TECH ■ TALK

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Where Are All The Good Techs?

Do you have one of those rare species of technicians? You know the ones that I mean. You can send them out on their own without worrying about what he/she is going to mess up this time?

We are constantly hearing complaints from our dealers about how they can't find any really good techs.

Even though they are willing to pay a good salary with good benefits and training, they still can't find the right person. Where are they hiding?

We had one dealer go as far as offering to buy out other small interconnects in his area in order to get some good techs.

These days, if you can find a tech that has most or all of the following attributes, you should do anything you can to hire them, for they are one of a dying breed.

A good tech is one who:

......can listen to the description of a problem from any level without jumping to a conclusion until all of the facts are clear.

......can effectively communicate with people on their own level, and define technical terms to get the message across without demeaning the individual.

.....can analytically, systematically, and logically follow a process to determine the source of the problems.

.....is eager to learn new things and doesn't get the urge to say, "that's not my job" when asked to perform above and beyond their normal responsibilities.

.....can understand what the phrase "the customer is right" actually means and can present these feelings without patronizing the "customer".

.....can effectively identify more than one method of reaching an objective and assess the "pros" and "cons" of each method, while being able to present all the data to any co-worker from the maintenance person to the sales rep or the president of the company.

.....has the ability to sort out what is important and what is urgent and then make a value judgement of what task needs to be accomplished first.

.....is not afraid to say, "hey, I don't know how to do that. Can you help me? Can you show me how..."

.....is able to take a project with a scheduled completion time and work towards completion without any direct supervision. At the same time someone who is able to ask for help, an explanation, or the needed tools.

.....would understand that sometimes, telecom projects, such as new installs and cut-overs need to happen out of "normal business hours" and sometimes require commitment through the "third shift".

.....Overall, is a self starting, responsible person who is eager to learn, accepts challenges, is not afraid to admit to mistakes and learn from them, will ask for help when help is needed, and has a logical mind to sort through the troubleshooting process effectively.

If you should happen to come across one of these rare technicians, please do everything in your power to keep him or her. They might just end up being the most valuable asset that your company has.

Last but not least, this special individual should understand the simply concept that.....A brand new cable may not have been bad yesterday, but it could be bad today.

Tools Of The Trade Sales Promo

We are pleased to announce the start of an exciting new promotion: "Tools of the Trade". Purchase any combination of 5 Panasonic PBX Systems from among the eligible models(KX-T30810, KX-T61610, KX-T123211D, KX-TD308, KX-TD816 and KX-TD1232), from 8/1/98 through 10/31/98 and get a FREE professional-quality cordless drill and driver kit from panasonic (EY6930FQKW).*

The Panasonic Cordless Drill is the perfect tool for the professional telephone installer. It features 15.6 volt operation, 30 minute quick-charge batteries, keyless chuck,2-speed reversible operation, 5-stage adjustable clutch and a hammer mode for drilling into the toughest surfaces. In addition to the drill, the kit includes two batteries, a universal charger and a sturdy convenient carrying case. All told, the EY6930FQKW kit represents a $450 retail value.

Contact your distributor for more details.   *Different model shown.

FREE UPGRADES

Just Kidding..... I just wanted to make sure that you read this page!

Sorry, we aren't giving away any free upgrades ...
But we are
giving away some very valuable information!

All of our Eprom upgrades are available from VND, Inc. at 888-201-4030.
They also have the latest EIA programming tools for the KX-TD308, KX-TD816,and KX-TD1232 systems, which are also available on our BBS at 201-271-3346.

Any KX-TD1232 with a serial number starting with a 4J, 4K, 4L, 5A or 5B are not field upgradable. Those systems, plus any systems that are older than -1 and have an "A"as the fourth digit in the serial number will have to be sent to our Atlanta Repair Center (770-518-6469) to be upgraded.

The only difference between a -1 and a -2 is that we went from an 8Mhz CPU to a 12Mhz CPU.
-1 systems cannot be upgraded to -2.
-2 systems cannot be downgraded to -1.

Which Version Do I Have In My Digital System?

You can retrieve the software level of your Digital system by going into program 116 or via the laptop by going into system and then version.

KX-TD1232

If the version reads ....Then you have

P101Qxxxxxx ......1st production version
P101Yxxxxxx ......1st version with NANP
P101Axxxxxx ......1st version with DPITS
P101Dxxxxxx ......same as P101Axxxxxx
P101Exxxxxx ......1st production of -1
P101FxxxxxA ......1st version of -1 with CTI
P231Qxxxxxx ......1st production of -2
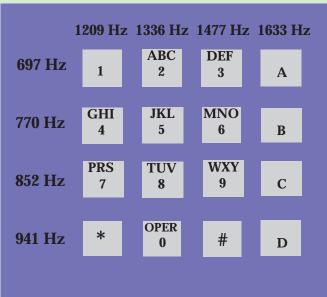P231GxxxxxA ......1st version of -2 with CTI

KX-TD816

If the version reads ....Then you have

P051IxxxxxxA ......1st production version
P401AxxxxxxA......1st production version of -1
P401BxxxxxxA ......1st version -1 with CTI
P301CxxxxxxA......1st version -2 with CTI

A Brief Summary Of DTMF

DTMF (Dual-Tone-Multiple-Frequency) uses a collection of 8 different frequencies that are paired together to produce 16 different Tones. These paired frequencies are listed in the table to the right. The modern telephone uses 12 of these tones. (0-9, * and #) which can be produced by hitting the appropriate button on the "Key Pad". The other four tones (A, B, C, & D) can be produced electronically and do not appear on the conventional telephone. These four tones are sometimes used by auxiliary equipment such as voicemail. Each key that you press generates two tones. One from the high frequency group and one from the low frequency group.

