| hp | HEWLETT
|____| PACKARD

Stanford Park Division * PO Box 10151 * Palo Alto, CA 94303-0889
415-857-2060

From: John Minck Date: Mar 8, 1988

To: Kathy Re: Media

Frankly, Scheifele made a mistake when she cancelled WAVELENGTH. With a circulation of 65,000 key names worldwide, and the ability to "piggyback" flyers in a direct mail mode every quarter, we had built the readership and customer satisfaction up to a high point. The field loved it. The 72 coordinators around the world were well-honed to distribute on field lists which were quite current.

What a deal for $60K per year (and the free editorial services of Barb Althoff and me). It's true that the field paid the postage, but were very willing.

I don't think T&M magazine with the potpourri has ever quite replaced the informal impact of WAVELENGTH, even tho I hear that the potpourri columns now draw fully half the bingos of the book. And I only use about 5 to 6 bingos each column because Julia claimed that her postcards couldn't handle so many bingos.

Speaking for a division, we have clearly lost product presence. There are products like AWS and Vector that are new and which the customers still don't know much about. The field runs away from the technology-difficulty of the AWS. The competition is in magazine pages everywhere, not only against AWS but also our traditional power meters and synthesizers.

Our insert was a failure of size. 6 column inches for AWS, when LeCroy and others are in monthly and full pages with specs all over. Our Product Managers are angry.

I'd like to propose that you use the $80K left over from your insert abandonment to consider a monthly newsletter format that we buy in the RF and MW magazines. We use a Hughes ScienceScope format to feature 4 or 5 short paragraphs on products or applications each month. We run in 2 books per month, say MW and MWJ one month and RF Design and MSN the next month.

We call the page WAVELENGTH. It's two-color and about $3K per page. It costs us about $6K per month and prep is next to free because we write the text, and DFS preps the thing and buys the space. We all send them words and pix for a maximum of two stories per month per division, much like RF/MW Notes, and they do the rest. The object is bingo inquiries for data sheets and application notes. It allows us to say what we want about our new product technology and performance, and pay it off with data sheets and notes. It gives us some product presence, and is current news with small cameo pix to show there's a real product.

This could all happen pretty fast and could run the whole year for less than $100K. It would obviously not have room for much etching. Just musing.

Package. Dated: 10/11/85 at 1623.
Subject: Style Guide
Creator: John MINCK / HP0400/02 Contents: 2.

Part 1.

TO: Dean ABRAMSON / HP4500/MK
Barbara ALTHOFF / HP0400/02
Allan ARMSTRONG / HP5300/A0
Jan HOLLER / HP1000/21
Marc SAUNDERS / HP0400/02
Carol SCHEIFELE / HP0000/20
Al THORNE / HP0200/30
Chris WADE / HPA500/04

Part 2.

As Barbara and I edit WAVELENGTH, we are always faced with the same problem as the editors of TIME. Your prose arrives from the various corners of the universe with diverse styles. To help in our work, we'd like to ask for your help in the original creation. And, most importantly of course, the customer will not get confused and frustrated by sudden changes in style.

But first, some background. Some of you will recall that the genesis of WAVELENGTH happened as the old MTE DIRECT MAILER was being re-incarnated in 1982. We thought of having Garvin do a monthly magazine ad which would be a vertical one-third or one-half page with capsule stories which were breezy and personal and very tightly written. In essence, we wanted the best 60 seconds of a spoken pitch on the subject at hand.

The proposed style was a combination of things. We liked the Kiplinger Letter format with a typewriter font and an underlined head, but not all the internal underlining they do. Kiplinger sucks you into it. It sits there on your in-basket and you read a paragraph and are caught.

The second style model we used was the Hughes Aircraft ScienceScope page of technical news which they also used for recruiting. Incidentally, they did that page since the one recruiting paragraph out of 5 product-puff paragraphs qualified it for charging the ad to military contract money. In looking back at the Hughes ad series, I found them as early as 1965.

We also considered the long-story format of some Kodak ads that ran in Scientific American some years ago. These were informal, technical stories written in an interesting, very personal tone.

I've included a copy of each of these formats for your background.

