## DigiTimes Research: ICT Report - 1Q 2005

# Taiwan's WLAN sector




*Translated from Chinese*

*Original Chinese: Joan Wu, DigiTimes Research, May 6, 2005*

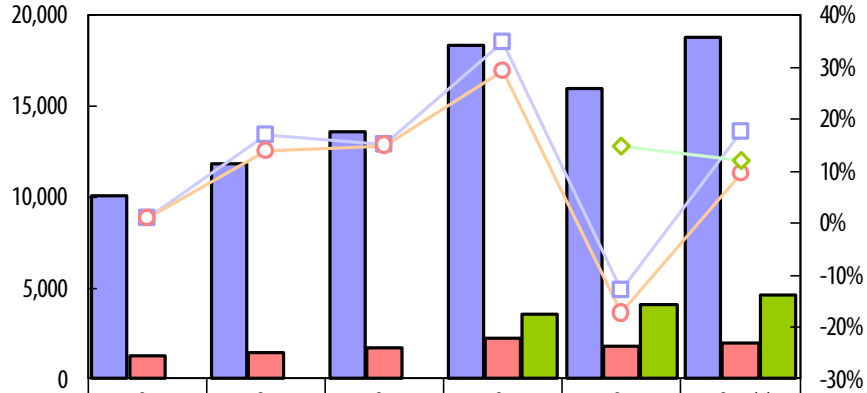
*English edition: Rodney Chan, DigiTimes.com, Aug 15, 2005*

# Introduction

Taiwan's overall first-quarter WLAN equipment shipments dropped 9% sequentially to 21.87 million units due to seasonal effects. However, not all WLAN segments shipped from Taiwan – network interface card (NIC), access point (AP), and router – were in decline. Both the volume and value of wireless router shipments were boosted in the first quarter by new functions and growing popularity as replacements for APs.

Overall WLAN shipments in the second quarter are expected to rise as demand is beginning to pick up particularly from the consumer electronics sector. The shipment volume will rebound 16% sequentially to a level similar to that of the fourth quarter.

**Chart 1: Taiwan WLAN equipment shipments, 1Q04-2Q05 (k units)**




| | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 | 2Q05 (e) |
|---|---|---|---|---|---|---|
| NIC shipment | 10,100 | 11,820 | 13,600 | 18,344 | 15,964 | 18,758 |
| AP shipment | 1,300 | 1,480 | 1,700 | 2,197 | 1,815 | 1,987 |
| SOHO router shipment | | | | 3,560 | 4,088 | 4,575 |
| NIC Q/Q growth | 1% | 17% | 15.1% | 34.9% | -13% | 17.5% |
| AP Q/Q growth | 1% | 13.8% | 14.9% | 29.2% | -17.4% | 9.5% |
| SOHO router Q/Q growth | | | | | 14.8% | 11.9% |

*Source: DigiTimes Research, April 2005.*

In the first quarter, the average selling price (ASP) for NICs was driven down US$2 to US$15 by lower prices for upstream chip supplies and large shipments of 802.11b chips for Sony's PSPs (PlayStation Portable). Prices for wireless routers remained stable, as new features, such as WMM (Wi-Fi multimedia), WPA2 (Wi-Fi Protocol Access 2), and pre-N solutions – boosted demand. The ASP for wireless routers, which was at about US$40 in the first quarter, is expected to drop to US$37-38 in the second quarter. Because of cheaper chip supplies, AP prices in the second quarter will also fall to US$35-56 from US$37 in the first.

