

Application Note asynchronous (V.24/28) over synchronous (Nx64)

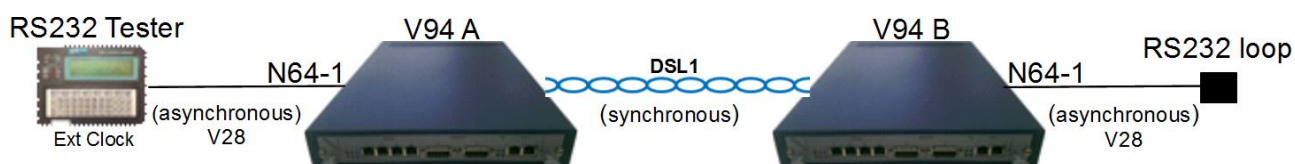
Contents

Contents	1
Summary	1
1 Configure a V94 Device	1
2 Cabling / Checking	3

Summary

This document describes an asynchronous (V.24/28) transmission over an synchronous (Nx64) Interface with two FG-PAM-SR2L-2E1B/N64/4Eth-RP,V94 SHDSL LTU devices based on the software 1.6.6. The latest software is available to download on our extranet (<http://www.flexdsl.ch>).

An installation example with the most important commands and points to care about is shown below. We just like to have V.24/28 (asynchronous 9600bit/s) and Ethernet transmission between the two devices over one SHDSL (SHDSL 1) copper pairs with a speed of 5.7Mbit/s.



1 Configure a V94 Device

Enter in device **V94 A** with the LCT RS-232 Interface.

Type following commands	Description
3 <↵>	Go to Configuration Management (CM)
<DEFAULT EVERYTHING> <↵>	Set everything to default configuration
<MASTER ON 1> <↵>	Configure SHDSL 1 as MASTER
<BASERATE 89 1> <↵>	Configure SHDSL 1 channel baserate (M*64k)
<PAM 32 1> <↵>	Configure SHDSL 1 channel line coding
<PAYLOAD N64,WAN 1> <↵>	Configure Interface N64 and Ethernet over SHDSL 1
<SETCLOCK INT 1> <↵>	Set SHDSL 1 channel clock source
<EXTCLOCK INT CO> <↵>	Set N64 card clock source and direction
<N64RATE 1> <↵>	Set N64 data rate
<NET> <↵>	Go to NET menu
<SETIP 192.168.0.236> <↵>	Set the IP-address of the device
<NETMASK 255.255.255.0> <↵>	Set the subnet mask
<GATEWAY 192.168.0.254> <↵>	Set the default gateway
<M> <↵>	Go to Configuration Management (CM)
<M> <↵>	Go to Main Menu
2 <↵>	Go to Fault and maintenance management (FMM)
<APPLY ALL> <↵>	Apply all configurations (written in the running config.)
<CONFIRM><↵>	Confirm all configurations (written in the startup config.)

It may be that some configuration are already correct but configure the commands for your safety.

In Menu Configuration Management (3) you can type <CONFIG> to see the following:

Running Line Configuration			

xDSL	DSL1	DSL2	
Description :	DSL1	DSL2	
Mode :	Master(HTU-C)	Master(HTU-C)	
Extended rates:	OFF	OFF	
PAM, Baserate :	PAM32,89	PAM32,89	
Annex :	B	B	
Payload :	N64,WAN	E1-2,WAN	
Clock source :	Int	E1-2,Int	
Reserve :	---	---	
Power :	OFF	OFF	
GS compatible :	OFF		
NM/LA alarm :	OFF/OFF		
E1	E1-1	E1-2	N64:V28 N64
Description :	E1-1	E1-2	Rate : 1
G.704 framing:	ON	ON	Autoloop: OFF
CRC4 :	ON	ON	Extclock: INT/CO
TS into DSL :	0-31	0-31	
TS into WAN :	NONE	NONE	
AIS Det/Gen :	ON/ON	ON/ON	
E1 clock :	DSL	DSL	
E1 mode :	HDB3/LONG	HDB3/LONG	

Enter in device **V94 B** with the LCT RS-232 interface.