In WAVELENGTH, I have written most of the SPD paragraphs with a very informal style. I've included copies of some of the past SPD stuff. In editing the inbound manuscripts, I've tried to do as little as possible, but I do re-touch some of the more technically-wordy pieces, to try and warm them up a bit. Too many model numbers and titles are pretty oppressive. It's important to get the model numbers and even product titles in there, but only once if possible. According to customers I talk to, we have an arrogance about using too many HP model numbers, almost like a secret code game. So we need to minimize them.

I've tried to resist the temptation of listing all the features of the product. It really gets tedious with such a recitation. Far better to hit hard on the

three or four main points and then move on. It's back to the concept of the one-minute phone call to the customer with your best stuff, and why it is important for the customer to read---top point---next point---and goodbye.

I'm not telling you old pro's anything. But it looks like there may be quite a few of the stories coming in written by regular product folks. So maybe they could look at these guides and samples.

When I sit down to write the lead line, I try to imagine the engineer I'm after, sitting there reading what I wrote and looking for the key word that relates to his world and project. That's why I use a lot of phrases like "If you are" and "When you need__" and "Measurements of ..." and so forth.

I think if the story runs more than 10 or 12 lines, we use paragraphs. I have doubts on the last line calling for action. Since the mailback coupon is always there, saying "write for the data" seems redundant. But it may still be OK. I think these stories can be friendly by recognizing and saying in print that we know most of the readers are short of time and harassed by budgetary problems and technical problems and etc. After all, that is what we do best. Solve the measurement problems by the world measurement experts.

I suggest we use the Duer Catalog guide of initial caps for instrument names following the model number. Since we aren't adapting to the magazine-style of the PR releases, we might as well get the little additional impact of caps.

Well, those are my suggestions. Barbara and I are always open to changes and other suggestions. The questionnaire returns are up to about 2,000 now and we will have a report for you by the time of the Marcom Council meeting. At that time, we can also spend some time honing up these guidelines too, if you like.

Keep those cards and letters coming.

End of Item 9.

THE KIPLINGER WASHINGTON LETTER

Circulated weekly to business clients since 1923—Vol. 62, No. 33

THE KIPLINGER WASHINGTON EDITORS

1729 H St., N.W., Washington, D.C. 20006 Tel: 202-887-6400

Cable Address: Kiplinger Washington D C

Dear Client: Washington, Aug. 16, 1985.

There's great unevenness, spottiness in business conditions... industry to industry, company to company and from area to area. Forecasts vary widely, and no generalization can fit all lines. You see it in computers, electronics, heavy industry, farming. Some industries sailing right along...and others stuck in a rut. In many cases, small business is better off than big companies. Tells a lot about the times...and why markets are so skittish.

Does this point to a broad letdown ahead? No, don't think so. A few lines, yes...but most lines, no...a GENERAL slump isn't imminent. It's not true that the trade imbalance is about to drag us into recession or that interest rates and inflation will soon be breaking loose again. The economy next year, about the same as this year...sort of lukewarm.

Business will keep growing...following a slow, ragged course.

As the dollar softens, things will brighten up for many firms. Telecommunications, electronics, aircraft and machinery makers. Not all at once...there'll be a lag while everyone adjusts to the dollar.

Industries that still have a leg up on foreigners will do well... supercomputers, artificial intelligence, fiber optics, lasers, robotics, medical gear. New materials too...composites, ceramics and superalloys. And defense contractors, even after the stitching-up in the 1986 budget.

Retailing, average or better but varying widely area by area... weaker in farming and oil & gas regions, stronger in high-tech centers. Much worry about consumer debt...many customers just about borrowed up.

Autos and housing won't be as lush next year...sales cooling, pent-up demand pretty well satisfied. Harder to keep the ball rolling.

Banks and S&Ls, coming back well, thanks to calm interest rates.

Computer companies with a special niche will keep riding high... but hard times for personal computers, office automation, semiconductors.

Steel, mining, shipbuilding, machine tools won't bounce back. They've PERMANENTLY lost market share to new competitors, mostly foreign, and won't regain their pre-recession levels...even with a softer dollar.

But within these industries, there are firms that will prosper. The new mini-mills in steel, for example...nonunion, close to customers. And machine firms making highly automated, numerically controlled tools.

Oil & gas industry, flat...including exploration and drilling. Continued weak demand and worldwide competition will keep prices mushy.