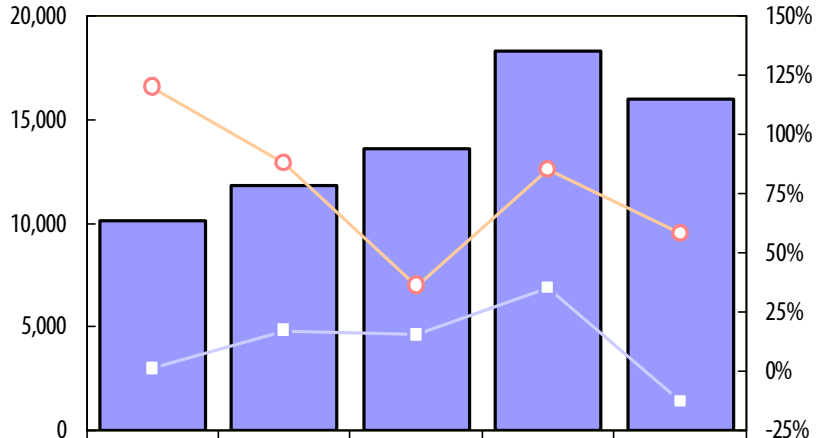
Fierce competition between Atheros and Broadcom in the 802.11g chip segment in 2004 resulted in a price war. The ASP for the segment in the first quarter of 2005 was US$6-9, and it will go down further to US$4-7 in the second.

# The first quarter

## NICs

Taiwan's first-quarter NIC shipments, which were chiefly for built-in notebook-use WLAN mini PCI cards, decreased 13% sequentially as demand from the IT sector dropped due to seasonal effects.

**Chart 2: Taiwan NIC shipments, 1Q04-1Q05 (k units)**

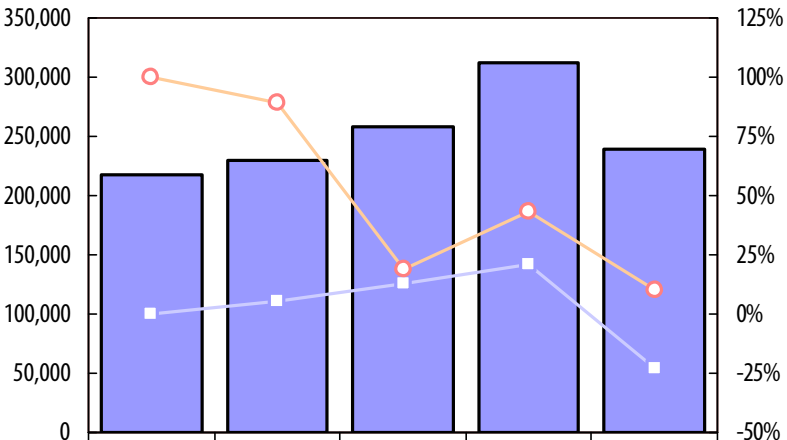



| | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 |
|---|---|---|---|---|---|
| Shipment | 10,100 | 11,820 | 13,600 | 18,344 | 15,964 |
| Q/Q growth | 1% | 17% | 15.1% | 34.9% | -13% |
| Y/Y growth | 120% | 88% | 36% | 85% | 58% |

*Source: DigiTimes Research, April 2005*

With decreases in both shipment volume and ASP, Taiwan's first-quarter NIC shipment value dropped 23% sequentially. On-year growth was just 10%.

**Chart 3: Taiwan NIC shipment value, 1Q04-1Q05 (k US$)**




| | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 |
|---|---|---|---|---|---|
| Shipment value | 217,800 | 229,544 | 258,400 | 312,094 | 239,454 |
| Q/Q growth | 0% | 5.4% | 12.6% | 20.8% | -23.3% |
| Y/Y growth | 100% | 89% | 19% | 43% | 10% |

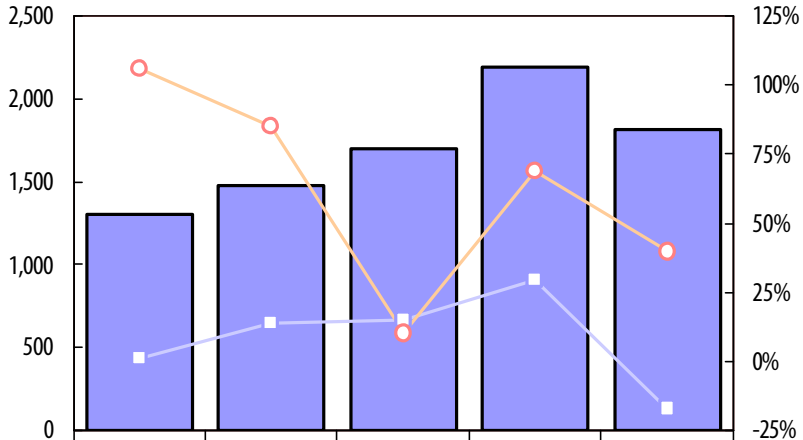
*Source: DigiTimes Research, April 2005*

