A USER'S GUIDE TO HOME TERMINAL UNITS

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VIACOM CABLEVISION

INTRODUCTION

The Home Terminal Unit (HTU), in its many varieties, has made possible the reception of a multitude of special cable-delivered programs to our subscribers. With the advent of Addressable HTUs, an entirely new approach to providing and controlling subscriber services is now available.

The additional complexity of the addressable system warrants a careful consideration of its total impact on cable system operations. The addressable product presents a new set of technical challenges, as well as inheriting some of the shortcomings of older generation HTUs.

Finally, there is on the horizon, the potential for greatly reducing the costs of addressable HTUs with the work being done on Cable Compatible Television Receivers by a joint EIA/NCTA Engineering Committee.

OUTLINE

I. SUBSCRIBER EXPECTATIONS

   A. High product reliability

      1. As the monthly bill for cable service increases, subscribers become less tolerant of product deficiencies and failures.
      2. The same caveat applies to all other aspects of plant operations.

   B. Product friendliness

      1. Entries and functions easily performed and remembered
      2. Condensed and well-written customer operation booklet
      3. Booklet may include common operating errors

   C. Product esthetics

      1. Attractive-looking
      2. Unobtrusive design, blends well with surroundings

II. OPERATOR EXPECTATIONS

   A. Product Reliability

      1. Short term and long term

   B. Historical data -- HTU Failure Rates

      1. Non-addressable HTUs -- service call percentages
      2. Addressable HTUs -- service call percentages
      3. The "hidden service calls"

   C. On-going vendor support

III. PRE-PURCHASE CHECK LIST

   A. Reliability and Field Performance Record

      1. Check with current users -- don't take the vendor's word

   B. Delivery record of vendor

      1. Order commitments -- can he meet your long term demands
      2. Production capacity
      3. Order lead times and delivery scheduling

   C. Engineering support

      1. Do they have an adequately trained technical Field Support staff
      2. What is the vendor's position on product deficiencies
      3. Are complete and understandable operating and maintenance manuals available
      4. Do they provide Field Service updates to these manuals

   D. Repair procedures

      1. In-warranty
      2. Out-of-warranty

   E. Establish product performance specifications

      1. Electrical
      2. Mechanical
      3. Failure rates

F. Addressable software

1. Is it compatible with your on-line
    billing system
2. If not, will they provide support in
    developing a software/hardware inter-
    face
3. Is software documentation available,
    understandable and complete

G. Compatibility

1. Is the proposed scrambling technique
    compatible with any existing scram-
    bling system you may have, if you re-
    quire that capability
2. Can they make it compatible

H. Security

1. Are there older vintage converters or
    descramblers available on either the
    open or black market, that are capable
    of compromising your new purchase
2. Is the vendor willing to discuss any
    security weakness of his system
3. Is there any mechanism available
    whereby the vendor would alert his
    customers of future security breaches
4. Is the security system compatible with
    future services such as stereo audio,
    videotext and cable-ready TV sets
5. Can the security system be easily
    reproduced by pirates or tampered with

I. Addressable control capabilities

1. Maximum number of HTUs system can
    support
2. Maximum addressing cycle time
3. How is pay-per-view accommodated and
    what are the customer access para-
    meters
4. Expansion capabilities and cost
5. What happens when the system "crashes"
6. Special test equipment requirements
7. Is remote control feature under
    addressable control

J. Is special computer equipment and soft-
    ware available for Q.C. testing, independ-
    ent of management computer

IV. POST-PURCHASE CONSIDERATIONS

A. Inventory control

1. Automated vs manual entries

B. Incoming Quality Control checks

1. Should you or shouldn't you
2. Average failure rates

C. Q.C. time comparisons

1. Standard HTUs
2. Addressable HTUs

V. FIELD PROBLEMS WITH ADDRESSABLE HTUs

A. Bad subscriber grounds/cut AC cord prongs

B. Lightning exposure and its consequences

C. HTU trouble points

1. Power supply design
2. Shielding characteristics
3. Video modulation/aural deviation on
    Baseband Decoders
4. AM radio and CB susceptibility

D. Subscriber drop levels

1. Too low
2. Too high

F. Cable plant ingress problems

G. High level sweep problems

H. Difficult operating procedures

1. Customer confusion
2. Customer education service calls
3. Parental control easy to use
4. Favorite channel recall feature easy
    to use

I. Computer problems

1. HTU deauthorizations

VI. THE CABLE COMPATIBLE TELEVISION SET -- HTU OF
     THE FUTURE?

A joint EIA/NCTA Engineering Committee has
spent the last year and a half developing new
performance specifications for a Cable Compatible
Television Receiver. The efforts have been
divided into three major categories.

A. Tuning standards

    EIA Interim Standard No. 6(IS-6) now
    establishes a channelization structure for
    Cable Compatible Receivers that corre-
    sponds to historical cable industry channel
    designations for standard, incremental and
    harmonically related cable systems, extend-
    ing from 50 MHz to 650 MHz.

    This Interim Standard also includes manu-
    facturer's labeling suggestions for
    receivers with varying degrees of tuning
    capabilities. Copies are available from
    the Electronic Industries Association in
    Washington, D.C.

B. Interface standards

    Work continues on establishing electrical
    interface standards such as maximum and
    minimum input levels, spurious signal leak-
    age and RF shielding characteristics. It
    is possible that most of these standards
    could be implemented in the 1985 model
    receivers.

The increased RF shielding characteristics should allow the use of cable-compatible receivers in high ambient signal conditions, without having to install a cable converter to protect the receiver from direct pick-up interference.

C. Baseband decoder interface standard

Work also continues on establishing a multi-pin connector interface at the rear of the cable-compatible receiver to facilitate the development of a less expensive cable decoder. This could reduce the cost of an addressable decoder by at least half the current price.

If complete compatibility can be achieved by the cable-compatible receiver interface and a secure scrambling system, the possibility exists for the cable customer to own his own decoder module.

The decoder interface will also support the attachment of other baseband video and audio devices such as VCRs, stereo systems, computers, etc.

Greater cable industry participation is sorely needed to develop a baseband interface that meets our operational and economic needs.