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Announcing Strata AirLink Wireless Telephone System

We are very pleased to announce wireless telephone capabilities for Strata DK Business Telephone Systems. Strata AirLink provides single-line wireless telephone capabilities for a wide variety of applications. The Strata AirLink Wireless telephone system is compatible with all Toshiba Strata DK systems and many non-Toshiba telephone systems.

Your customers receive the benefits of much greater mobility and range than with any cordless telephone product. You receive the benefits of having a cost-effective and efficient mobile communications product that puts you ahead of the competition.

Description

The Strata AirLink Wireless Telephone System is an adjunct system that can be added to almost any telephone system. Figure 1, on the following page, shows a system that consists of the following components:

- **Controllers**, called the Base Station Interface Adapter (BSIA), provide the interface between the Base Stations and the host telephone system. The external controller interfaces any manufacturer's host telephone system through standard analog station ports. For example, the BSIA connects to a Strata DK system through analog station ports on a RSTU2 card with each wireless handset assigned to a station port and a primary directory number.

  The basic controller supports eight wireless handsets. Each set of additional eight handsets requires an Analog Line Module (ALM) installed inside the controller. Each controller supports up to 32 wireless handsets and interfaces with a maximum of four RSTU cards. The Strata DK can support multiple Strata AirLink systems. The maximum number depends on the maximum Strata DK single-line port capacity.

- **Base Stations** function as antennas for the wireless handsets and are strategically placed in the facility to provide overlapping coverage to the handsets. Base Stations have radio transmitters and receivers that handle communication with the handsets. Up to two Base Stations are supported by each controller. The number of required Base Stations depends upon the desired area of coverage and the structure of the facility. Each Base Station can handle up to eight simultaneous conversations.

- **Wireless handsets** share the Base Stations located within the facility. Any Strata AirLink handset can use any Base Station. The handset's internal antenna, compact size, and light weight make it ideal for users to carry in a pocket or on a belt.

- **Base Station Test Stand** assists with the placement of Base Stations by radiating a frequency that can be used by the Strata AirLink handset to verify Bit Error Rate (frequency strength). The Base Station Test Stand can be moved around the installation site to determine optimum Base Station location and performance. It cannot be used as a Standard Base Station.