Type following commands	Description
3 <J>	Go to Configuration Management (CM)
<DEFAULT EVERYTHING> <J>	Set everything to default configuration
<MASTER OFF 1> <J>	Configure SHDSL 1 as Slave
<BASERATE AUTO 1> <J>	Configure SHDSL 1 channel baserate Auto
<PAYLOAD N64,WAN 1> <J>	Configure Interface N64 and Ethernet over SHDSL 1
<SETCLOCK N64 1> <J>	Set SHDSL 1 channel clock source
<EXTCLOCK Normal CO> <J>	Set N64 card clock source and direction
<N64RATE 1> <J>	Set N64 data rate
<NET> <J>	Go to NET menu
<SETIP 192.168.0.237> <J>	Set the IP-address of the device
<NETMASK 255.255.255.0> <J>	Set the subnet mask
<GATEWAY 192.168.0.254> <J>	Set the default gateway
<M> <J>	Go to Configuration Management (CM)
<M> <J>	Go to Main Menu
2 <J>	Go to Fault and maintenance management (FMM)
<APPLY ALL> <J>	Apply all configurations (written in the running config.)
<CONFIRM><J>	Confirm all configurations (written in the startup config.)


It may be that some configuration are already correct but configure the commands for your safety.

In Menu Configuration Management (3) you can type <CONFIG> to see the following picture:

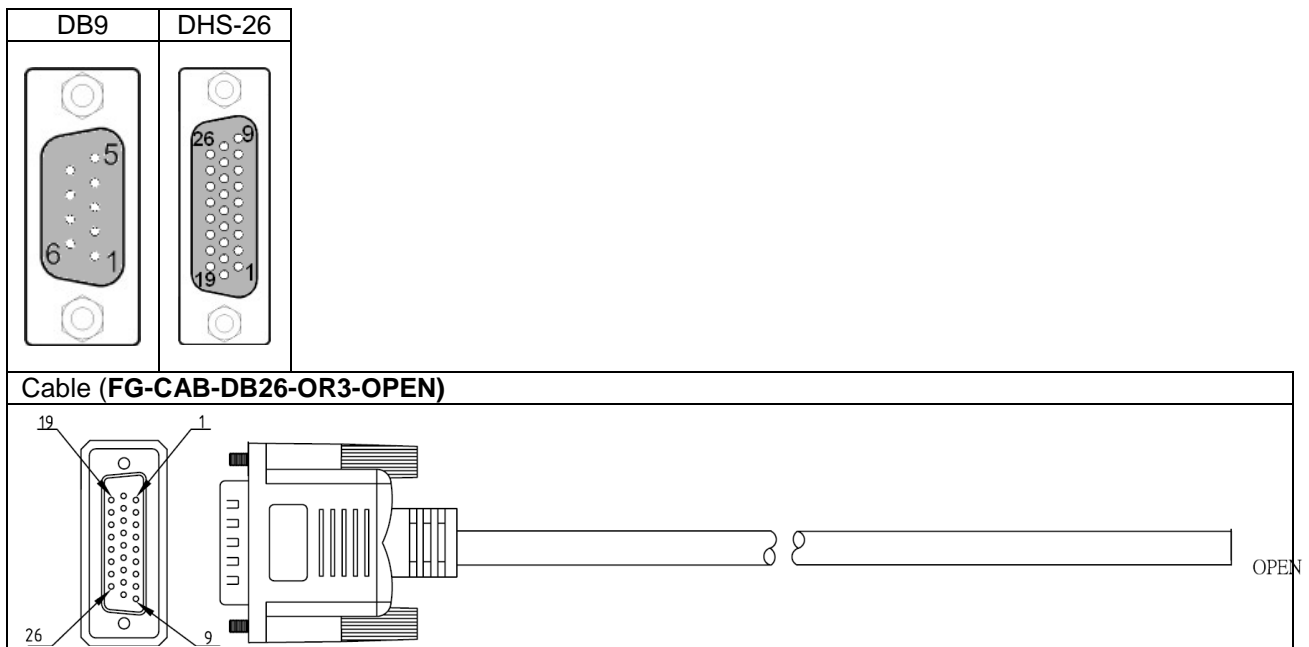
Running Line Configuration			

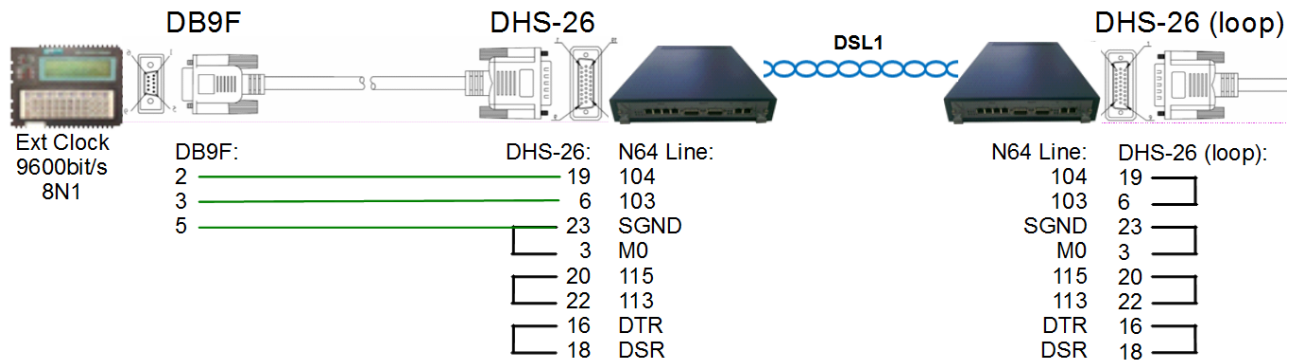
xDSL	DSL1	DSL2	
Description :	DSL1	DSL2	
Mode :	Slave(HTU-R)	Slave(HTU-R)	
Extended rates:	OFF	OFF	
PAM, Baserate :	AUTO	AUTO	
Annex :	A/B	A/B	
Payload :	N64, WAN	E1-2, WAN	
Clock source :	N64, Int	E1-2, Int	
Reserve :	---	---	
Power :	OFF	OFF	
GS compatible :	OFF		
NM/LA alarm :	OFF/OFF		
E1	E1-1	E1-2	N64:V28 N64
Description :	E1-1	E1-2	Rate : 1
G.704 framing:	ON	ON	Autoloop: OFF
CRC4 :	ON	ON	Extclock: NORMAL/CO
TS into DSL :	0-31	0-31	
TS into WAN :	NONE	NONE	
AIS Det/Gen :	ON/ON	ON/ON	
E1 clock :	DSL	DSL	
E1 mode :	HDB3/LONG	HDB3/LONG	

The idea is the following: First enable the MASTER/SLAVE mode on the modem, then configure PAM/Baserate, then configure the transmit data, Clock and N64 settings, then do the network settings (IP address, default subnet mask and default gateway) and finally, these settings are applied and then are written in the EEPROM. The synchronous transfer rate (N64) should be at least a factor of 4 to be greater than the asynchronous rate (V.24/28).

	ATTENTION
	DON'T FORGET TO WRITE THE CONFIGURATION IN THE STARTUP CONFIGURATION WITH THE FOLLOWING COMMANDS:
	2 <J> Go to Fault and maintenance management (FMM)
	<APPLY ALL> <J> Apply all configurations (written in the running config.)
	<CONFIRM> <J> Confirm all configurations (written in the startup config.)

2 Cabling / Checking





After the installation and configuration of the link you have to check the DSL and N64 Link.

DSL Status LCT RS-232:

2 <J>	Go to Fault and maintenance management (FMM)
<STATUS> <J>	Show current DSL working parameters
FMM>STATUS	

Status	: DSL1 DSL2

I/F mode	: CO CO
SYNC	: 1 -
SEGD	: 1 -
Power backoff	: 6.0 0.0 dbm
Far end power backoff	: 6.0 0.0 dbm
Loop attenuation	: 1.0 0.0 dB
NMR	: 19.0 0.0 dB
Bitrate	: 5704 0 kbit/s
SRU #	: 0 0
Active sync. source	: N64 Internal
Remote power state	: OFF OFF

Temperature	: 37.250 C
<STATUS EXT> <J>	Show current N64 working parameters
FMM>STATUS EXT	

Card	Cable RTS CTS DCD DTR DSR LL

1. N64	V28 OFF OFF ON ON ON OFF

Please also check whether you have an alarm.

2 <J>	Go to Fault and maintenance management (FMM)
<ALARM> <J>	Display alarms
FMM>ALARM	

Alarm	: E1-1 E1-2 xDSL : DSL1 DSL2

LOS-S	: off off LOS : off on
LFA-S	: off off LOSW : off on
AIS-S	: off off SEG/SEGA : off/off off/off
AIS-R	: off off BER-H : off off
LOOP1	: off off ALB : off off
BER-S	: off off LOOP2 : off off

	: N64 RCONF : off off

ECA:	off NM/LA : off/off off/off
LOOP1:	off RPF/DCL : off/off off/off
DTR-OFF:	off ACL/ACM : off/off off/off

Ethernet	: 1 2 3 4 5 Maintenance

LOS-E	: off on on on on HW-F : off
	DSL-F : off
	SW-MNT : off
