) power complied with IEEE1613 standard	
24IE1613	For AM3440-A with $\pm 24\text{Vdc}$ (SDA) power complied with IEEE1613 standard.	

QFXSA Voice Card for Loop-AM3440 Product Specification

Voice Card (QFXSA)

Quad FXSA voice card

(4 FXS per plug-in)

Connector 1, 2, 3, or 4 FXS per RJ11 connector

Power $\pm 48\text{Vdc}$

Alarm Conditioning CGA busy after 2.5 seconds of LOS, LOF

Encoding A-law or μ -law, user selectable

AC impedance Balanced 600 or 900 ohms (user selectable)

Longitudinal Rejection 55 dB

Gain Adjustment -21 to +3 dB / 0.1 dB step for transmit (D/A) & receive (A/D) gain

Signal/ Distortion > 46dB with 1004 Hz, 0dBm input

Frequency Response ± 0.5 dB from 300 to 3400 Hz, coincide with ITU-T G.712

Loop Feed $\pm 48\text{Vdc}$ with 25mA current limit per port

Jumper Selectable: 25mA, 30mA, 35mA

Ringing Support 2 REN per port (1 REN = $6930\Omega + 8 \mu\text{F}$)

16.7Hz, 20Hz, 25 Hz, 50Hz (user programmable)

64 / 78 Vrms by jumper setting (Default is 78 Vrms)

2 sec on 4 sec off, or 1 sec on 2 sec off optional for PLAR (user programmable)

Metering Pulse 12KHz/ 16KHz (2.4Vrm/1Vrm user programmable)

Signaling Loop Start (Metering Pulse, DTMF, Dialing Pulse, PLAR), GND-Start (Tip Open, Ring GND),

OOS Alarm, Battery Reverse

- All in-band signaling tones are carried transparently by the digitizing process.
- Customer is responsible for in-band signaling compatibility between a telephone and a switch, or between a PBX and a switch.