Generating these tones is easy, decoding them correctly is the hard part. Early tone-generating circuits were cumbersome, unreliable and were prone to drift. Today a single IC chip can accurately process and decode all 16 combinations of DTMF. DTMF tones can be tested by using a good Digit Grabber or a Digital VoltMeter with a Hz setting. By simultaneously pressing any two digits in any row or column on the keypad you should get the correct value as stated in the table.
(Example: pressing the "1" & "3" at the same time should give a reading of 697 Hz. Pressing the "2" & "8" at the same time should give a reading of 1336 Hz.) DTMF tones that fall within 2% (below or above) of the numbers listed above are good. Readings outside that range are no good and should be corrected by your local carrier. Variations in loop current, Db loss or other line specifications can cause DTMF related problems, such as mis-dialed or mis-interpreted digits.

	1209 Hz	1336 Hz	1477 Hz	1633 Hz
697 Hz	1	ABC 2	DEF 3	A
770 Hz	GHI 4	JKL 5	MNO 6	B
852 Hz	PRS 7	TUV 8	WXY 9	C
941 Hz	*	OPER 0	#	D

TRUNKS 101

According to Newton's Telecom Dictionary, the word "Trunk" is defined as ..."A communication line between two switching systems. The term switching systems typically includes equipment in a central office and PBXs"

There are many types of Trunks available today, such as loop start, ground start, E & M (Tie), DID, and T-1. Loop start trunks are the most commonly used. In the following paragraphs we have a brief summary of each type of trunk.

Loop Start Trunks

The loop start trunk is the original and simplest trunk. The on-hook and off-hook states are represented by the absence or presence of current in the loop.

One major limitation with the loop start trunk is *glare. (The simultaneous seizure of a circuit by two parties.)* For example, with the loop start trunk a phone or telephone system cannot tell that an incoming call is about to occur until it actually receives the incoming ring. If a user goes off-hook at just the instant that the call starts ringing, the user might get connected to the incoming call.

Another problem with loop start is the inability for the PBX to recognize when the distant end disconnects, (supervision) since it only sees the presence or absence of loop current.

All of our systems will accept loop start trunks.

Ground Start Trunks

Ground start was created to improve the start signaling (handshaking) between switches. It drastically decreases the possibility of glare and improves on the disconnect supervision. Just like the loop start, the ground start trunk consists of two wires, Tip & Ring.

To initiate a call, the PBX must put a momentary ground on the ring lead. The CO (Central Office) detects this and connects ground to the Tip lead and applies dial tone. When the PBX detects the ground, it places a low resistive load across the Tip & Ring leads and removes the ground from the ring lead. At this point the PBX has dial tone and the CO is ready to receive digits.

For the PBX to receive a call, a similar type of handshaking episode occurs. At the termination of the call, the PBX detects the removal of the ground and reacts by positively disconnecting the line.

*** systems with Ground Start trunks demand a very good earth ground***

E & M (Tie) Trunks

These trunks basically tie two switches together and are used for many different applications. The two-wire E&M trunk has four wires and the four-wire E&M circuit actually has six wires.

These extra wires are used to supply a path for signals which can be recognized by the two switches with a very low rate of errors. The different signals sent across these "E&M" leads range from requesting dial tone to positive answer and disconnect supervision.

Outgoing signaling is done on the "M" lead, while incoming signaling is done on the "E" lead. When the E&M trunk runs between two PBXs, the "M" lead of one is connected to the "E" lead of the other.

There are usually three different types of starting arrangements offered. They are ... Wink start, Immediate start, and sometimes Dial Tone start.

DID Trunks

The DID (Direct Inward Dialing) trunk is a one way incoming trunk from the Central Office. It allows an outside caller to directly reach an extension of the PBX without going through the attendant.

The PBX supplies the necessary "Talk-Battery". The CO starts the connection process by closing the loop on the DID circuit, the PBX sees loop current flow and sends a wink to the CO by momently reversing the polarity of the talk-battery. The CO then responds by sending the last 3 or 4 digits of the dialed number to the PBX. The PBX processes those digits and routes the call to the correct extension.

When the call is answered, the PBX must return answer supervision. Answer supervision is sent by reversing the talk-battery again. The battery stays in this state until the end of the call, when it reverses again sending a positive disconnect signal to the CO. The CO will then disconnect the trunk.

