

NEOS 3000

Least Cost Wireless Router

For models:

NEOS 3000A-04	TC35iA5-Q1 or later (GSM)
NEOS 3000A-09	MC37i A4-ARB2 or ARB3 or ARB4 (GSM)
NEOS 3000A-3G09	SIM5218A1-ARB4 (Next G & 3G)
NEOS 3000A-3G11	SI M5218EA1-ARB4 (Optus)



Operating Manual

Introduction

Thank you for purchasing a **NEOS3000** product from **Aristel Networks** Australia. The **NEOS3000** allows you to take advantage of “mobile to mobile” cheaper rates when using your “land-line” telephone or telephone system. The **NEOS3000** can distinguish between your calls to mobile numbers and your calls to land-line numbers. It will then use the least cost network for the call.

You can reprogram the system at any time should you:

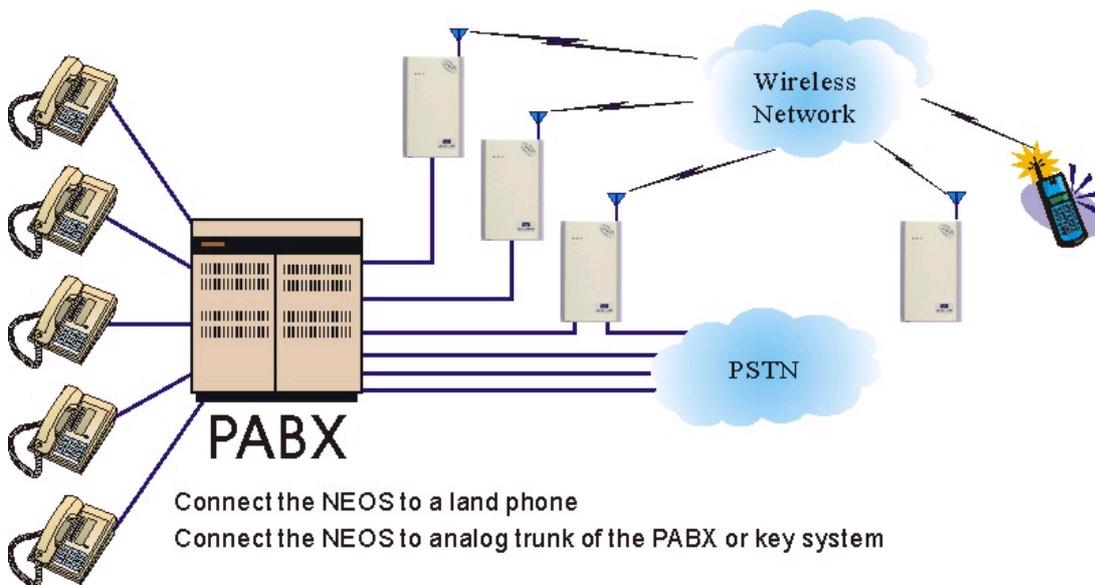
1. Change your mobile contract
2. Need more mobile phones
3. Change any of your mobile numbers
4. Or any other reason

No expensive Technician “service visit” is required for programming. You can do it yourself very simply.