Compliance

FCC Part 68, CS-03 listed for connection to PSTN

NRTL safety listed: UL1459, CSA

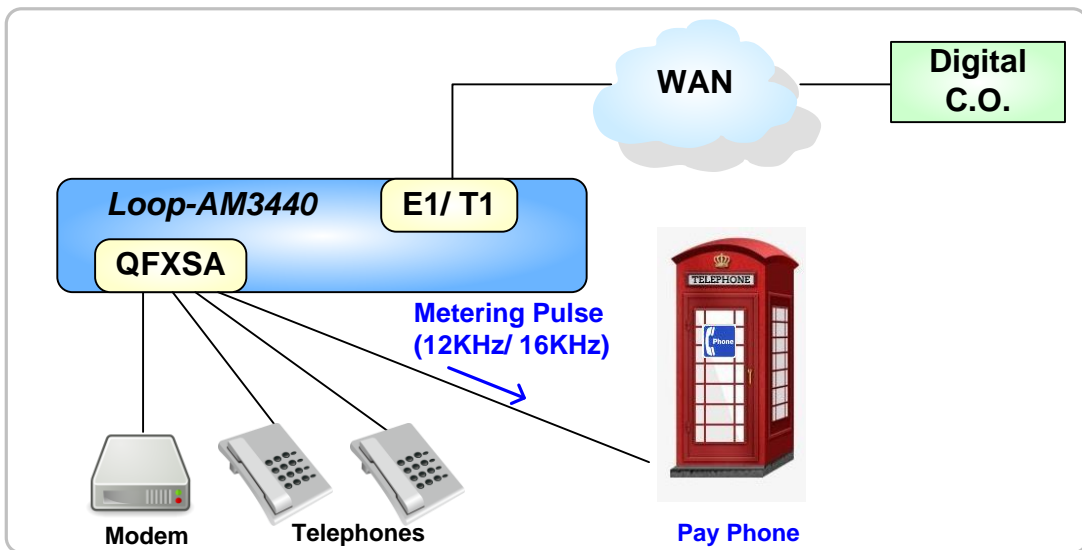
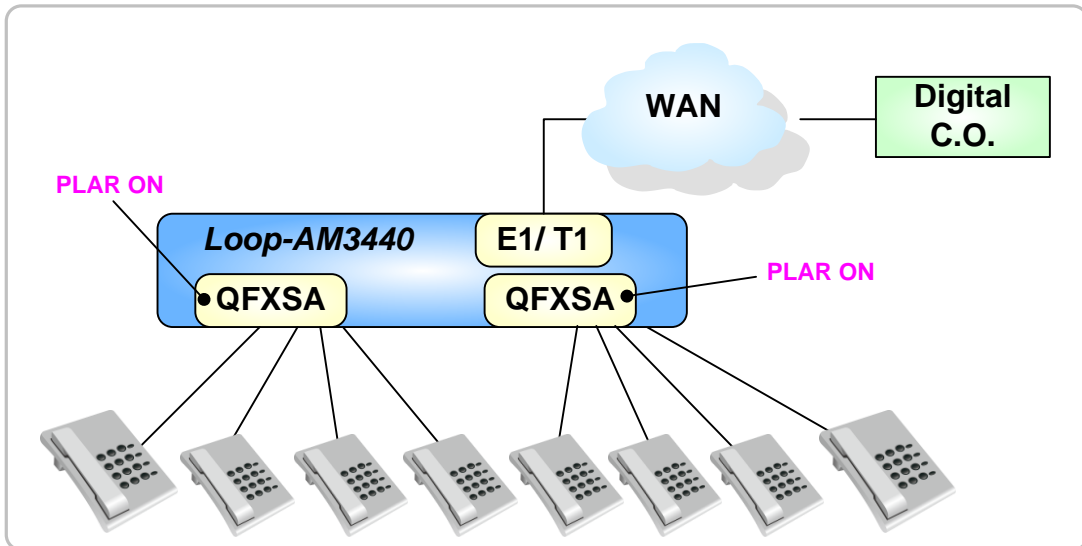
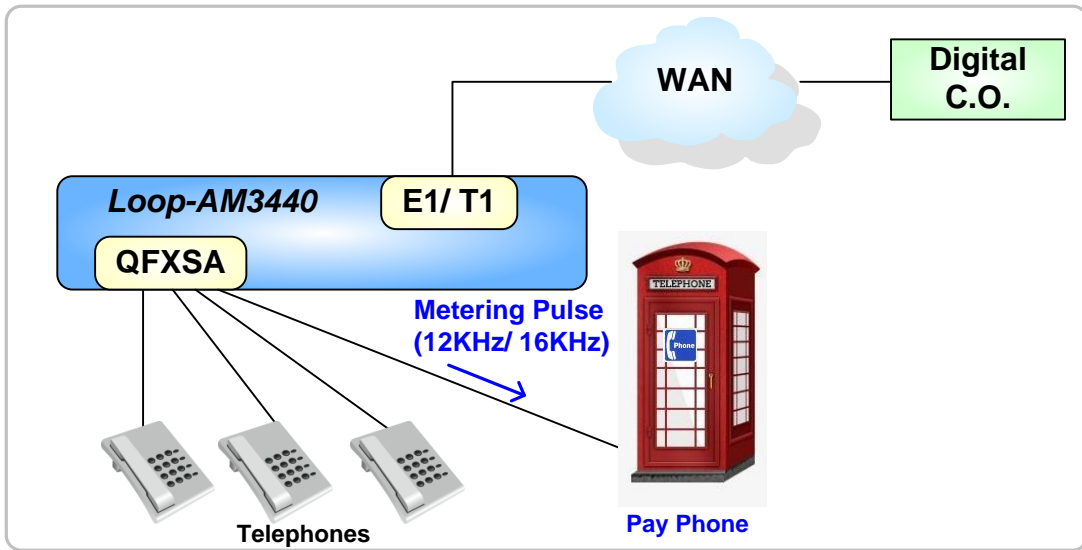
ITU-T G.712

Reference Table for QFXSA Signaling Bits

Item	Tx/Rx	Signaling Bit ABCD (J1 Jump)									
		PIN	N/A	P14_P23	P15_P22	P16_P21	P17_P20	P18_P19	P16_P21 + P18_P19	P17_P20 + P18_P19	P17_P20 + P16_P21
		Name	ETSI (Default)	ETSI	ANSI	SB3	SB4	SB1	SB3.1	SB4.1	SB4.3
ON-HOOK	TX	0101		0101				1101			1111
OFF-HOOK	Tx	1101		1101	1111	1101	0101	0101	1101	1111	0000
RING ON	Rx	00**		0001	0000	1011	0001	0101	1011		0000
OFF-HOOK [@PLAR- ON]	Tx	1111			1111			0101	1111		0000
RING ON [@PLAR- ON]	Rx	1111			1111			0101	1111	0000	1111
BATTERY REVERSE	Rx	0100				0100		0001	0110		0100
Pulse ON [Metering Pulse]	Rx	0111		0111		0000		0111	0000		0111
TIP-OPEN [GND- Start]	Rx	1111						1111			
RING-GND [GND- Start]	Tx	0001		0001		0000	0001	1111	0000		0001
OOS ALARM	Rx	****						1010			

- NOTES:**
- * for don't care.
 - [GND-Start] and [Metering Pulse] are available only when these two options are selected.
 - For the controller version v8.38.01, after changing the signaling bit settings, if you pull out the QFXSA card and then plug it into the chassis again, signaling bit settings remain the same. If you want to change the configuration by jumpers back to which as specified in the table above, you need to perform the "Return to Default" (Path: Y -> Card Load Default Config).

Application Illustrations





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