To survive in a market dominated by brand-name vendors, Taiwan makers continued developing the higher-margin USB-interface NIC, and PCI Express (PCIe) solutions. They were also developing NICs embedded in compact flash (CF) or SDIO cards for niche markets outside the IT sector.

## APs

While the line separating APs and routers is blurring, the APs in the present discussion refer to devices with pure AP functions. Taiwan makers chiefly produced APs for small-to-medium-sized businesses, who like SOHO users, usually preferred multi-purpose routers also offering AP, firewall, and print server functions. With APs being replaced by routers, first-quarter AP shipments dropped 17% sequentially to 1.82 million units.

**Chart 4: Taiwan AP shipments, 1Q04-1Q05 (k units)**

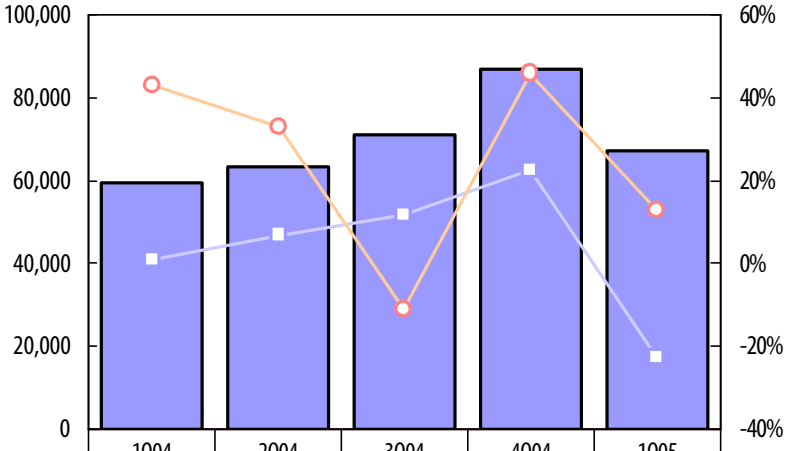



| | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 |
|---|---|---|---|---|---|
| Shipment | 1,300 | 1,480 | 1,700 | 2,197 | 1,815 |
| Q/Q growth | 1% | 13.8% | 14.9% | 29.2% | -17.4% |
| Y/Y growth | 106% | 85% | 10% | 69% | 40% |

*Source: DigiTimes Research, April 2005*

With both the volume and ASP falling, the first-quarter AP shipment value totaled US$67.14 million, down 23% sequentially.

**Chart 5: Taiwan AP shipment value, 1Q04-1Q05 (k US$)**



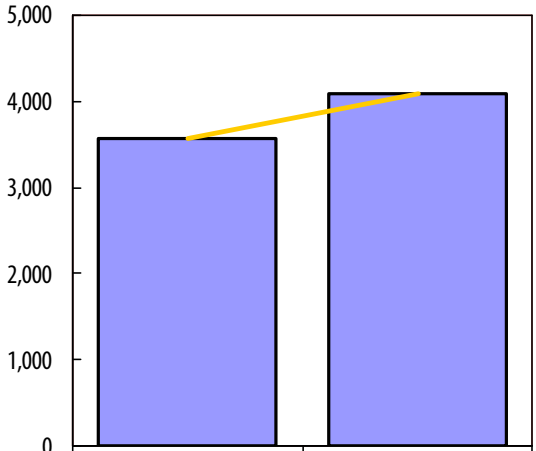

| | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 |
|---|---|---|---|---|---|
| Shipment value | 59,400 | 63,500 | 71,000 | 87,000 | 67,143 |
| Q/Q growth | 1% | 6.9% | 11.8% | 22.5% | -22.8% |
| Y/Y growth | 43% | 33% | -11% | 46% | 13% |

*Source: DigiTimes Research, April 2005*

## Routers

With routers gradually taking the place of APs, Taiwan's wireless router shipments – which were entirely for the SOHO market – jumped sequentially 15% in the first quarter to 4.1 million units.