Parts List

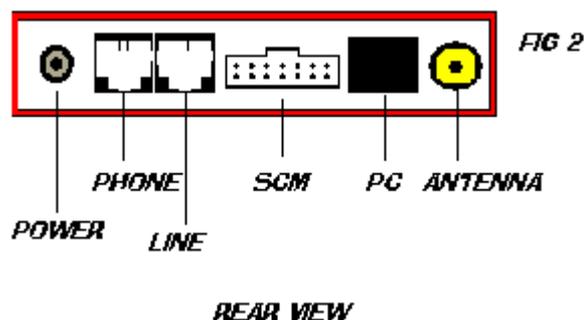
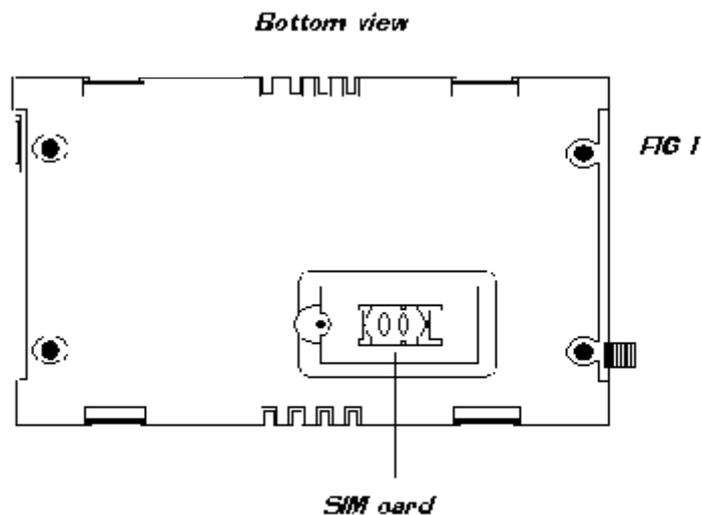
DESCRIPTION	QUANTITY REQUIRED	STANDARD (INCLUDED)	OPTIONAL (NOT INCLUDED)
NEOS3000A / 3000A-3G	1	YES	
DC 12V/1A ADAPTER	1	YES	
PHONE CORD	1	YES	
PHONE SOCKET	1	YES	
MALE SMA ANTENNA	1	YES	
OPERATING MANUAL	1	YES	
DATA CABLE	1	YES (3G)	YES (GSM)
Driver CD	1	YES (3G)	YES (GSM)
DISPLAY	1		YES
SCM50(TC35A2 only)	1		YES

Trunk Side Application



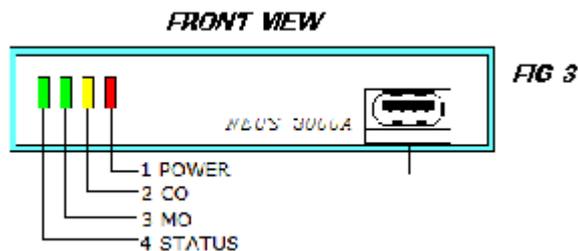
Installation

1. **SIM card installation (Fig 1)**
 - 1.1 Remove the 12V adaptor from the NEOS3000
 - 1.2 Remove the SIM card cover from the bottom of the unit
 - 1.3 Slide the SIM card holder towards the front of the unit
 - 1.4 Lift up the holder
 - 1.5 Insert the SIM card (Note orientation of notched corner)
 - 1.6 Replace holder and slide towards the rear of the unit to lock in place
 - 1.7 Replace cover and power adaptor
2. **Connecting the Antenna (Fig 2)**
 - 2.1 Screw on the antenna cord to the connector on the rear of the unit
 - 2.2 Place antenna away from electrical/electronic systems (computers, microwave ovens, etc)
3. **Connecting the Telephone line and Telephone system (Fig 2)**
 - 3.1 If connecting to a phone line, plug the line into the connector marked LINE. Plug your telephone into the connector marked PHONE. Go to step 3.3
 - 3.2 If connecting to a phone system, plug the PBX CO line connection into the connector marked PHONE.
 - 3.3 Connect the power adaptor into the connector marked PWR
 - 3.4 The red POWER indicator should be on.



LED status indicators (FIG 3)

LED Position	LED colour	LED Activity	Description
1	RED	ON OR OFF	DC POWER IS ON OR OFF
2	YELLOW	ON	PSTN LAND LINE IS IDLE
2	YELLOW	OFF	PSTN LANDLINE IS DISCONNECTED
2	YELLOW	CONTINUOUS FLICKER	PSTN LAND LINE IS BUSY/TALKING
3	GREEN	ON	THE MOBILE (GSM/3G) LINE IS IDLE
3	GREEN	FLASH	THE MOBILE (GSM/3G) LINE IS BUSY/TALKING
3	GREEN	OFF	NO SIM CARD
4(GSM)	GREEN	ON	GSM LINE IS BUSY
4(GSM)	GREEN	FLASH 0.6sec ON/0.6sec OFF	NO SIM CARD OR NETWORK SEARCHING
4(GSM)	GREEN	CONTINUOUS FLICKER 0.075sec ON/3sec OFF	IN SERVICE
4(GSM)	GREEN	OFF	GSM/3G POWER OFF
4(3G)	GREEN	ON	3G NO SIM CARD OR NETWORK SEARCHING
4(3G)	GREEN	FLASH 0.8sec ON/0.8sec OFF	IN SERVICE
4(3G)	GREEN	0.2sec ON/0.2sec OFF	DATA TRANSMISSION
4(3G)	GREEN	OFF	GSM/3G POWER OFF
2&3	GREEN & YELLOW	FLASH 3 PER SECOND	SET-UP MODE
2&3	GREEN & YELLOW	FLASH ¼ SEC ON & ¾ SEC OFF	PROGRAMMING MODE