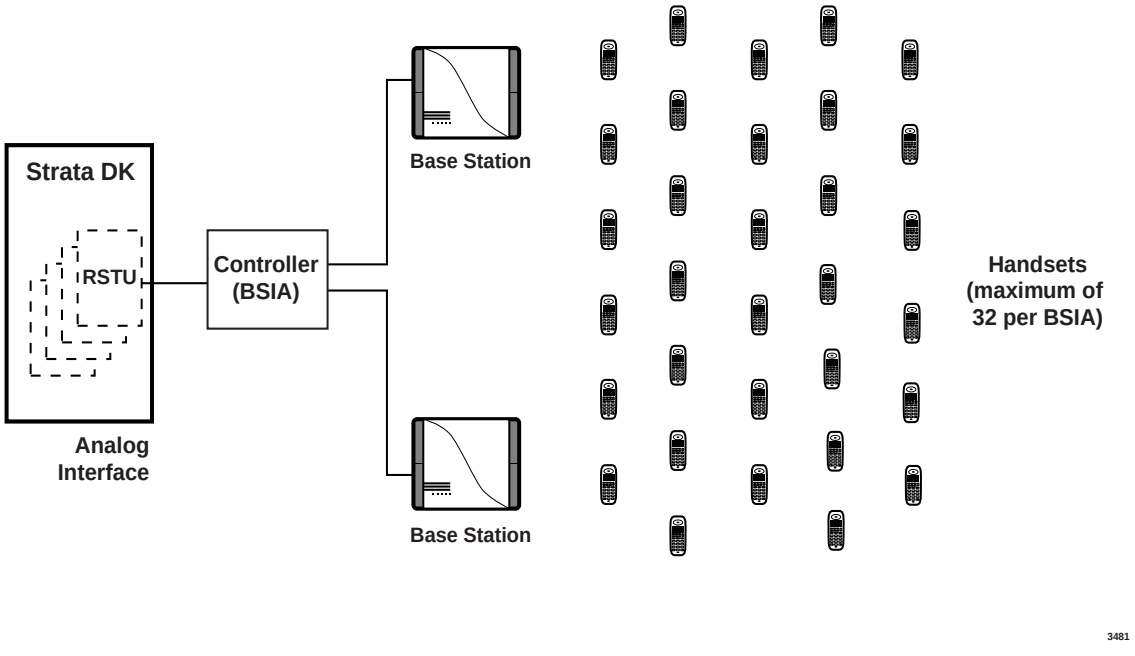

Figure 1 Phase 1 External Strata AirLink Wireless Telephone System Interface

The Strata AirLink Wireless Telephone System provides clients a high level of mobility within their business, whether it be an office, warehouse, or campus environment. Strategically placed Base Stations and a system controller provide a private cell structure that interfaces to the Strata DK system. Strata AirLink operates in the 1.9GHz Unlicensed Personal Communications Service (UPCS) bandwidth spectrum.

The Strata AirLink Base Stations are mounted on either a wall or ceiling and connected to the Base Station controller using twisted-pair wiring. Each Base Station provides a cell, or area of coverage, that reaches approximately up to 320,000 square feet, although actual coverage varies upon the building structure of the facility. This coverage area accommodates many office environments. Larger areas require multiple Base Stations to provide overlapping coverage for the entire facility.

Each Base Station supports up to eight simultaneous conversations. However, since individual Strata AirLink handsets are not typically used simultaneously, a wireless system can support more than eight handsets. The maximum number of Strata AirLink handsets per Base Station (and its corresponding controller) is 32.

The ability to “roam” between the Base Stations enables Strata AirLink users to move between multiple Base Station coverage areas to make and receive calls. The ability to “handoff” calls between Base Stations enables users to move between multiple Base Station coverage areas without loss of in-progress calls. Handoff only occurs between Base Stations connected to the same controller.

Multiple system access enables the Strata AirLink wireless handsets to store up to eight different system and station IDs and work with up to eight different telephone systems. For customers with multiple locations and telephone systems, the same Strata AirLink handset could be used in different locations, saving money and adding convenience.

The Strata AirLink Wireless Telephone System includes the Strata AirLink Wireless Manager administration software program which runs under Microsoft® Windows® and configures the wireless extensions and handset features on the controller. The software runs diagnostics enabling the System Administrator to check Base Station status and remove or restore service to Base Stations. It also reports alarm conditions and provides traffic statistics on Base Station channel usage throughout the system.

The Strata AirLink Wireless Telephone System will be introduced in two phases:

- **Phase 1** provides Strata AirLink as an adjunct system using the external BSIA connected to the host telephone system using analog station ports. This arrangement works with non-Toshiba telephone systems as well as Strata DK systems. Figure 1 shows a Strata DK system configuration. Non-Toshiba system connection would be similar.
- **Phase 2** provides an integrated solution specifically designed to interface the Strata AirLink wireless Base Stations directly with the Strata DK system through a digital PCB. This provides a lower-cost solution and higher functionality because the external controller is replaced by the Wireless Interface Unit (RWIU) PCB. The RWIU supports up to four Base Stations, effectively doubling system capacity and coverage per controller. Figure 2 shows this configuration. Multiple RWIU interfaces can be installed in a Strata DK system for increased capacity.