**Chart 6: Taiwan wireless router shipments, 4Q04-1Q05 (k units)**

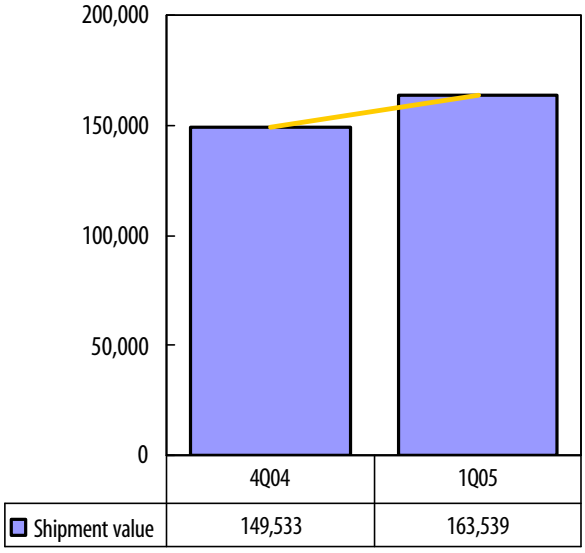



| | 4Q04 | 1Q05 |
|---|---|---|
| Shipment | 3,560 | 4,088 |

*Source: DigiTimes Research, April 2005*

Although the ASP for 802.11g chips dropped to US$7, the growing demand for routers based on the enhanced 802.11g, the 802.11a+g, and the pre-N standards managed to keep router prices stable. The first-quarter ASP for routers was US$40, down less than 5% sequentially. The router shipment value totaled US$164 million, up 9% from the previous quarter.

**Chart 7: Taiwan wireless router shipment value, 4Q04-1Q05 (k US$)**

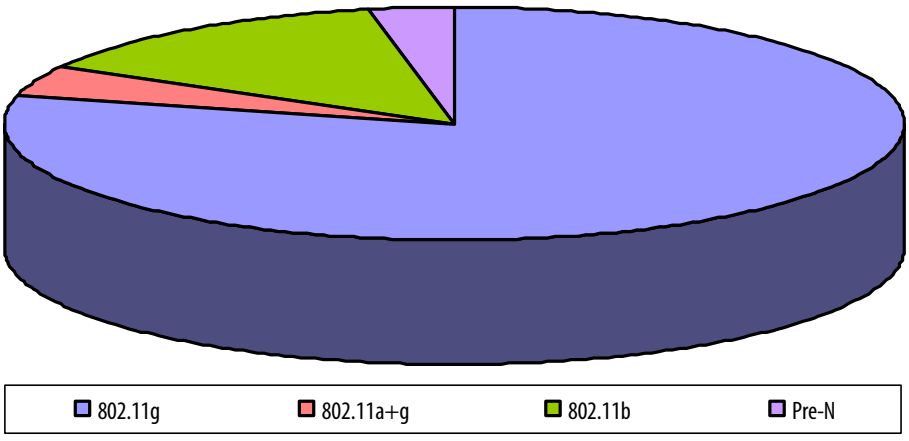



*Source: DigiTimes Research, April 2005*

## Standards

In the fourth quarter of 2004, 802.11a + g solutions still accounted for a big portion of Taiwan's WLAN shipments. However, the appearance of pre-N solutions, which also support the 802.11a + g standard, resulted in a 4% decline in the proportion of 802.11a + g shipments in the first-quarter. For 802.11b, its proportion stayed at 14% thanks to demand from Sony's PSPs. The top segment remained 802.11g.