And further strains on agriculture for AT LEAST another year. Huge surpluses. Bumper crops on the way. And little overseas demand. A slightly weaker dollar won't do the trick...more farmers will go bust.

And even farmers who are making money are "feeling poor." This affects mainly small towns so far...but a caution sign for all.

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We want to be useful ...and even interesting

Kodak

Wonder, fascination, accountants, economics

Our interest in oceanography has paid off in new friends—interesting, learned, even beautiful people, some of whom are encountered in such pleasant underwater environments as abound around St. Croix. How useful we can be to ocean science and technology remains to be seen.

It doesn't seem to take much film to accomplish what genuine working oceanographers—beautiful or not—have accomplished to date. Making lots and lots of dependable film is where we shine. A fairly direct proportionality connects the physical volume of film we make with the income that supports scholarly mathematical discourse *(see below)* as well as research toward film particularly suited for oceanography. As a matter of fact, little evidence has yet reached us that films we make for other purposes are not already well suited for oceanographic work.

Anybody who can see that we are missing a point here would do us a large favor indeed by dropping a note to S. Phillips, Special Applications, Eastman Kodak Company, Rochester, N.Y. 14650. As for illuminants that would permit aerial-photography-like surveys from a reasonable distance above the ocean bottom, we have thought of that.

Beauty and/or safety

You probably don't know the term "hand" unless you are in textiles, but you know "hand" when you feel it. Feel it, not see it. "Hand" means tactile beauty, as distinguished from visual beauty, beauty of sound, beauty of scent, etc. If textile men ever forgot what it means, life would grow drearier. If everybody agreed to forget about it, life might also be slightly safer.

For many years it has been known how to make fabrics nonflammable if you don't care how they feel, how easily they'll tear, how they discolor, how likely they are to keep their nonflammability through repeated cleanings. It has been found, however, that you do care.

This concerns us, since our spinnerettes happen to extrude a good deal of fiber for your favor.

In the case of our VEREL Modacrylic Fiber for draperies and elegant, sound-absorbing wall fabrics, the polymer itself is flame-resistant. (By official definition, at least 15% of the long-chain weight—but no more than 65%—is something other than $\left(\text{-CH}_2\text{-CH-}\right)$ with CN. That "something other" gives us our chance to retard flame.)

Now, through the intricate channels of trade that must be negotiated between fibermaker and ultimate shopper for clothes and home furnishings, word is filtering of our new ESTRON "FR" Flame Retardant Acetate. The news is that we put certain fire-quenching agents into the acetate solution before extrusion so that nothing is sacrificed of "hand," nothing of "esthetics." Since the consumer buys the fiber as cloth, fibers of higher flammability than ours might conceivably overwhelm ours in the finished product. Flame tests, once agreed upon, must tell.

"Esthetics" isn't the only problem. Cost has to be considered. Some mail-order houses have found that flame-retardant sleepwear is hard to move at premium prices.

Don't harass salespeople yet about ESTRON "FR" Acetate. It will get to you by and by.

Room to work

When a moderately well-informed person hears of lens aberrations, he thinks of defects in manufacture. Unwittingly imbued with Greek notions of perfection, he reasons that perfect spherical surfaces on perfectly homogeneous media should form perfect images.

There really is no reason why they should, and they don't. The bigger the aperture and angular field, the more they fail. Though image perfection may remain forever unattainable even with perfect spheres and media, ever nearer approaches are made. One strategy employs numerous successive spherical surfaces separating numerous media of different refractive index. Each is calculated to undo some of the others' image errors.

In another strategy, sphericity is abandoned. Still no perfection.

A third way of bending the rays is now receiving consideration: make the index vary on a gradient. Planetary atmospheres bend light that way. How to produce such media in a factory is one question. How to fight aberrations with them is another question, a mathematical question. Mathematical weapons for the fight have been fabricated by the mathematician Erich W. Marchand of the Kodak Research Laboratories. His paper "Ray Tracing in Gradient-Index Media" in the January issue of the *Journal of the Optical Society of America* broadcasts them for use. In acclaiming his achievement, let us point out that the uncrowded fields of scholarly endeavor offer satisfactions comparable in their way with those of an uncrowded physical environment.

EASTMAN KODAK COMPANY An equal-opportunity employer

CIRCA 1970

datalinks

A Newsworthy Compendium of How EAI Hybrid, Digital and Analog systems help make a complex world relatively simpler.