Using the NEOS3000

Stand-alone (no Telephone System)

- Program the codes to be sent to Mobile network
- Lift off the handset
- Listen for dial tone. (Check system connections if no dial tone is heard)
- Dial the desired number

Connected as an exchange line on a Telephone System

Select the exchange line connected to the NEOS3000 (Manual or Auto LCR)
Listen for dial tone. (Check system connections if no dial tone is heard)
Dial the desired number

NOTE! If using a system, the NEOS3000 can be left in the default condition. No programming is required

Entering programming mode

Plug a telephone (SLT) into the "PHONE" socket and unplug the "LINE" connection, Lift off the handset. You will hear continuous dial tone. Dial * * * * #. You will hear "Beep, Beep, Beep" repeated continuously. The green and yellow LEDs flash. You have 8 seconds to enter the password. Enter the password (default = 1234#) you will hear a "Der" tone (this is "set-up" tone) repeated every 2 seconds. The green and the yellow LEDs will slow flash.

System programming can now be commenced. See chart below. If a feature is correctly programmed, the green and the yellow LEDs will flash once and a Beep tone will be heard. If the input was incorrect, the green and the yellow LEDs will flash three times and three Beep tones will be heard. If you make an incorrect entry, hang up for less than 2 sec. to return to set-up mode To end programming, hang-up for more than 2 sec. or press * * 0 0 #

Programming Features

Factory Default Settings - Press 9 9 9 to reset the unit back to Factory Default Settings

Feature	Function Code	Description
Setup Mode	*****	Enter the setup mode from the normal mode. Pick up the phone handset and you will hear the dial tone. Press [******#] to enter setup mode. Press the engineer password to enter the programming mode in 8 seconds. Otherwise it will escape the setup mode and return to the normal mode.
	00#	Escape the programming mode and return to the normal mode. When programming is finished please press [*00#] to escape the setup mode and you will hear the dial tone and return to the normal mode.
	SECRET	Original manufacture password. You can use the original password to enter programming mode if you lose the engineer password.
Password	0XXXXXXXX#	Set the engineer password. It is 4 to 8 digits not including #. The default is [*1234#]. Example: Set087654321#, the password becomes 87654321# from 1234#.
	913	To disable press the engineer password. Don't press the engineer password after pressing [*****#] to enter programming mode directly.
	914	To enable press the engineer password. You need to press the engineer password after pressing [*****#] to enter programming mode.
Permissible Dialling	915	Disable the limited dial of a permissible dialling number. It is the default. You can make any call from a mobile trunk limitlessly and the routing function deactivates.
	916	Enable the limited dial of permissible dialling number. You can only call through a mobile trunk when the prefix of a number matches the permissible dial number without a PSTN line. Routing function: The matched numbers are called through a mobile trunk and other numbers are called through PSTN.
	80XXXX#	Add the new permissible dialling number (without PSTN line) and routing number (with PSTN line). The permissible dialling number is 1 to 4 digits and up to 50 sets. Example: Set800912#. The numbers of 0912xxxxx go through a mobile trunk, the other numbers go through PSTN.
	70XXXX#	Delete the saved permissible dialling number (without PSTN line) and routing number (with PSTN line).
	998	Delete all the saved permissible dialling numbers (without PSTN line) and routing numbers (with PSTN line).
Limit dialling from PSTN	81XXXX#	Add the new limit dialling number from PSTN line. The limit dialling number is 1 to 4 digits and up to 20 sets. Example: Set810204#. The numbers of 0204xxxxx can not call through PSTN.
	71XXXX#	Delete the saved limit dialling number from PSTN line.
	997	Delete all the saved limit dialling numbers from PSTN line.