DID trunks are ordered in blocks of 10 - 100 numbers. *Even though you might have a block of 60 or more, you might only need 5-10 actual "Talk Paths". There is no need for a DID trunk for each extension.

Digital T-1 Trunks

Introduced by AT&T in the early 1960's, the Digital or T-1 trunk uses the latest in Multiplexing Technology to combine 24 channels of information onto one channel delivered to the PBX by only four wires. Two for Transmit and two for Receive.

The 24 channels can usually be configured separately to emulate any of the above trunk types. The standard T-1 trunk has a transmission rate of 1.544 Mbit/Sec.

A "Channel -Bank" is sometimes required to break-out the 24 channels when a T-1 card is not available in the PBX.

We hope that we helped you to better understand the different trunk options available. In future issues of TECH TALK, we will explore some new technology, like ISDN trunks.

We will also go through how these different types of trunks are used by the many different Panasonic Phone Systems .

APPLICATION ALLEY

Can we take the heat Or what?

One of our dealers, recently called us here at Tech Support with this story...........

............One of my customers called me last week to explain that a major part of his office was destroyed in a fire the night before. My customer claimed that the Panasonic phone system did not survive the exploding flames and intense heat of the midnight fire. The customer set up plans for temporary office space in the suite next door, and they needed a new system with a temporary setup. Being that they are a good customer of mine, I promptly packed up my spare 616 and got my butt(set) out there ASAP. When I got there I took a look at the burntout area. It was bad. Luckily, nobody was hurt! After hacking and forging a path through the wreckage I came upon the phone system, still up on the wall. The plastic was partially melted and warped, it smelled like burnt toast. I took it and threw it in the truck. The amount of water that came out of it would fill up your kitchen sink. When I returned to my shop, I placed it on the bench.

I finally looked at it this morning, a week later. It looked pretty dry, so I figured I would plug it in. I was shocked at what I saw. It worked!! This afternoon I used it to make a sale by showing how it survived that disaster.

Thanks for that extra Hot story

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I DIDN'T KNOW THAT HELICOPTERS COME EQUIPPED WITH A PANASONIC KX-TD7890

Another one of our dealers writes.........I recently installed a Dual Panasonic Digital 1232-2 with a TVS200 Voice mail system, into a huge mansion. The owner of the house is a CEO of a major company and a licensed Helicopter Pilot. Yes... he has his own copter which he flies back and forth to work every day. He is known to work late sometimes. Before he had the new digital system installed, he had to radio ahead and hope that there was someone home to turn on the landing lights around the heliport. Now he carries a KX-TD7890 in the helicopter. When he gets close enough, he picks up the KX-TD7890, gets ICM dial tone, and dials the code to activate Door Opener #4. Instead of wiring Door opener #4 to a door, we connected it up to a relay that is attached to a timer that turns on the landing lights. The five second closure that you get across the two contacts can be used to activate many other things. Just use your imagination.

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DO-IT-YOURSELFERS BEWARE

I recently was at my doctor's office and he had this very funny story to tell me ....

Wanting to put an extension into his bedroom he went up to the attic and found the crawl space above the bedroom. After running the cable up from the basement and across the attic he was ready to snake it down the bedroom wall. He gracefully maneuvered himself into the crawl space. The space was so small that he only had about 6 inches above his head.

All of a sudden, his wife yells up to him that dinner is ready. Without thinking he quickly lifted his head, hitting the roofing nail above him. In reaction to the sudden pain he moved his head down, hitting another nail with his chin, thus sending his head upwards again, into the same roofing nail. Naturally his head immediately went back down, hitting his chin again. Within 2 seconds he had 4 holes in him. He couldn't decide whether to laugh or cry.

WHAT IS

What is a Ring Group?

A Ring Group is a set of extensions which will simultaneously ring when a call is directed to the Floating Number for that group.

Up to 8 ring groups can be created with any number of extensions belonging to the group.

An extension user may temporarily remove themselves from the Ring Group by utilizing the Log-in/Log-out function.

An extension can only belong to one Ring Group. Refer to your manuals for more details.

What is a Phantom Extension?

A Phantom Extension is an extension that exists in the program but does not use an actual hardware port.

A Phantom extension button can be assigned to one or more telephone. When an CO or intercom call is directed to the Phantom extension, any telephone with the Phantom button will ring.

Up to 128 Phantom extensions can be assigned.

********BONUS TIP*******

You cannot VTR a call to a phantom extension since there is no actual hardware port assigned to it.

What is Walking Class of Service?

This feature allows a user with the special Walking Class of Service password to temporarily override the Class of Service of another extension with the Class of Service assigned to their own extension.

One password can be assigned.

ATTENTION ALL DEALERS

There are now two new modems that have been approved for use with our systems. Download a complete and updated list from our BBS at 201-271-3346

The programming tool for the KX-TD308 has just been approved and released.

You can download the file "E308a.exe" from our BBS, or you can purchase a copy from VND, Inc. at 888-201-4030, part number KXA-371.

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