**Chart 8: Taiwan WLAN equipment shipment breakdown by chip standard, 1Q05**



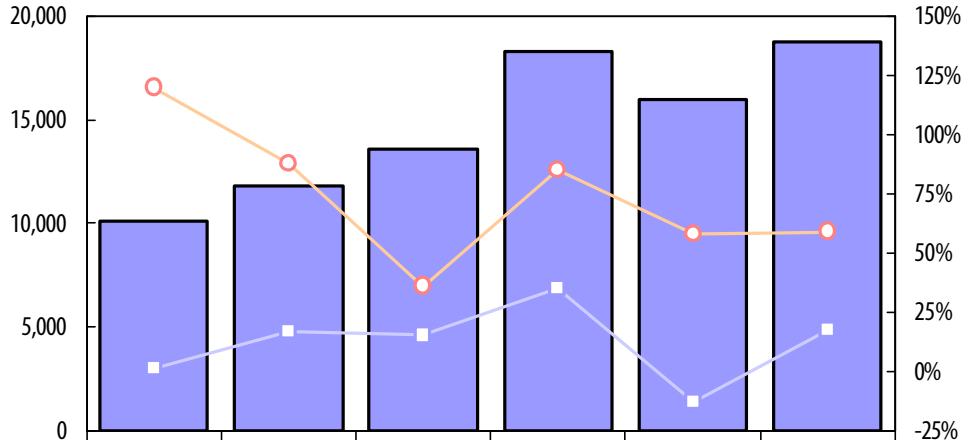

*Source: DigiTimes Research, April 2005*

# The second quarter

## NICs

NIC shipments in the second quarter are expected to increase on growing demand from game consoles, TV-use built-in modules, and other handheld devices. Wireless NIC shipments will reach 18.76 million units with a value totaling US$268 million.

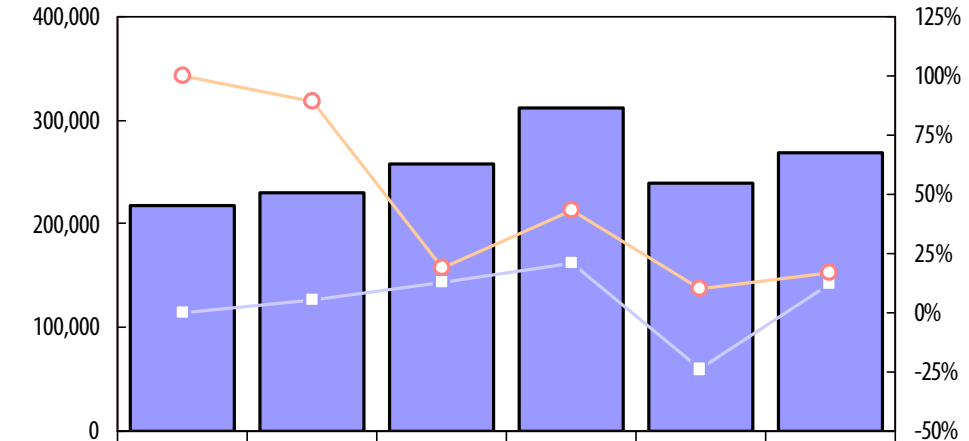
**Chart 9: Taiwan NIC shipments, 1Q04-2Q05 (k units)**




| | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 | 2Q05 (e) |
|---|---|---|---|---|---|---|
| Shipment | 10,100 | 11,820 | 13,600 | 18,344 | 15,964 | 18,758 |
| Q/Q growth | 1% | 17% | 15.1% | 34.9% | -13% | 17.5% |
| Y/Y growth | 120% | 88% | 36% | 85% | 58% | 59% |