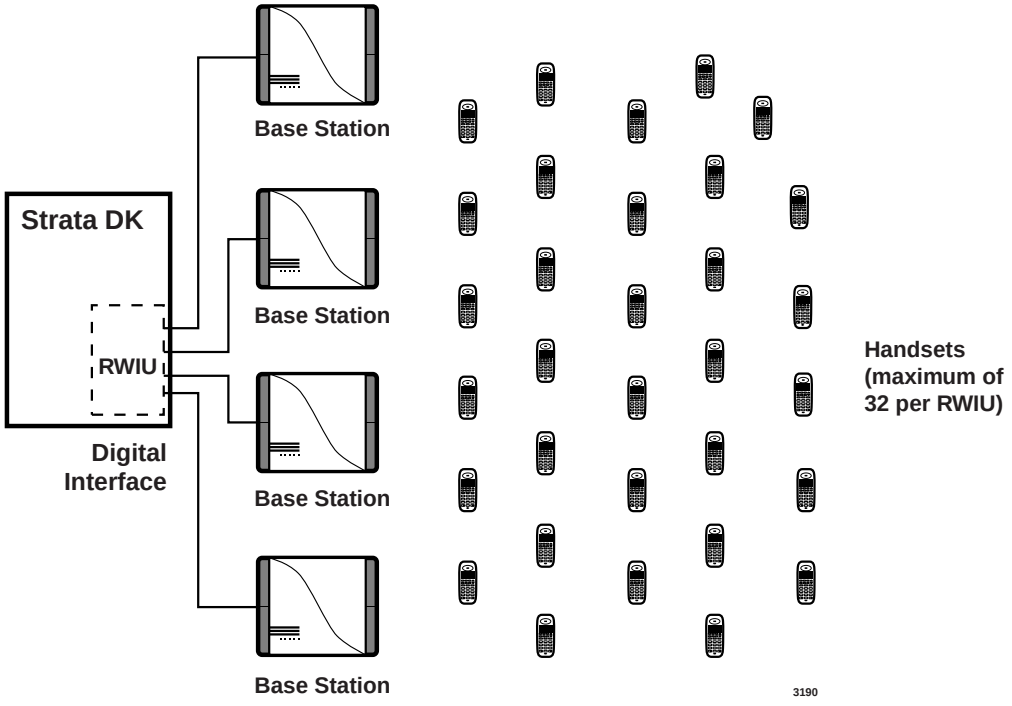

Figure 2 Phase 2 Integrated Strata AirLink Wireless Telephone System Interface

System Features

Table 1 has the Strata AirLink Wireless Telephone System capacities and maximum distances.

Table 1 System Capacities and Distances

Toshiba Strata DK		Non-Toshiba	
Capacities	**Maximum Distances**	**Capacities**	**Maximum Distances**
10 BSIA; 20 Base Stations assuming 32 analog ports per BSIA	1,800 feet using line power from the controller[1]	48 BSIA; 96 Base Stations assuming 32 ports/BSIA	1,800 feet using line power from the controller[1]
328 handsets on DK424	3,600 feet using local power[1]	1,535 handsets maximum	3,600 feet using local power[1]

[1] Maximum distance between the Base Station and controller using two twisted-pair, Category 5 continuous 24 AWG wiring.

Handset Features

- 8 types of ringing
- 3 ringing volumes, plus silent
- Call volume control
- 4 hours of talk time
- 40 hours of standby time
- Headset jack
- 70 Speed Dial number storage
- Programmable wait

LCD Features

- Contrast control
- 2 lines, 9 characters per line
- Scroll
- Low battery warning
- Menu operation
- Current time and date
- Call duration display

LCD Icons

- Off-hook or ringing
- Base Station lock
- Signal strength
- Battery strength
- Alphanumeric mode
- System busy
- Mute indication
- Message Waiting (Phase 2 only)

Dialing Options

- Pre-dial cellular type
- Post-dial cordless type
- Speed Dial access
- Key pad beeper
- Tonal feedback at buttons (on/off option)
- Dial by name or code

Strata DK Supported Features

- Call Forward
- Call Waiting
- Call Park
- Redial
- Auto Answer
- Camp-on
- Conference and Transfer
- Call Hold

UTAM, Inc. Requirements

When an authorized Toshiba dealer places an order for the Strata AirLink system, a completed Frequency Coordination Service Request (FCSR) form must be submitted. There is a copy of the FCSR on Page 9, and Table 2 describes each field of the form. It is also available on FYI. The completed form is forwarded to the Primary Frequency Coordinator within Toshiba for processing with UTAM.

The Primary Frequency Coordinator checks the installation zone (Zone 1 or Zone 2 county) with UTAM. For those installations in a:

- Zone 1 county, UTAM is not involved.
- Zone 2 county, UTAM coordination is required and a charge item.