Time limit & Call signal	900	Disable outgoing time limit. It is the default.
	911	Disable break in the call. NEOS will emit the reminding tone on 30 seconds before ending and keeping the call until break.
	912	Enable break in the call. NEOS will emit the reminding tone on 30 seconds before ending and break the call at the end.
	90X	Set the time of one outgoing call. X is 1 to 9 minutes. The default is 3 minutes.
	965	Disable the counting signal for SCM50.
	966	Enable the counting signal for SCM50. It should be enabled when coupling SCM50.
	963	Disable the polarity reversal for outgoing call. It is the default.
	964	Enable the polarity reversal for outgoing call.
	967	Disable the polarity reversal for incoming call. It is the default.
968	Enable the polarity reversal for incoming call.	
Tone Frequency	960	Set the dial tone as 523Hz (ARB2) or 425X25Hz (ARB3/ARB4).
	961	Set the dial tone as 400Hz (ARB2) or 425Hz (ARB3/ARB4).
	962	Set the dial tone as 350Hz+440Hz (ARB2) or 400Hz+425Hz (ARB3/ARB4). It is the default.
	927	Disable the false ring back tone. It is silent without the reminding tone (DU DU) and false ring back tone.
	928	Set the reminding tone (DU DU) after dial.
	933	Set the reminding tone (DU DU) then false ring back tone after dial.
	934	Set false ring back tone after dial. There is no reminding tone (DU DU). It is the default.
	939	Set the false ring back tone as 400Hz.
	969	Set the false ring back tone as 440Hz+480Hz. It is the default.
	929	Set the reorder tone as 400Hz after the call party breaks the call.
	930	Set the reorder tone as 480Hz+620Hz after the call party breaks the call. It is the default.
Router Selection	925	Disable manually select the mobile trunk. It is the default.
	926	Enable manually select the mobile trunk.
	61X#	Set the access code of manually selecting the mobile trunk. X is 0 to 9 and *. 9 is default. You can assign to select the mobile trunk by pressing 9 then dial the number when enabling 926 and set 619#. Example: After enabling 926, dial 90509123123, it will call0509123123 through mobile trunk.
	571	Disable automatically detecting PSTN line. When PSTN line is connected and the routing function activated.
	570	Enable automatically detecting PSTN line. NEOS will detect if the PSTN line is connected.
Speed Dial	573	Disable speed dialling through phone book of SIM. It is the default.
	574	Enable speed dialling through phone book of SIM.
	52X	Set the speed dialling code. X is 0 to 9 and *. * is default. Example: Set 574 and 52*. When you dial *10 NEOS will call by the 10th number of SIM through the mobile trunk.