HOW ROUND IS ROUND?

Grammarians assure us that something is either round or it is not, not more nor less. But what is so in the world of grammar may not be necessarily so in the world of dynamics. Take an ordinary automobile tire for example. At rest it may look round, measure round, and, indeed be round. But at 60 MPH, it is subject to enormous stresses of centrifugal force as 87.5 feet of tread-face whip past a given point in a second's time. How now, round tire? How round? How imbalanced? The time to answer these fair and important questions is not after the fact but during the manufacture. And that is just what a solid-state control system engineered by EAI is doing daily for a number of tire manufacturers. Result: a superior product with a much lower reject rate, a faster manufacturing cycle, and added peace of mind for grammarians and others travelling at 60 MPH.

If you're concerned with making things that must maintain their geometry under dynamic as well as static conditions you'd be well advised to see what we have for you. Write and request "Tire", Dept. 206A. Please mention what you want to measure and control, too.

GC PEAKS AND THE SOFTWARE DEMON

As with motherhood and the flag, consensus holds that computerized data reduction is with us to stay. But, in practice, it all gets a bit hairy. Take data from an analytical instrument like a GC. A few giants in the industry continue to stumble over problems in GC like noise, signal processing, or really useful software. EAI is still the pioneer here in its PACE III analytical data system. One seemingly small thing is a software technique for resolving complex GC peaks. It consistently and accurately apportions complex areas, ranging from overlapping components to poorly resolved shoulder peaks. Part of the technique accommodates the usual "skew" in component elution to give consistent improvement is accuracy of quantitative analysis. (Our research people gave a paper on it at the 158th National ACS meeting.) It's all part of the whole PACE III system--a turnkey data system for many analytical instruments--GC, mass spec, and the like.

For a copy of the paper and a detailed booklet on PACE III write to Dept. 206A.

IMITATION POLLUTION CAN BE A SOLUTION

A topic destined to polarize the citizenry these days is pollution--any kind of pollution. Take a simple thing like free oxygen in water. Overload the water with oxygen-hungry chemicals--no oxygen. Or develop too many organisms--plant life prospers (called eutrophication) and no oxygen. Either way, no fish. And with no fish, you've upset the water ecology. Pragmatic scrutiny tells us we can't shut down our industries to bring back pristine, airy waters. Fortunately, we can imitate these conditions by computer simulation, and get a grip on the ameliorative aspects of a solution.

Recently, EAI provided the HEW with a hybrid-computer simulation of the Delaware River Estuary. From this simulation engineers can tell where to best locate stand-by reservoirs, what flow rates to employ, and when to do it. We've written this one up. A request to "Delaware", Dept. 206A, will get you a copy, and get us both cracking on another solution.

KINETIC DATA MEANINGFULLY SHAPED BY COMPUTER

In olden times petrochemical process design involved finding rate and equilibrium constants for several reactions required a trial-and-error method. Much trial. Much error.

Most process designs involve the solution of ordinary differential equations --in a lumped-parameter system where changes are taking place in time but not space. With the use of analog computers, solutions poured forth. However, distributed parameter systems involve changes in time and space simultaneously--expressed by partial differential equations. Many approaches to PDE solution have evolved for digital computers. But such solutions consume more and more hardware, with ever-present error creeping back in as problem complexity increases.

Hybrid computers clear this difficulty up. Kinetic data is programmed into the analog portion, actual results go into digital computer memory. The analog makes a series of process condition runs, the digital stores the data, matches the results from the plant and computes least mean square deviations. The "solution" has been found when results of simulation most closely match actual conditions, and no further reductions can be made in mean square deviation values. Optimization is achieved--in time, money and results.

After much struggle, EAI is pleased to offer a software package in this arcane speciality--write to "Kinetic", Dept.206A, Electronic Associates, Inc., West Long Branch, N.J. 07764.

EAI®

An equal-opportunity employer with unequaled employment opportunity.

CIRCA 1970

SCIENCE/SCOPE

Transmitting the entire Encyclopaedia Britannica in just two seconds would be possible with technologies being perfected at Hughes for increasing data rates of communications satellites. Experimental hardware -- including signal processors, switches, and logic circuits -- has demonstrated rates up to 4 billion bits per second while using but a fraction of the power of conventional equipment. Satellites carrying these components and using time-sharing techniques would need only one transponder to carry thousands of telephone conversations, computer data links, and TV channels among scores of cities simultaneously.