A Zone 2 installation involves ensuring that there will be no conflicts to or from existing microwave systems in the area by a frequency coordination service. This process can take up to 30 days to complete and is coordinated by Toshiba.

When bidding Strata AirLink, contact the Toshiba Strata AirLink Activation Desk at (949) 598-4980 to find out if the target installation county is in a Zone 1 or Zone 2 area. As UTAM clears counties, which is an ongoing process, the information is updated regularly; and, Toshiba can assist its dealers by giving out this advanced information.

Important! *All Strata AirLink orders must have an FCSR attached for processing (see FCSR form on Page 9). Please follow the instructions in Table 2 when completing the form. Incomplete FCSRs will be returned and may delay ordering.*

Selling Advantages

The strengths of Strata AirLink that provide many selling advantages over the competition are:

- **More convenience and flexibility** – Strata DK's multiple DN capabilities provide convenience and flexibility to users of both wireless handsets and desk telephones. The wireless DN can appear on the desk telephone so calls can be set to ring both the wireless handsets and wired desk telephones simultaneously.
- **Better security** – Strata AirLink Wireless telephone system provides better security than most wireless systems by using a proprietary voice scrambling algorithm. This ensures that conversations are private and inaccessible to electronic eavesdropping.
- **Multiple system access** – Multiple system access enables Strata AirLink wireless handsets to work with up to eight different telephone systems. For customers with multiple locations and telephone systems, the same handsets can be used in different locations saving money and adding convenience.
- **Comprehensive solutions** – Complemented by the digital cordless telephone, 2000-series digital desk telephones, PC Digital Telephone, PC Attendant Console, DSS Console, Add-On Module, ACD, Distributed Hunt, Auto Attendant, and Voice Mail, you can offer the most comprehensive call answering solutions available today.

Product Line Strategy

The Strata AirLink Wireless Telephone represents an addition to the Strata DK product line. It does not replace the current cordless digital telephone, but complements it in applications requiring greater range, mobility, and coverage than a cordless telephone can provide.

The Strata AirLink Wireless Telephone System Phase 1 adjunct product is intended to be used with Strata DK telephone systems. However, it is also compatible with other manufacturer's telephone systems through standard analog interface.

The Strata Airlink Phase 1 external interface solution is designed to work with existing Strata DK telephone systems as an interim approach until the Phase 2 integrated product is available. The Phase 1 product will continue to be offered, even after release of the Strata AirLink Phase 2 product, for use with non-Toshiba telephone systems and your installed base of older Toshiba telephone systems that do not integrate with the Phase 2 product.

Compatibility

The Phase 1 Strata AirLink Wireless Telephone System is compatible with all Strata DK business telephone systems, older Toshiba telephone systems, and non-Toshiba telephone systems through standard analog station ports.

The Phase 2 Strata AirLink Wireless Telephone System is compatible with all Strata DK business telephone systems that support digital station ports. This includes Strata DK424, DK40, DK280, DK16e, DK16, and DK24/56/96 Release 3 and 4 systems.

Training

Both technical and sales training curriculums for the Strata DK are being updated to include information on the new Strata Airlink Wireless Telephone System.

A computer-based training course will be released on August 14, 1998, for the Strata AirLink product. This self-study course will cover hardware configuration, installation, testing, and programming and is highly recommended for sales personnel as well as installation technicians. Two copies of the CD-ROM disk will be sent to every dealer's office of record—one copy for the technical staff and the other for the sales staff.

Strata AirLink programming will be incorporated into the five-day classroom Strata DK Basic Certification course. Additionally, a two-day classroom course has been developed for the wireless product that adds Base Station placement and coverage area verification techniques to the basic information covered in the self-study course. The classroom courses are scheduled as follows:

- Irvine, CA: September 3 and 4
- Dallas, TX: October 26 and 27
- Parsippany, NJ: November 9 and 10

Register by calling Marilyn Goldin, (949) 583-3470.

Pricing

The Strata AirLink Wireless Telephone System is very cost effective. Its price is targeted below most similar competing products. See the Strata AirLink Price Supplement for all the details.

