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The New Smartwatch Communicator

The most fascinating wearable tech that I saw at this year's CES was the Samsung Galaxy Gear smartwatch. After spending a few minutes playing with the smartwatch at a CES press event, I told a representative from Samsung that my teenage readers would definitely find this device intriguing. The watch could do so many different things that I felt like I was playing with a working prop from a James Bond movie.



Photo 1—The Samsung Note 3 can process your apps, texts, and phone calls to the Gear smartwatch.

Evidently my words struck a chord and after a number of emails back and forth they sent me a Gear smartwatch and a Samsung Note 3 smartphone so I could see if playing with the newest and most technologically advanced Samsung products for a few weeks would enhance or dampen my opinion. (See Photo 1.)

When this column went to press, the Note 3 was not only Samsung's most advanced smartphone, it was also the only smartphone capable of linking to the Samsung Gear smartwatch. The smartwatch has a 1.63" color touch screen and 4 GB of

internal memory. Fig. 1 shows where Samsung hid most of the gear on their Gear smartwatch. It uses Bluetooth for two-way communication with its Note 3 linked smartphone.

The photos and 15-second videos that you shoot can be quickly sent to Samsung's linked smartphone. If you want, you can also view the photos and video on the watch. Photo 2 was taken using the watch's camera.

You can use the watch to perform many two-way communication tasks. From its touch screen, you can answer or initiate phone calls and send and receive text messages. You can see who is sending you emails and, if you are crazy, actually read them on the tiny screen.

You obviously can't type messages into the smartwatch, but you can select a preset message to send, or dictate to the watch what

you want your message to say. The voice recognition software in the watch is excellent and it turned my spoken words into perfectly printed text.

You can tell the watch to set alarms and add appointments to your calendar. You use the Gear Manager on the smartphone to determine what apps you want to use and what



Photo 2—Smartwatch photography. The insert shows a photo taken by the watch on the Gear screen. (This photo was taken during a nor'easter that hit the East Coast in February.)

notifications you want to receive on the Gear.

The microphone on the watch is quite good, so you don't have to be talking directly into the watch for it to pick up what you are saying. In a reasonably quiet environment, you can look like all the other crazy people walking around hearing voices and talking to themselves while you talk to a friend with your arms at your side. The watch works extremely well for hands-free phone calling. It is much less noticeable to others than Google Glass or a piece of hardware hanging out of your ear.

I used the watch's pedometer



Fig. 1—Details on where Samsung hid the camera and other gear needed for two-way communication on their new smartwatch.

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Photo 3—You can control your music directly on the screen of this smartwatch.

and media controller together during my workouts at the gym. The media controller let me move forward and back through my music playlist and also control the volume on individual songs while the smartphone was safely tucked away in my pocket. (See Photo 3.)

To create this initial link you need to first fully charge the Gear, then turn it on. It is smart enough to know that it has never been connected to a smartphone, and it will automatically switch to connection mode. The process is almost the same as connecting any Bluetooth device to a smartphone. You need to turn on Bluetooth on your smartphone and make it visible. You also need to turn on the smartphone's Near Field Communication (NFC).

At this point, things get interesting. The NFC tag needed to connect the phone is in the charging cradle, not in the phone. You have to tap the back of the charging cradle to the back of your smartphone. (See Fig.

2.) You then select the Samsung Galaxy Gear from the available device list on your phone and also tap accept on the Gear smartwatch screen. During this linking operation, the Samsung Gear smartwatch is turned on but not in its charging cradle.

When Apple released the first iPhone in 2007, they started a communication revolution. Even though other smartphone manufacturers now produce products that can go toe to toe with an iPhone or iPad, most teenagers and many adults still view Apple as the only true innovator with the must-have products.

Competition is great for consumers and, at least for the moment, Samsung is the first to have a smartwatch that can perform all the tasks described in this column. If rumors in the press prove true, the Apple iWatch and a new iPhone 6 will both be out and ready to compete with these Samsung products by the time this issue of *Tech Directions* reaches you via snail mail. Time will tell if Apple can be dethroned as the innovation leader for handheld communication products.

Recalling the Facts

1. What do you see as the positive and negative sides of this example of wearable technology?

2. Imagine Samsung or Apple asking you and your friends to redesign the smartwatch. What would your design team change and what features would you add to the watch? You have a million-dollar budget, so no idea is too wild or too expensive—have fun and get creative! 🎯

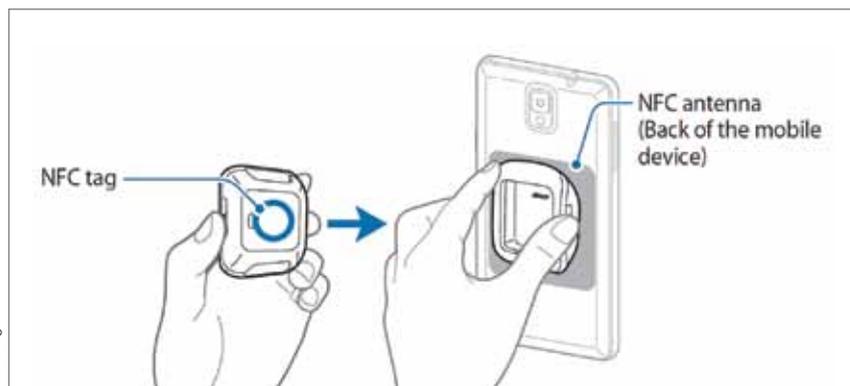


Fig. 2—The NFC tag resides on the recharging watch cradle. Near-field communication is used to link the watch to the phone.

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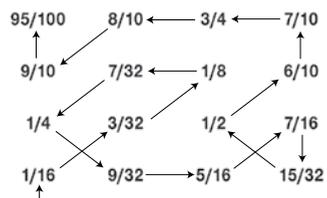
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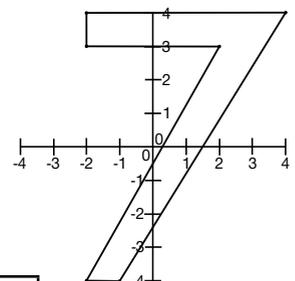
$$123 + 456 + 789 + 0 = 1,368$$

$$12 - 3 + 45 + 67 - 89 = 32$$

What Next!

$$15,625 (1 = 1^6, 64 = 2^6, 729 = 3^6, 4,096 = 4^6, \text{ and } 15,625 = 5^6)$$

Connect the Dots



It All Adds Up

0.63	0.16	0.21
0.08	0.69	0.23
0.29	0.15	0.56

Even More Challenging

6	x	1	+	4	-	8	=	2
x			+	x		x		
8	+	6	-	1	x	4	=	52
	+				-			
1	+	4	x	8	-	6	=	34
	-				+			
4	x	8	-	6	+	1	=	27
45	20	6	27					