Transfer Dialler	6 5 X #	Set the forward number on busy. X is the forward number from 1 to 10 digits. 65*# cancels the function.			
	6 3 X #	Enable dialler function for mobile international calls. NEOS will transfer the international call through the mobile by specified operator. 63*# cancels the function. Example: Set 6 3 3 #. When dial 0 0 2 8 6 2 9 8 2 0 3 1 5 6, NEOS will call 0 0 3 8 6 2 9 8 2 0 3 1 5 6 through the mobile.			
	6 6 X #	Enable the dialler function for long distance calls and international calls of PSTN. NEOS will transfer all the calls of long distance and international through PSTN by specified operator. 66*# cancels. Example: Set 6 6 3 #. When dial 0 2 8 5 2 9 8 2 0 3, NEOS will call 1 8 0 3 0 2 8 5 2 9 8 2 0 3 through PSTN.			
	5 8 X	Enable auto-add number function. X is the add number - only 1 digit. 58*# cancels the function. It is used for a client that has no PABX and uses the virtual PBX of a network operator. Example: Before client dials 9 to catch the PSTN line then dials the call number. Set 5 8 9, the client dials * to catch line then make call. NEOS will add 9 before the number to make a call from PSTN.			
Others	6 2 X #	Set the digits of MVPN group. X is 1 to 9 digits, * cancels. 62*#. It is the default. When you call the MVPN number, you need to press # to end the dial. Example: Set 6 2 3 #. When dial 1 2 3 # NEOS will call 1 2 3 through the mobile. If you dial 1 2 3 NEOS will call 1 2 3 through PSTN. °			
	9 3 1	Disable barring an incoming call. NEOS will ring when an incoming call occurs.			
	9 3 2	Enable barring an incoming call. NEOS will bar the call when an incoming call occurs. It is the default.			
	9 1 7	Enable call waiting. You can press HOOK or FLASH to hold the call and answer the other call.			
	9 1 8	Disable call waiting. It is the default.			
	9 9 9	Restore the factory defaults.			
Network	6 7 X X X X X X #	Enable searching specified network. X X X + X X X is the MCC+MNC. XXXXX and XXXXXX both are available.			
	5 7 2	Enable the RSSI (received signal strength indicator). When you set 572 please check the LED of MO and CO as below. Press # to escape.			
		MO LED	CO LED	RSSI	Network Quality
		ON	ON	-51db ~ - 64db	BEST
		ON	OFF	-65db ~ - 82db	BETTER
		OFF	ON	-83db ~ - 95db	GOOD
	OFF	OFF	-96db ~	POOR	
	9 3 7	Disable caller line identification (CLI). Enables calling party to prevent presentation of its line identity to called party.			
	9 3 8	Enable caller line identification (CLI). Shows the number of calling party. It is the default.			
	5 3 X	Adjust the volume of receiver. X is 0 to 4. 5 3 3 is default. It represents level 3.			
	6 0 X #	Adjust the volume of transmitter. X is 0 to 4. 6 0 2 # is default. It represents level 2.			
	6 4 X #	Set the code of caller ID. X : * =cancel 1 =DTMF. 641#. It is the default. 2 =V.23 FSK 3 =BELL 202			
	9 2 3	Disable assign specified carrier of SIM. It is the default.			
9 2 4	Enable assign specified carrier of SIM. NEOS calls through the same carrier of the SIM only. If you change SIM to a different carrier NEOS will bar the call.				
5 9 1	Disable assign specified SIM. It is the default.				
5 9 2	Enable assign specified SIM. NEOS calls through the SIM only. If you change to another SIM, NEOS will bar the call.				

Technical Programming	9 5 X X #	Set the waiting period after dialling. X X is 00 to 83 seconds. The default is 57 seconds. 9557#
	6 9 X X #	Set the times of fake ring back tone. X X is 01 to 99 times. The default is 20 times. 6920#
	5 4 X	Set the delay period between dialled with fake ring back tone. X is 1 to 9 and *(=10), unit is 0.5 seconds. Default is 3, the time period is 1.5 seconds. 543
	5 0 X	Set the interval of number to number of dial. X is 0 to 9 seconds. Default is 4 seconds. Set 500 is 0.5 seconds. 504
	5 1 X	Set the send delay time. X is 0 to 9 seconds. Default is 0. It represents 0.5 seconds. 510
	9 4 X X #	Set the digits of send number. X X is 02 to 31 digits. The default is 9431#
Hot Line	32X#	X=0, Disable the Hot Line function. X=1, Enable the Hot Line function. 320#
	33X#	X= Hot Line Number, Set the Number from 3 to 13 digits.

FREQUENTLY ASKED QUESTIONS

FAQ 1. The Power light does not come on after power up.

Action. Check the power adapter and power cord/socket for correct operation

FAQ 2. How do I check the LED status?

Action. Check Figure 3 on page 4

FAQ 3. When I pick up the phone I cannot hear dial tone.

Action. Check that the phone is OK and operating correctly

Check that the phone line (cord) is connected

Check the pattern of the LED lights for more information see Figure 3

FAQ 4. When I pick up the phone I hear music

Action. The SIM is not registered to the network

The SIM is not operating correctly. Plug it into a mobile phone and check for operation

FAQ 5. I cannot hear the other party's voice

Action. Retry the call. It could be a network connection problem

The signal strength may be too low for proper transmission and reception. Relocate the antenna

FAQ 6. When I dial the mobile number, there is no answer

Action. Mobile network is still searching for mobile phone

Check that line and antenna are connected correctly

FAQ 7. I cannot dial via the PBX system

Action. Power off the NEOS unit. If you cannot make a call via the PBX, the connection to the PBX or the PBX may be faulty. Consult your local PBX dealer.

If you can make a PBX call with the NEOS powered off, consult your NEOS dealer

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