Phase 2 pricing will be available at a later date.

Documentation

Existing Strata DK documentation is being updated to include the new Strata AirLink Wireless Telephone equipment and will be available by product release.

- A Strata AirLink Wireless Telephone brochure has been created and is enclosed with the launch package.
- The *Strata DK Features Description Manual* is being updated to include the new Strata AirLink Wireless Telephone System and will soon be available for Internet download.
- A *Strata AirLink Wireless Handset User Guide* will be available by product release.
- The *Strata AirLink Wireless System Installation Guide* will be available by product release.

Availability

The Phase 1 Strata AirLink Wireless Telephone System is scheduled for availability in August, 1998. You can place orders beginning now.

The Phase 2 product is scheduled for introduction in the fourth quarter of 1998. Watch for additional information in the near future.

Completing the FCSR

The FCSR must be completed by the selling dealer or Toshiba National Account Representative prior to the installation of the Strata AirLink wireless system. Table 2 describes the fields of the FCSR (see Page 9) that have an extra bold outline. These fields are required for order processing.

Table 2 FCSR Fields Required to Process the Order

Part Number		Description
Part I Installation Status	Type of installation	Indicate the type of installation - new/permanent or temporary, reiteration, removal, relocation.
	If temporary, proposed activation date	If a temporary installation, indicate the permanent activation date.
	Removal date	If a temporary installation, indicate the removal date.
Part II Site Information	County of installation	Must be accurate for Zone 1 or 2 determination.
	Zone 1 or 2	For Toshiba use.
	FIPS number	For Toshiba use.
	Customer	Customer name.
	Dealer	Dealer name.
	Address 1	Exact street address of the installation site is required. A partial address is unacceptable.
	Address 2	Exact street address of the installation site is required. A partial address is unacceptable.
	City/State/Zip	City, state, and zip code of the installation site.
	Latitude	For Toshiba use.
	Longitude	For Toshiba use.
	Dealer Contact	Dealer contact name.
	Telephone/FAX	Dealer contact telephone and FAX numbers.
	Installation date	Date the installation will occur at the customer's site.
Site III Equipment Information	Number of systems	Number of systems to be installed. 1 system includes 1 BSIA and 1 or 2 Base Stations.
	Number of fixed units - inside	Number of Base Stations installed inside.
	Outside	Number of Base Stations installed outside.
	Number of mobile units	Number of handsets activated for the system.
	Maximum height (in./ft.) of floor or fixed units - inside	Height of ceiling of installation site where Base Stations are installed if single floor; floor number (e.g., fourth floor) if installed in multi-floor building.
	Outside	Height of Base Station installation from ground if installed outside of building.

Frequency Coordination Service Request

Part 1 - Installation Status	
Type of Request (circle one): New-Permanent/ New-Temporary/ Reiteration/ Removal/ Relocation	
PFC ID Number (if not a new site):	UTAM Site Number:
If Temporary, Proposed Activation Date:	Removal Date:

Part 2 - Site Information			
UTAM Subscriber ID Number: Toshiba		Subscriber Company Name: Toshiba	
County of Installation:		Zone 1 or 2:	FIPS Number:
Customer:		Dealer:	
Address 1:		Dealer Contact:	
Address 2:		Phone:	Fax:
City:			
State:	Zip Code:	Latitude:	
Contact:		Longitude:	
Phone #:	Fax #:	Installation Date:	

Part 3 - Equipment Information			
UTAM ID Number - System:		Number of Systems:	
Band - *Isochronous*	Power/Device (mW) -	Fixed: *40 mW*	Mobile: *5 mW*
Number of Fixed Units - Inside:		Outside:	Number of Mobile Units:
Maximum Height (in./ft.) or Floor of Fixed Units (ft.) - Inside:			Outside:
Building Loss (in dB): *Unknown*		Maximum Horizontal Distance: *2,000 ft. (default)*	

Part 4 - Approvals	
	Phone #:
Name/Signature of Company Representative/Coordinator	Fax #:
Title:	Date:
UTAM Member Contact (If different from above):	

Note The fields that are required for processing have an extra bold outline.