*Source: DigiTimes Research, April 2005*

**Chart 10: Taiwan NIC shipment value, 1Q04-2Q05 (k US$)**



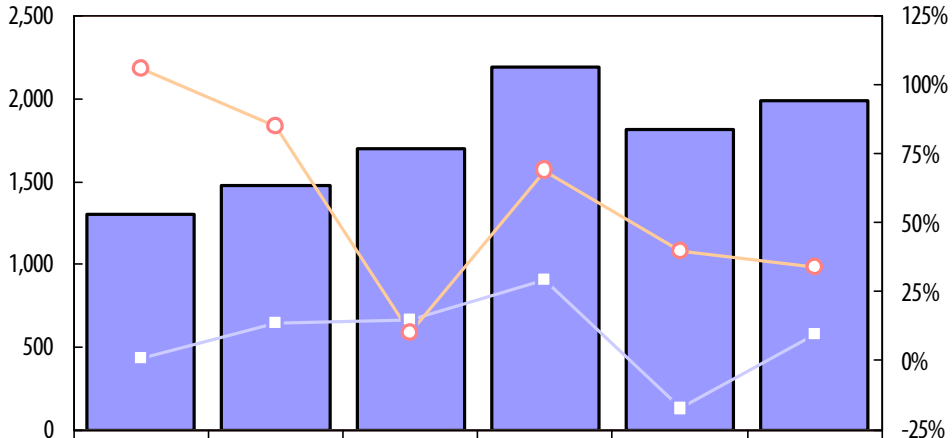

| | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 | 2Q05 (e) |
|---|---|---|---|---|---|---|
| Shipment value | 217,800 | 229,544 | 258,400 | 312,094 | 239,454 | 268,235 |
| Q/Q growth | 0% | 5.4% | 12.6% | 20.8% | -24.1% | 12% |
| Y/Y growth | 100% | 89% | 19% | 43% | 10% | 17% |

*Source: DigiTimes Research, April 2005*

# APs

Although the first-quarter AP shipments grew 40% on year, they represented an 18% sequential decline. However, demand is expected to pick up in the second quarter, bringing about sequential growth in shipment volume and value of 10% and 8% respectively. The ASP may drop US$1-2 from the first quarter's US$37.

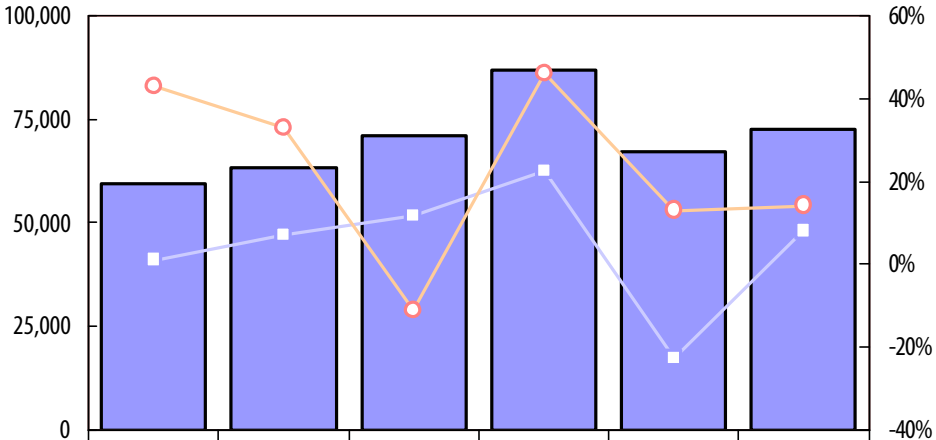
## Chart 11: Taiwan AP shipments, 1Q04-2Q05 (k units)




| | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 | 2Q05 (e) |
|---|---|---|---|---|---|---|
| Shipment | 1,300 | 1,480 | 1,700 | 2,197 | 1,815 | 1,987 |
| Q/Q growth | 1% | 13.8% | 14.9% | 29.2% | -17.4% | 9.5% |
| Y/Y growth | 106% | 85% | 10% | 69% | 40% | 34% |