A potentially lethal leak of hydrochloric acid from a million-gallon tank on the Chicago docks was neutralized recently with the aid of a hand-held infrared viewer. The device, a Hughes Probeye® viewer, senses heat to create bright red pictures for display through an eyepiece. It let firemen see through a huge gas cloud and determine the level of acid in the tank, so they would know how much slaked lime to use to neutralize the acid. At a manufacturing complex in Long Beach, California, a maintenance man used the viewer to discover two loose connections in a high-voltage transformer feeding the plant's computers. Repairs kept the transformer from burning up. Inquiries about the energy and safety uses of the Probeye viewer should be directed to (714) 438-9191, Ext. 223.

A revolutionary mosaic infrared seeker, which creates TV-like pictures of a scene's radiated heat to allow missiles to lock on and guide themselves to tactical military targets, promises to provide increased performance at reduced size, cost, and complexity. The seeker incorporates more than 1000 infrared detectors mated to a corresponding number of charge-coupled devices used for signal processing. All these elements are located at the focal plane of the seeker. Unlike conventional sensors, which mechanically scan a scene, the focal plane array "stares" at an entire scene to provide extremely high sensitivity. The seeker, only four inches in diameter, is being developed for the U.S. Army and the Defense Advanced Research Projects Agency (DARPA).

The Manufacturing Division of Hughes Missile Systems Group in Tucson has many immediate openings for engineers. These career opportunities require expertise in designing test equipment for advanced major electronic and missile system programs. Openings range from digital logic, analog, and IF/RF circuit design to electro-optical and IR system design. Also needed are industrial engineers and manufacturing production engineers. For immediate consideration, send resume to Engineering Recruitment, Hughes Aircraft Company, P.O. Box 11337, Dept. SE, Tucson, AZ 85734. Or call (602) 746-8484. Equal opportunity employer.

Increased productivity is one major benefit enjoyed by the electronics business since the advent of employee Quality Circles. Quality Circles are groups of volunteers from a single area doing the same or similar work who meet regularly to explore work-related problems and possible solutions. Besides solving problems, the circles help improve morale because employees have a voice in how their work can best be done. Since Quality Circles began four years ago at Hughes, about 160 groups have been formed, involving some 1400 persons.

Creating a new world with electronics

HUGHES

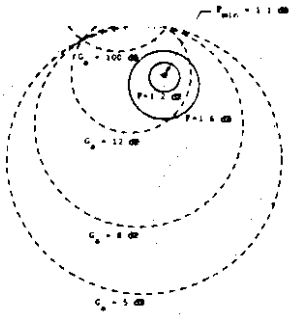
HUGHES AIRCRAFT COMPANY
CULVER CITY, CALIFORNIA 90230

CIRCA 1980

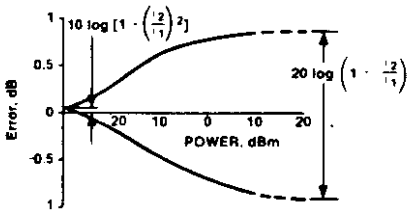
SPD SAMPLES

Cavity-tuned microwave signal generators give you more of what you buy signal generators for: great signal-to-noise ratio and ultra-low spurious. But frequency coverage has always stayed around 1½ to 2 octaves. Now HP 8683D (2.3 to 13 GHz) and HP 8684D (5.4 to 18/25 GHz) Signal Generators have internal doublers to extend their ranges. And the Option 001 Power Amplifiers deliver 10 mw across the whole range.

A new 16-page Product Note, ''Performance & Applications of the HP 8683/4D Signal Generators,'' describes all the performance details of these doubled and amplified units. All HP product notes show typical performance curves of important parameters under lab conditions and contrast these to the warranted instrument specifications which hold over 0 to 55°C and other harsh environments. This note also describes technical considerations of passive frequency doubling, and specialized applications such as chirp radar, millimeter wave signal generation, and satellite video receiver testing. A copy of PN 8683/4D-2 is yours for the asking.

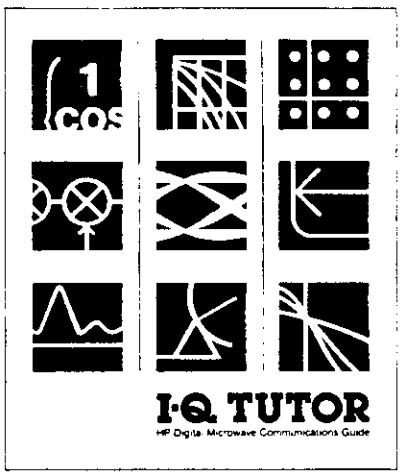


''Curing a Subtle but Significant Cause of Noise Figure Error'' would be important to you if you're pushing the amplifier state-of-the-art. HP author Nick Kuhn's recent article with the above title appears in the June 1984 issue of the Microwave Journal. When measuring ultra-low-noise-figure amplifiers that are sensitive to input reflection coefficient, slight changes of phase angle in the noise source going from on to off can cause slight changes of gain. This masquerades as a change of noise figure which is quite significant on low NF amplifiers. The article details the noise figure and gain circle basis for the effect, and, not surprisingly, shows that the HP 346A Noise Source (which contains an internal 10 dB isolation pad) helps solve the problem.



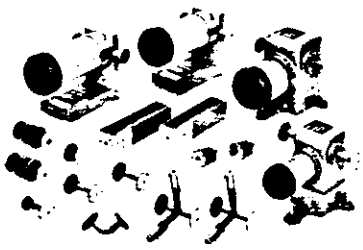
Let's review why you might use a peak power meter instead of an average-responding one? A recent HP article in the May 1984 issue of MSN Magazine ''Pulsed Microwave Signal Peak-Power Measurement Improves,'' details several reasons: (1) peak-power meters avoid a rep-rate beating problem with pulsed signals, (2) peak-power meters can measure true peak on two-tone tests if the tone separation is less than 3.5 MHz, (3) peak measurements require no duty-cycle computation, and (4) the HP 8900D can compensate for 10-60 dB of system directional couplers. Finally, the article describes a useful model for predicting measurement errors in the quasi-square-law detection range caused by non-sinusoidal waveforms (harmonics, modulation, etc). If you're working in pulsed power, we thought you may wish to refer to the article.

SPD SAMPLES



A Digital System Model on a Disc

I·Q Tutor puts a powerful digital microwave system training model at your fingertips. HP 11736A I·Q Tutor is interactive software and an 80-page self-paced tutorial. It describes the major building blocks of a complete digital communications system from the analog input through modulation, transmission, demodulation and conversion back to analog. You'll find it looks and feels like a laboratory workbench where you can explore a model communications system and measure signals at various system nodes. It simulates some of the more complex problems facing today's design engineers, like multipath fades and high power amplifier nonlinearities. If you are a new engineer, an engineering technician, or a senior engineer moving into digital communications from the analog world, you will find I·Q Tutor a refreshing, enjoyable way to quickly learn the fundamentals of digital microwave communications. You'll need an HP 9000 Model 216 or Model 236 Computer to run the program. For more information, check the box marked ''I·Q Tutor''.



If you think of all the passive components you need to assemble a microwave measurement system as ''Glue'', we'd like to announce HP's new millimeter-wave glue. Directional couplers, frequency meters, video detectors, isolators, fixed and rotary-vane attenuators, terminations and shorts, bends, twists and straights! All available now in Q-band (33.0-50.0 GHz) and U-band (40.0-60.0 GHz)! And these new measurement accessories offer you HP's traditional measurement confidence with broadband operation, conservative specs, ease of use, and easy-availability when you order your other mm-wave equipment from HP. All the details are yours on a total of 10 data sheets shown on the accompanying literature request form.

Incidentally, did you ever wonder why HP makes such a point of describing microwave components as measurement accessories? We do it to emphasize the several extra performance features of components when used in a measurement role. A measurement accessory usually has full band operation; 1.5 to 1 frequency ratios for waveguide, and often dc-26.5 GHz for coax. And it has high-performance specifications; high directivity for couplers, low SWR and low loss to cause the lowest uncertainties when you use it in a measurement setup.

Ordinary or utility microwave components used in OEM system applications might have high performance or not, depending on the system needs. Most operating microwave systems run in narrow, allocated bands so such components often don't need more than 5% bands.