*Source: DigiTimes Research, April 2005*

## Chart 12: Taiwan AP shipment value, 1Q04-2Q05 (k US$)




| | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 | 2Q05 |
|---|---|---|---|---|---|---|
| Shipment value | 59,400 | 63,500 | 71,000 | 87,000 | 67,143 | 72,544 |
| Q/Q growth | 1% | 6.9% | 11.8% | 22.5% | -22.8% | 8% |
| Y/Y growth | 43% | 33% | -11% | 46% | 13% | 14% |

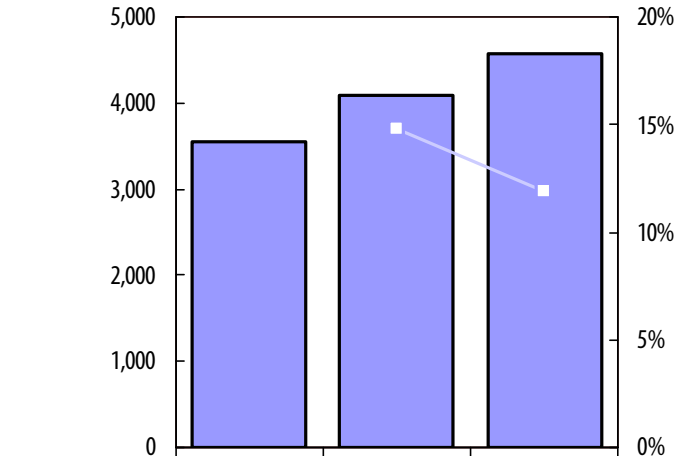
*Source: DigiTimes Research, April 2005*

## Routers

Upstream suppliers in Taiwan expect to begin volume producing 802.11a+g chips in the second quarter after receiving client approval for their samples. At the same time, a cost-down version of pre-N routers will hit the market. Taiwan WLAN equipment makers will step up efforts to develop the SOHO router market in the second quarter, with shipments increasing 12% sequentially to reach 4.56 million units.

The ASP for 802.11g chips, which has already dropped below US$7, has little room for further decline. The proportion of enhanced-802.11g, 802.11a+g and pre-N routers will increase, helping stabilize the ASP for routers in the second quarter. While the ASP for routers in the first quarter was US$40, it will be able to stand at US$37 in the second quarter, giving a 4% increase in total shipment value for the quarter.

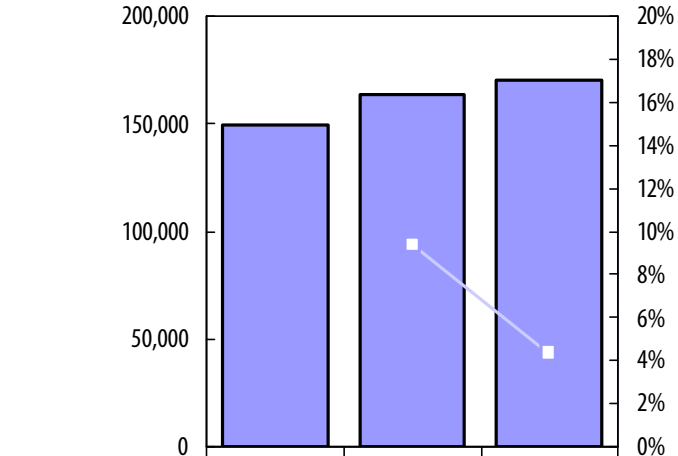
**Chart 13: Taiwan router shipments, 4Q04-2Q05 (k units)**




| | 4Q04 | 1Q05 | 2Q05 (e) |
|---|---|---|---|
| Shipment | 3,560 | 4,088 | 4,575 |
| Q/Q growth | | 14.8% | 11.9% |

*Source: DigiTimes Research, April 2005*

**Chart 14: Taiwan router shipment value, 4Q04-2Q05 (k US$)**




| | 4Q04 | 1Q05 | 2Q05 |
|---|---|---|---|
| Shipment value | 149,533 | 163,539 | 170,649 |
| Q/Q growth | | 9.4% | 4.3% |

*Source: DigiTimes Research, April 2005*